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**RADIO**

**SERVICE MANUAL**

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**CROSLEY**

# RADIO SERVICE MANUAL

Revised and Abridged Edition

Covering

**1943 SETS AND EARLIER**

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## CONTENTS

HOUSEHOLD RADIOS	Pages 1 to 524
ROAMIOS (Auto and Air)	Pages 525 to 581
RECORD PLAYER UNITS	Pages 582 to 615
COMPLETE CHASSIS NUMBER INDEX	Pages I and II
MODEL—CHASSIS CROSS REFERENCE	Pages III and IV

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*Published by*

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SERVICE DEPARTMENT

CINCINNATI, OHIO

#### *DEDICATION*

*This book is sincerely and respectfully dedicated to the Crosley distributors, Crosley dealers and to the independent service people who so very ably performed Crosley service during the difficult years of World War II.*

# INDEX

See Pages III and IV for Cross Reference Listing—Page IV For Record Player Data

## HOUSEHOLD SETS

Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number
2C1	TRF	1	44BU (Export)	455	93-94	126-1	175	179
4B1	456	2	45	455	95	127	175	179
5B3	456	3	47	TRF	96	127-1	175	180
5C2	181.5	4	48	455	97-98	128	175	180
5H1	456	5	48	TRF	96	129	181.5	181
5M3	456	6	49	455	99-100	129-1	181.5	181
5V1	181.5	7	50BQ (Export)	455	101-102	130	181.5	182
5V2	181.5	8	53	TRF	103	130-1	181.5	183
5-50	TRF	9	54	TRF	103	131	175	184
5-75	TRF	9	55	455	104-105-106	132-1	181.5	184
6-60	TRF	9	55	TRF	107	133	181.5	185
6-85	TRF	9	56	TRF	108	134	181.5	185
6B1	456	10-11	57	TRF	103	134-1	181.5	186
6H2	456	12	57	455	109	135	181.5	186
6H3	456	13	58	455	110	136-1	456	187
6V2	181.5	14	58	TRF	111	137	181.5	188
7 Converter		15	59	455	112-113-114-115-116	141	181.5	189
7-1 Converter		16	59	TRF	117	143	181.5	190
7-2 Converter		16	60	455	118-119-120	146	181.5	191
7H2	456	17	60S	TRF	121	146-1	181.5	191
7H3	456	18	61S	TRF	121	147	TRF	192
7V2	181.5	19	62S	TRF	121	148	456	193
8B3	456	20	63	TRF	121	150	181.5	194
8H1	456	21-22	63S	455	122-123	154	456	195
10 Converter		23	64	TRF	121	155	456	196
10	TRF	24	65-J-W	455	124-125	156	456	197
10P3	181.5	25-26	67	455	126-127	157	181.5	197
11-J11	455	27-28	68	455	128	158	181.5	198
12-J12	455	29-30	70S	455	129	159	456	198
13-J13	455	31-32	70	TRF	130	160	181.5	199
14-J14	455	31-32	71	455	131-132-133	163	456	200
15-J15	455	33-34	72	455	134	164	456	201
16-J16	455	35-36	73	455	135	166	456	202
18-J18	455	37-38	74	455	136-137	167	456	203
20	455	39-40	74	455	138	168	181.5	204
20	TRF	41	74U	455	138	169	456	205
21	455	39-40	75	455	139-140	169 Revised	456	206
21	TRF	41	76	455	141-142	170	181.5	207
22	455	42-43	76	TRF	143	171	181.5	208-209
22	TRF	41	77	455	141-142	172	456	202
23	455	39-40	77	TRF	144	173	456	210
24	455	44-45	77-1	TRF	143	173-5	456	210
25	455	46-47-48	78 (Export)	455	145-146	174	456	210
26 Batt.	TRF	49	79	455	147-148	175	181.5	211
26	455	50-51-52	80	455	149-150	176	456	212
27	455	53	82S	TRF	86	178	456	213
27 Batt.	TRF	54	83	455	151	179	181.5	214
28 Batt.	TRF	54	84	TRF	152	180	181.5	215-216
28	455	55-56	85	455	153-154	181	456	217-218
29	455	57-58-59	86	455	155-156	182	456	219
30	455	60-61	90	455	157	184	456	220
30S	TRF	62	RFL90	TRF	158	401	Regen.	221
31	455	63-64-65	91	455	159	401A	Regen.	222
31S	TRF	62	92	TRF	158	415	450	223-224
33	455	66-67-68	93	455	160	416	450	224-225
33 (BG)	455	66-67-68	95	455	161-162-163	417 Chattabox	90	226-227
33S	TRF	62	96	455	164-165	418	TRF	227-228
34	455	69-70-71	100	455	166	425	450	229-230
34S	TRF	62	104	455	167	428	TRF	230-231
35	455	72-73-74	105	455	168	429	455	232-233
35	455	75-76	106	455	169	435	450	233-234
J35	455	72-73-74	110	455	170-171	438	TRF	235-236
36	455	77-78	111	455	170-171	439	455	236-237
36	455	78-79	115	125	172	448	TRF	238-239
37	455	80-81	117 Power Converter		288-289-290	449	455	239-240
38 Field Supply		81	118 Reado Printer		415-416-417	458	455	241-242
38	455	72-73-74	119	181.5	173	459	455	239-240
39 (Export)	455	82-83	120	175	174	468	455	242-243
40BP (Export)	455	84-85	121 Series "A"	175	174	505-525	450	244-245
40S	TRF	86	121 Series "B"	175	175	506	450	246-247
41A	TRF	87	122	175	175	507	455	248-249
41BQ (Export)	455	88-89	123	175	176	515-5515	450	249-250
41S	TRF	86	124	175	176	516-5516-6516	450	251-252
42	TRF	87	124 Revised	175	177	517-547-5517	455	252-253-254
42BR (Export)	455	90-91	124-1	175	177	518-651R (Export)	455	255-256
42S	TRF	86	125	175	178	519-529	455	257-258
43	455	92	126	175	178	525-505	450	244-245

## HOUSEHOLD SETS—CONTINUED

Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number
526-5526	450	259-260	666-5666	450	356-357	1019-J819-819- (5Y3)	455	428-429-430
527	455	261-262	667	455	358-359	819 (25Z6)	455	431-432
528	455	262-263-264	668	455	360-361	1026	450	467
529-519	455	257-258	669-6669-6679-7669	455	362	1028	455	468
534	456	265-266	676	450	363-364	1055	450	469-470
535	450	267-268	677	455	365-366	1117	455	471-472-473
536-5536	450	268-269	689	455	367-368	1118-1128	455	474-475-476
537	455	270-271	696	450	369	1126	450	477-478-479
539-J539-5539-J5539	455	272-273-274-275-276	704	Neut.	370	1127	455	480-481-482
		277-278	704A	Neut.	370	1128-1118	455	474-475-476
545	450	278-279-280	704B	Neut.	371	1137	455	483-484-485-486
546	450	252-253-254	705	Neut.	371	1155	455	487-488-489
547-517-5517	455	281-282-283	706	Neut.	372	1216	450	490-491-492
548-558-5548	455	284-285	714	455	373-374	1217-1227	455	493-494
549	455	285-286	715	450	375-376	1218	455	493-494
555-5555	450	287-288	716	450	377-378	1227-1217	455	493-494
556	450	288-289-290	718	455	379-380	1316	455	493-494
557 & 117 Power Supply	455	291-292	719	455	381-382-383		450	495-496-497-498
558-548-5548	455	292-293	725	450	384-385-386		450	499-500-501-502
566	455	294-295	726	450	387-388-389	1336	450	503-504
567	TRF	295-296	726-01-11-21-31-41-51 (Export)	462	390-391	1516	450	505-506
568	455	297-298	726-02-12-22-32-42-52 (Export)	462	392-393	1516-13 to 53 (Export)	450	505-506
577	455	299-300	728-738-748	455	394-395	3716 (WLW)	450	506-507-508-509-510-511-512
579-5579-6579	455	300-301-302	729	455	396-397-398		455	513-514
586	262	303-304	736	450	399-400	5509	450	249-250
587-5587	455	308-309	737 (Export)	455	401-402-403	5515-515	450	251-252
588	455	309-310	738-728-748	455	394-395	5516-516-6516	450	252-253-254
589-5589	455	311-312	739-J739-7739-J7739	455	404-405-406-407-408-409	5517-517-547	455	515-516-517
596	450	312-313	746-61 (Export)	462	410-411-412	5519-J5519	455	259-260
597-5597	455	314	746-62 (Export)	462	410-411-412	5526-526	450	259-260
598	TRF	315-316	748-728-738	455	394-395	5529-J5529	455	515-516-517
599	TRF	317	749	455	413-414	5536-536	450	268-269
601	Neut.	317	758 & 118 Reado Printer	455	415-416-417	5539-J5539-539-J539	455	272-273-274-275-276
602	Neut.	317	804	Neut.	418	5548-548-558	455	281-282-283
605	450	318-319	814	456	419	5549	455	518-519
608	TRF	320-321	815	450	420-421	5555-555	450	285-286
609	TRF	321-322-323	816	450	422-423	5579-579-6579	455	297-298
610	TRF	324-325	817	456	424-425	5587-587	455	300-301-302
615	450	326-327	818	455	426-427	5589-589	455	305-306-307
616	450	328-329	819 (25Z6) J819	455	428-429-430-431-432	5597-597	455	309-310
617	455	330-331	819 (5Y3) J1019	455	433-434	5628-628-638	455	328-329
618	455	332-333	828	455	435-436	5648-649	455	348-349
626	450	334-335-336	855	450	437-438-439	5656-656	450	352-353
628-638-5628	455	336-337-338	865	450	440-441-442	5666-666	450	356-357
629	455	328-329	915	450	443-444-445	6516-516-6516	450	251-252
635	450	339-340	916	450	446-447-448	6518-518	455	255-256
636	450	341-342	926	450	449	6519	455	515-516-517
637	455	343-344	926 (Export)	462	450-451-452	6579-579-5579	455	297-298
638-628-5628	455	345-346	927-11-12 (Export)	455	453-454-455	6615	450	520-521
639	455	347-348	936 (Export)	455	455-456-457	6625	450	522-523
645	450	348-349	955	450	458-459-460	6669	455	362
646	450	350-351	1014	456	461-462-463	6679	455	362
647	455	352-353	1016	450	464-465-466	6689	455	524
648	455	354-355	1018	455		7669	455	362
649-5648	455			455		7739-J7739	455	404-405-406-407-408-409

## ROAMIOS AUTO RADIOS

Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number
A-150	455	525-526	A-259	455	544-545-546	F-157 (Export)	455	567-568
A-155	181.5	527	A-266	262	552-553	4A1	456	569
A-156	262.5	528-529	A-267	262	554-555	5A1	181.5	570
A-157	455	530-531	A-268	455	541-542-543	5A3	181.5	571-572
A-158	455	532-533-534	A-350	455	525-526	90	TRF	573
A-160	455	535-536	A-355	450	551	91	TRF	574
A-166	262	537-538	A-358	455	556-557	92	TRF	574
A-167	262.5	539-540	A-359 (Export)	455	558-559	95	181.5	575
A-168	455	541-542-543	A-366	262.5	560-561	96	181.5	575
A-169	455	544-545-546	A-450	455	525-526	98	181.5	576
A-177	262	547-548	A-455	455	562	99	181.5	577
A-250	450	549-550	A-459	455	563-564	102	181.5	578
A-255	450	551	A-555	455	562	103	181.5	579-580
A-258	455	532-533-534	A-559	455	565-566	AIR ROAMIO		
						992 (5R2)	181.5	581

## ALPHABETICAL MODEL-CHASSIS CROSS REFERENCE LIST

Model Name	Chassis No.	Model Name	Chassis No.	Model Name	Chassis No.	Model Name	Chassis No.
<b>A</b>		<b>Converter (Short Wave)</b>		<b>G</b>		<b>R</b>	
Administrator	122	Constitution	7-2	Galleon	525	Raider	6625
Adventurer	127 & 7-2	Corsair	1055	Galleon Console	505	Recorder Comb. & Pa.	33
A-F-M	555	Crosley Show Box	706	Gembox	608	Refrigerator	507
A-F-M Console	5555	Crosley 40	184	Gembox	609	Refrigerator	537
Alderman	129-1	Cruiser	615	Gembox	610	Repose Fire Screen	38
Ambassador	132-1			Governor	136-1	Repose Jr.	174
Announcer	124-1	<b>D</b>		<b>H</b>		<b>S</b>	
Announcer	126-1	Desk	53	Happy Hour	127	Sampler	2C1
<b>B</b>		D-C Fiver	155	<b>J</b>		Secretary	136-1
Barkentine	1155	D-C Show Box	705	Jewel Case	141	Senator	146
Bandbox Jr.	401	Dreadnaught	1155	Jewel Box	704	Septet	158
Bandbox Jr.	401A	Dual Casa	172	Jewel Box	704A	Sextet	150
Battery Chieftain	128	Dual Companion	176	Jewel Box	704B	Sixer	7V2
Bandbox	601	Dual Fiver	167	Jewel Box	704B	Seventy-two A. F.	7H2
Battery Eight	143	Dual Fiver DeLuxe	5V2	Jewel Box	804	Seventy-two A. F.	7H3
Battery Eight	815	Dual Four	169	Judge	129	Sixer	628
Battery Eight A-F	8B3	Dual Fourteen	175	Justice	129	Sixer DeLuxe	5628
Battery Five	566	Dual Seven	168	<b>L</b>		Sixer Volt Battery Fiver	638
Battery Fiver	156	Dual Seventy	179	Litfella	135	Six Volt Battery Fiver	587
Battery Fiver	178	Dual Six	173	Leader	154	Console	5587
Battery Fiver	5B3	Dual Six	173-5	<b>M</b>		Sixty-one A. F.	6H2
Battery Fiver	527	Dual Sixty	181	Mayor	146	Sixer	6V2
Battery Fifty-two	535	Dual Ten	170	Merrimac	855	Super Battery Fiver	557
Battery Forty	4B1	Dual Ten	180	Merrymaker	124-1	Super Eight	817
Battery Four	415	Dual Twelve	171	Merrymaker	126-1	Super Eleven	1117
Battery Forty-six	435	Dual Travette	176	Merrymaker	134-1	Super Six	637
Battery Major	128	Dynatrol Eleven	1127	Merrymaker	134-1	Super Six AC-DC	647
Battery Playboy	128	Dynatrol Six	617	Moderne Seven	718	Super Sextet	648
Battery Six	6B1	<b>E</b>		Monitor	865	Super Vanity Fiver	588
Battery Sixty-two	605	Eighty A-W	8H1	<b>N</b>		Symphony	132-1
Battery Sixty-six	6615	<b>F</b>		New Pup	137	<b>T</b>	
Battery Super Six	667	Fiver	148	New Travo	425	Tenace	157
Battery Vanity	458	Fiver	167	Nomad	141	Tenace	164
Bonni Boy	131	Fiver Jr.	5M3	<b>O</b>		Teletune Fiver	547
Book Case	141	Fiver DeLuxe A.	5V1	Olympia	655	Totem	147
Buccaneer	635	Fiver	515	<b>P</b>		Travette	163
Buddy	70S	Fiver Console	5515	Playtime	126-1	Travette Moderne	182
<b>C</b>		Fiver	516	Playtime	124-1	Trouper	568
Caroler	134	Fiver Console	5516	Playtime Jr.	135	Travo	166
Carrier	586	Fiver	517	Playtime	134-1	Trouper	568
Casa-D	172	Fiver Console	5517	Playtime	134-1	Twelve	163
Centurion	1014	Fiver	518	Playboy	134	<b>V</b>	
Challenger	955	Fiver	5518	Playboy	126-1	Vagabond	141
Chairside Fiver	567	Fiver A-C, D-C	577	Portable (N27BE)	27	Vanity	598
Chattabox	417	Five Superhet	597	Prestotune Eleven	1137	Vanity DeLuxe	428
Cheerio	124	Five Superhet (Dial Lit.)	5597	Prestotune Twelve	1217	Vanity DeLuxe Comb.	448
Chief	132-1	Fiver	5539	Prestotune Twelve	1217	Vanity	418
Chum	70S	Fiver	539-J539	Lowboy	1227	Viking	725
Clipper	915	Fiver	6579	Privateer	545	<b>W</b>	
Commissioner	132-1	Fiver	589-5589	<b>Q</b>		Wigit	48
Companion	163	Fifty	5H1	Quicktune Fiver	547	WLW	3716
Congressman	146-1	Fifty-Four	534				
Converter (Power)	117	Fifty-One	5C2				
Converter (Short Wave)	7						
Converter (Short Wave)	7-1						

## NUMERICAL MODEL—CHASSIS CROSS REFERENCE LIST

Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.
02CP	70	22AS	22	45CC	45	53TF	73	83CC	96	C629	676
02CQ	70	23AR	23	48CB	48	TA62	63	117-Ser. 2	1026	629	666
02CA	55	24AJ	24	48BF	48	TA62-W	63	167	1316	634	656
02CB	55	24AU	24	50	5H1	62PA	68	B250	566	B637	586
03CA	95	24AY	24	50LB	5H1	62PB	68	251	536	639M	639
03CB	95	25AX	25	51	5C2	62TA	37	295	515	644	5666
03CC	95	25AY	25	TK52-W	64	62TC	37	299	5536	649	5656
03CP	95	25AW	25	TK52	64	62TD	37	B345	556	649	5659
03CQ	95	26BB	26	52PA	67	62FA	58	B349	526	B667A	667
03CR	95	N27BE	27	TH52	65-J-W	62FB	58	B375	416	B667M	667
4C1	172	27BE	27	TH52-W	65-J-W	63FB	93	395	5526	B675	546
7H1	115	27BD	27	TH52J	65-J-W	63TA	110	B425	556	B695	636
8B1	143	28AZ	28	52TD	77	63CA	111	B429A	429	699	626
8H3AW	814	29BA	29	52TD-U	77	64MD	6H2	438M	438	B699	646
10AA	10	29AT	29	52TE	77	72CA	80	B445	546	744	716
11BY	11-J11	J-30-BC	30	52TE-U	77	72TA	79	449	616	745	716
11AB	11-J11	30BC	30	52TF	76	72CP	85	B449A	449	759	736
11AH	11-J11	31BF	31	52TF-U	76	77A	77	B459A	459	769	726
11AC	11-J11	32DC	119	52TP	72	77B	77	495	616	899	816
CA12	60	32DC	159	52TG	74	77L	77	B495	646	B899	636
12AD	12-J12	32DC6	645	52TG-U	74-U	80AW	8H1	B499	556	989	926
13AE	13-J13	33BG	33	52TA	74	80AW	8H1	C516	506	1199	1126
13BK	13-J13	C33CA	33	52TM	74	Lowboy}		525	6516	1211	1216
14AG	14-J14	34BH	34	52FA	57	82S	40S	C526	596	1313	1336
15AI	15-J15	C35AK	35	52FB	57	CB82R	28	529	516	5310AA	10
16AL	16-J16	35AK	35	52PB	71	82CP	75	537	5516	B5579M	579
18AN	18-J18	36AM	36	52TQ	83	82CQ	75	B579A	579	B5587A	5587
20AP	20	38BM	38	52FC	90	83TA	96	B587A	587	B5589M	589
21AQ	21	43FB	91	52TL	86	83CA	96	B589A	589		
22CA	59	43BT	43	53TP	100	83CQ	96	B599	646		
22CB	59	43FA	104	53FB	106	83CP	96	614	6H3		
22CP	59	45BV	45	53FA	105	83CB	96	625	6B1		

## RECORD PLAYER UNITS

Make or Model	Used on Models	Page Number
CR25	Remote Changer	592-593-594
CR26	Wireless Record Player	582-592-593-594
WEBSTER	629-C33CA-539-668	583
ALLIANCE	629-C33CA-539-668	583
ALLIANCE	22AS-35AK-52TP-53TP	584
488	438	585-586
GENERAL INSTRUMENT	82CP-82CQ-02CP-72CP	587-588-589
RECORDER ARMS	GI and Seeburg	590-591-592
SEEBURG (1940)	30BC	592-593-594
SEEBURG (1941)	29BA, 29AT, 29AZ, 34BH, 31BF, 48CB, 48BF, CB82R, 72CP, 82CQ, 82CP, 02CP	594-595-596-597
SEEBURG (1941-1942)	82CP, 82CQ, 02CP, 03CP, 23CP, 23CQ, 83CQ, 83CP, 03CQ, 03CR, 22CA, 22CB, 22CP	598-599-600-601-602-603-604
NEW PRODUCTS	52TQ	605-606-607
CAPEHART	639M	608-609-610-611
RADIO PRODUCTS	82CP, 82CQ, 02CP, 83CQ, 83CP, 03CP, 03CQ, 03CR, 22CA, 22CB, 22CP	612-613-614-615

## MODEL 2-C-1

### Specifications

Model 2-C-1 is a two tube tuned radio frequency receiver designed for operation from AC or DC 110 Volt electric circuit.

### Tubes And Voltage Limits

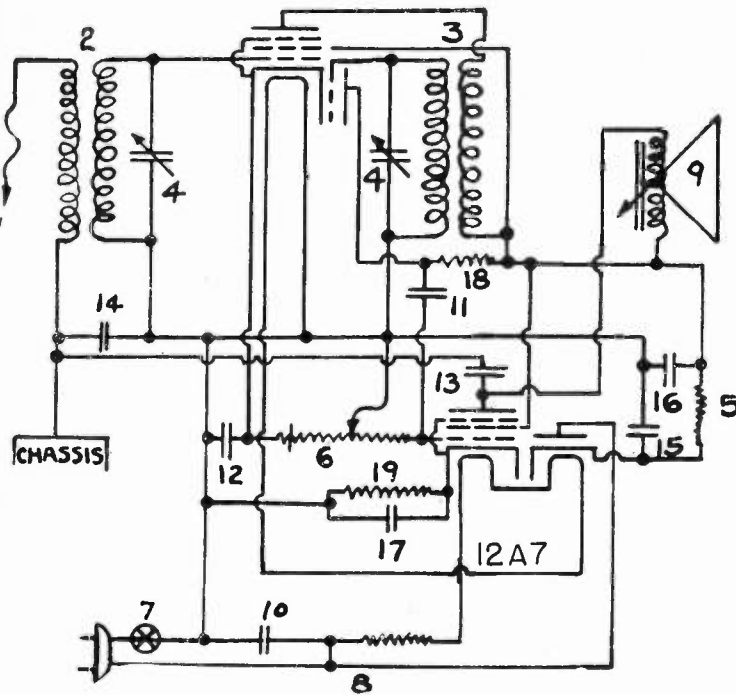
The following are the tubes and voltages meas-

ured from tube contact to negative line with 250,000 ohm 250 Volt voltmeter with receiver in operating condition but with no signal to the antenna, and with a line voltage of 117.5 Volts 60 cy. AC-DC Voltages approximately 90% of values shown.

Tube	Position And Use	Plate	Scr. Grid	Control Grid	Cathode	PL	GL	KL	Filament
6-F-7	R. F. and Regen. Det.	125	125	0	5-30	30	0	—	6.5
12-A-7	A. F. and Rect.	115	125	0	10	117.5	—	135	12.5

VOLTAGE LIMITS ARE PLUS OR MINUS 10% OF VALUES GIVEN

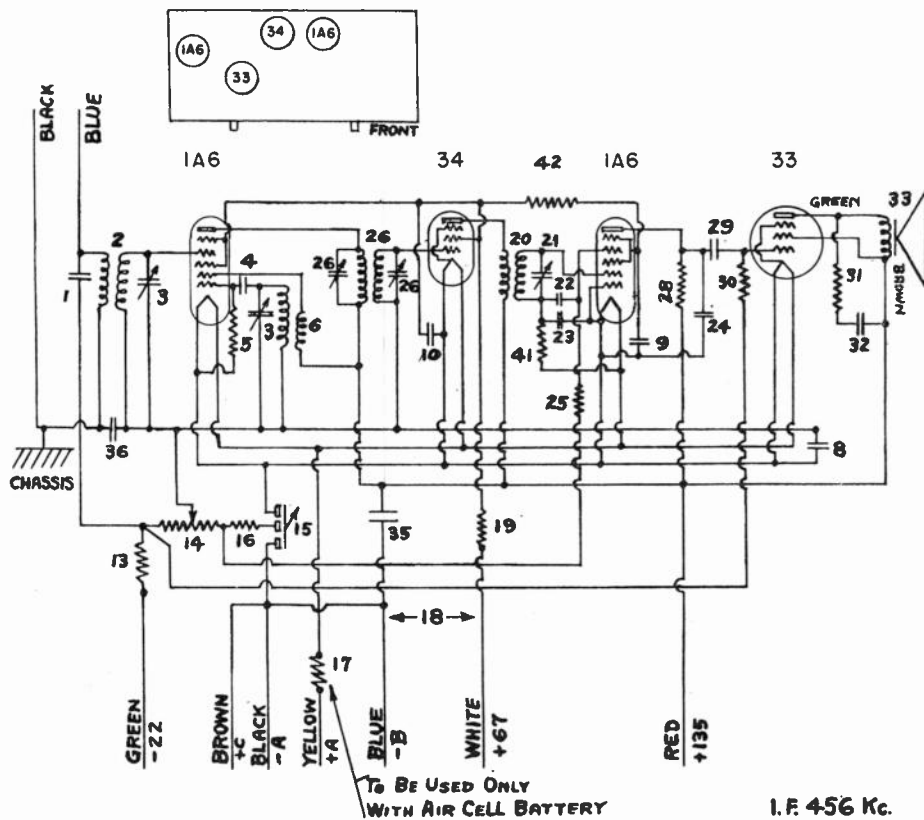
6F7



Qty.	Part No.	Description	Item
1	G33-32000	Antenna Trans. ....	2
1	G21-32001	R. F. Trans. ....	3
1	G8-33001	Variable Condenser .....	4
1	W34698B	Volume Control & Switch.....	6-7
1	G7-34400	Tube Connector Assem.....	
1	G8-34400	Tube Connector Assem.....	
1	B34702B	Resistance Cable and Plug (325 Ohms) .....	8
1	223M-B	Speaker Unit .....	9
1	W34710	Speaker Bracket .....	
<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	W34711	.02 Mfd. 110 V. ....	10
1	W34713	.006 Mfd. 180 V. ....	11
Qty.	Part No.	Description	Item
1	W34712	.25 Mfd. 160 V. ....	12
1	W34714	.008-.05 Mfd. 160 V.-160 V. ....	13-14
1	W34704A	16.-16.-8. Mfd. 100 V.-100 V.- 20 V. ....	15
		16-17	16-17
<b>RESISTORS</b>			
2	W22514	750 Ohm Flex. ....	5-19
1	21454	1 Megohm .....	18
1	4AC	Cabinet (Ship Design) .....	
1	4AE	Cabinet (Artists Pictures) ..	
1	G1-34822	4AC Cabinet Front .....	
1	G2-34822	4AE Cabinet Front .....	
1	B34710	Cabinet Back .....	
1	L-34885	Speaker Pin Assem. ....	
2	W2244B	Knobs .....	



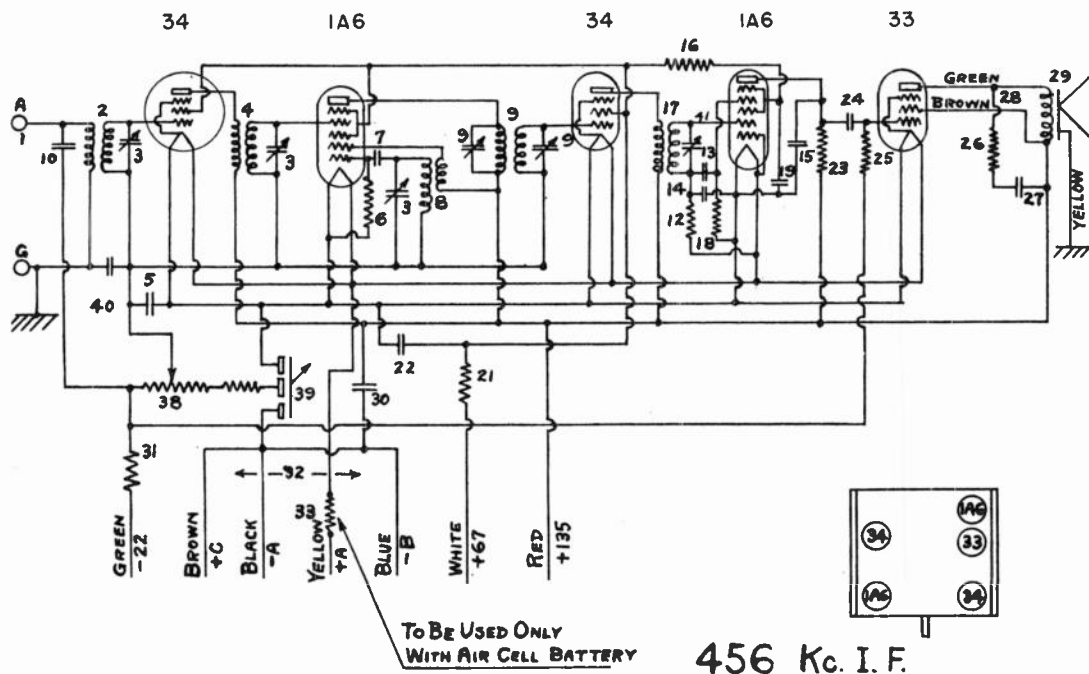
# Wiring Diagram For Model 4B1



Figures in first column correspond to figures in diagram

1	W	—28621	0.02 Mfd. 200 Volt	22	W	—28621	0.02 Mfd. 200 Volt
2	G27	—32000	Antenna Coil	23	W	—25572	0.0005 Mfd. 400 Volt
3	G6	—33001	Variable Cond.	24	W	—26577	0.0005 Mfd. 400 Volt
4	W	—5382	0.00025 Mfd.	25			3 Meg.
5		21875	100,000 Ohms	26	G9	—32004	1st I. F. Trans.
6	G9	—32002	Oscillator Coil	27			
7				28		21455	300,000 Ohms
8	W	—28622	0.1 Mfd. 200 Volt	29	W	—28621	0.02 Mfd. 200 Volt
9			0.1 Mfd. 200 Volt	30		21454	1 Meg.
10	W	—30321-A	1.0 Mfd. 160 Volt	31		24814	7,000 Ohms
11				32	W	—28619	0.006 Mfd. 200 Volt
12				33		21M	Speaker
13		27121	5,000 Ohms	34			
14	W	—33922-A	Volume Control 3 P. S. T. Switch	35	W	—29910-A	0.25 Mfd. 200 Volt
15					36	W	—28621
16	W	—23013	2,000 Ohms	37			
17	G5	—23300	0.6 Ohm	38			
18	G2	—29237	Cable & Marker Assem.	39			
19	W	—21452	1,100 Ohms	40			
20	G13	—32004	2nd I. F. Trans.	41		23785	500,000 Ohms
21	G5	—33005	I. F. Trimmer Cond.	42		24990	25,000 Ohms

# Wiring Diagram For Model 5B3

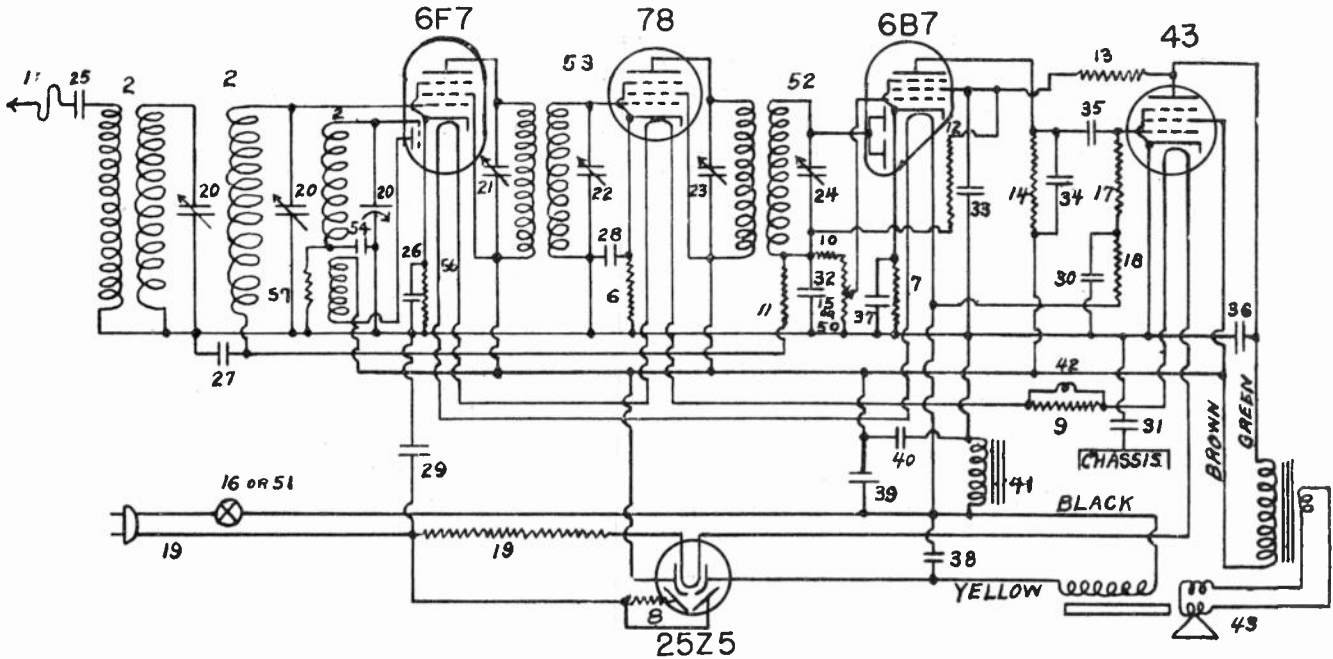


Figures in first column correspond to figures in diagram

1	G10	—26719	Ant. Gnd. Term.	22	W	—30321-A	1.0 Mfd. 160 Volt
2	G10	—32000	Antenna Coil	23		23785	500,000 Ohms
3	G4	—33002	Tuning Condenser	24	W	—28621	0.02 Mfd. 200 Volt
4	G17	—32001	R. F. Transformer	25		21454	1 Megohm
5	W	—24049-B	0.1 Mfd. 200 Volt	26		24814	7,000 Ohms
6		21875	100,000 Ohms	27	W	—28619	.006 Mfd.
7	G1	—34004	.025 Mfd. (Mica)	28	W	—27933	Speaker Cable
8	G9	—32002	Oscillator Coil	29		30418	336-3B Speaker
9	G9	—32004	1st I. F. Trans.	30	W	—29910-A	0.25 Mfd. 200 Volt
10	W	—28621	.02 Mfd. 200 Volt	31		27121	5,000 Ohms
11				32	G2	—29237	Battery Cable
12		23785	500,000 Ohms	33	G2	—23300	Air Cell Resistor .53 Ohms
13	W	—28621	.02 Mfd. 200 Volt	34			
14	W	—26152-A	.00015 Mfd. 400 Volt	35			
15			.0001 Mfd. 400 Volt	36			
16		21237-A	60,000 Ohms	37			
17	G13	—32004	2nd I. F. Trans.	38	W	—32649	Volume Cont. 10,000 Ohms Switch 3. P. S. T.
18		21454	1 Megohm	39			
19	W	—24049-B	0.1 Mfd. 200 Volt	40	W	—24049-B	0.1 Mfd. 200 Volt
20				41	G8	—33005	I. F. Tuning Cond.
21	W	—21452	1,100 Ohms				

# CHASSIS 5C2

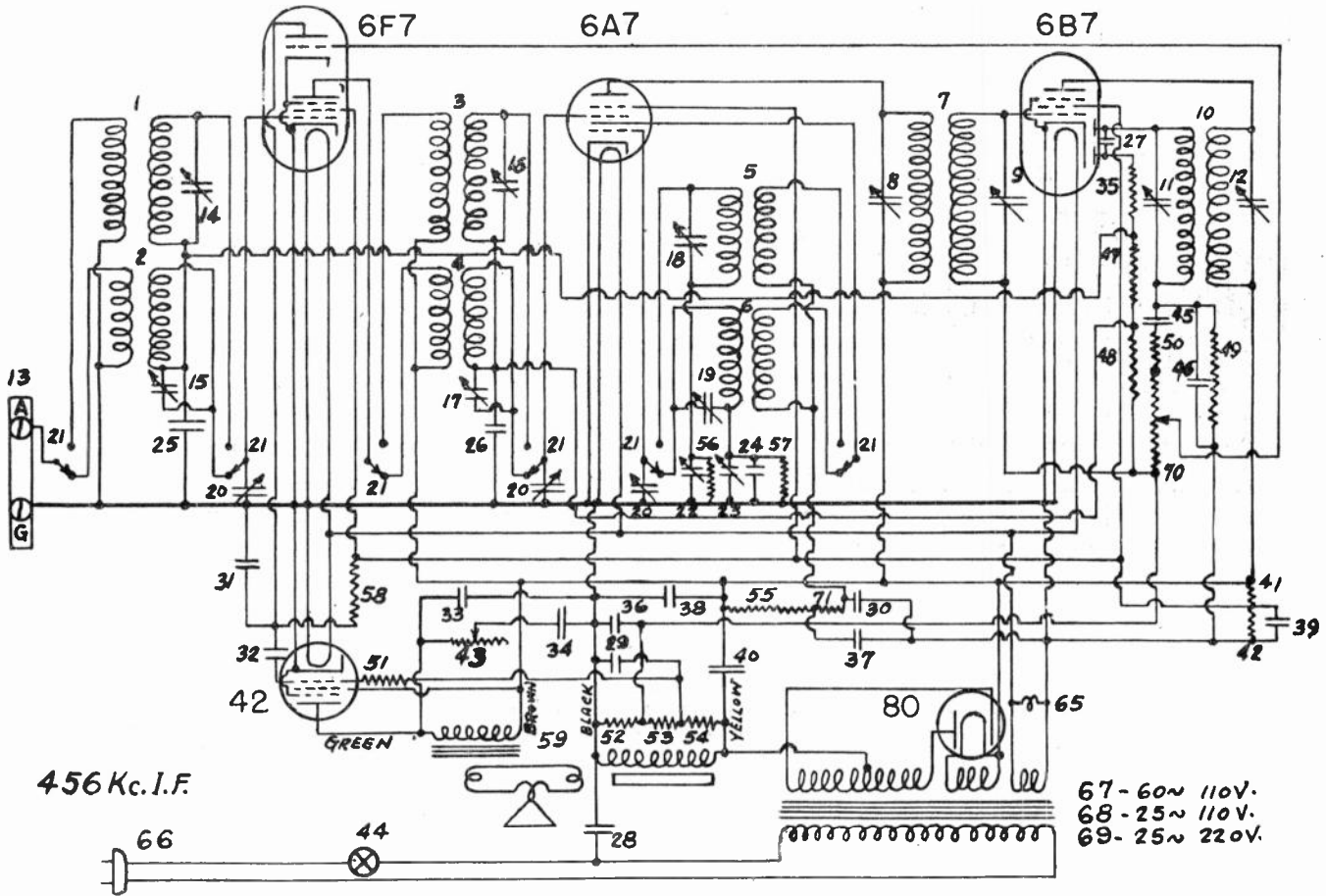
Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup	Ep-osc
6F7	Osc-Mod.	6.5	100	0	5	100	—	100
78	I. F.	6.5	100	0	3	100	3	—
6B7	Diode-AF	6.5	15	0	1	15	—	—
43	Output	27	96	-20	0	100	—	—
25Z5	Rectifier	27	—	—	100	—	—	—



Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	W30323	0.01 Mfd. 200 V.	36	1	G1-32000	Antenna Coil	2
1	W28621	0.02 Mfd. 200 V.	63	1	G2-32003	1st I. F. Trans. Coil	53
1	W28623	0.02-0.02 Mfd. 200 V.-200 V.	64-65	1	G1-32003	Diode Feeding Trans.	52
1	W29271A	0.02-0.02 Mfd. 400 V.-400 V.	66-67	2	W25200A	Coil Socket	52
1	W29010A	0.25 Mfd. 200 V.	68	2	W25024A	Coil Shield	52
<b>RESISTORS</b>							
1	W28580	350 Ohms	6	1	W31812	Dial Pointer	62
1	W27503	1400 Ohms	7	1	G2-27817	Dial Light Bracket Assm.	58-59
1	W24537	60 Ohms	8	1	G3-33006	1st I. F. Prim. & Sec. Trimmer Cond.	60-61
1	W30539	26.7 Ohms	9	or	W31204	Vol. Control & Line Switch	16-15
1	21237A	60000 Ohms	10	1	W32300	Tube Shield Base	19
1	21454	1 Megohm	11	1	W31212	Tube Shield (Half)	1
1	26578	5 Megohm	12	1	W31213	Tube Shield (Slotted Half)	1
2	23785	500000 Ohms	13-17	1	W31210	Tube Shield Ring	1
1	23403	150000 Ohms	14	1	B30957B	Resistor Cable & Plug (120 Ohms)	1
1	21455	300000 Ohms	18	1	W31765	Antenna	1
1	W22514	750 Ohms	56	1	G2-28859	Filter Choke	41
1	24900	25000 Ohms	57	<b>FILTER &amp; BY-PASS CONDENSERS</b>			
<b>CABINET AND SPEAKER</b>							
1	4D	Cabinet Assembly		1	W31092	10.-8.-25.-16. Mfd 25 V.-125 V.-125 V.-100 V.	37-38
1	W33139	Dial Plate		1	W30325	0.003 Mfd. 200 V.	39-40
1	W33140	Vol. Control Plate		1	W25516	0.25-0.25 Mfd. 200 V.-200 V.	25
1	W28723	Bull's Eye		1	W27668	0.0001 Mfd.	30-31
1	W29023	Bezel		1	W30322A	0.00017-0.006 Mfd. 200 V.-200 V.	32
1	W33164	Grille Cloth		1			34-35
1	B33167A	Baffle					
1	W33168	Back Cover					
1	W33143	Knob					
1	W33144	Knob					
1	G5-31692	Speaker & Plate Assm.					
1	G1-20629	Cone & Voice Coil					
1	G6-29535	Transformer					
1	W31214	Field Coil					
4	W28742	Speaker Mounting Screws (Chrome)					

# CHASSIS 5H1

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup	Epl	Egl
6F7	R.F.-A.F.	6.5	250	-3.5	0	125	—	35	-3.5
6A7	Osc.-Mod.	6.5	250	-3.5	0	125	—	190	-15.0
6B7	I.F.-Diode	6.5	250	-3.5	0	125	—	—	—
42	Output	6.5	230	-18	0	250	—	—	—
80	Rectifier	5.1	—	—	—	—	—	—	—



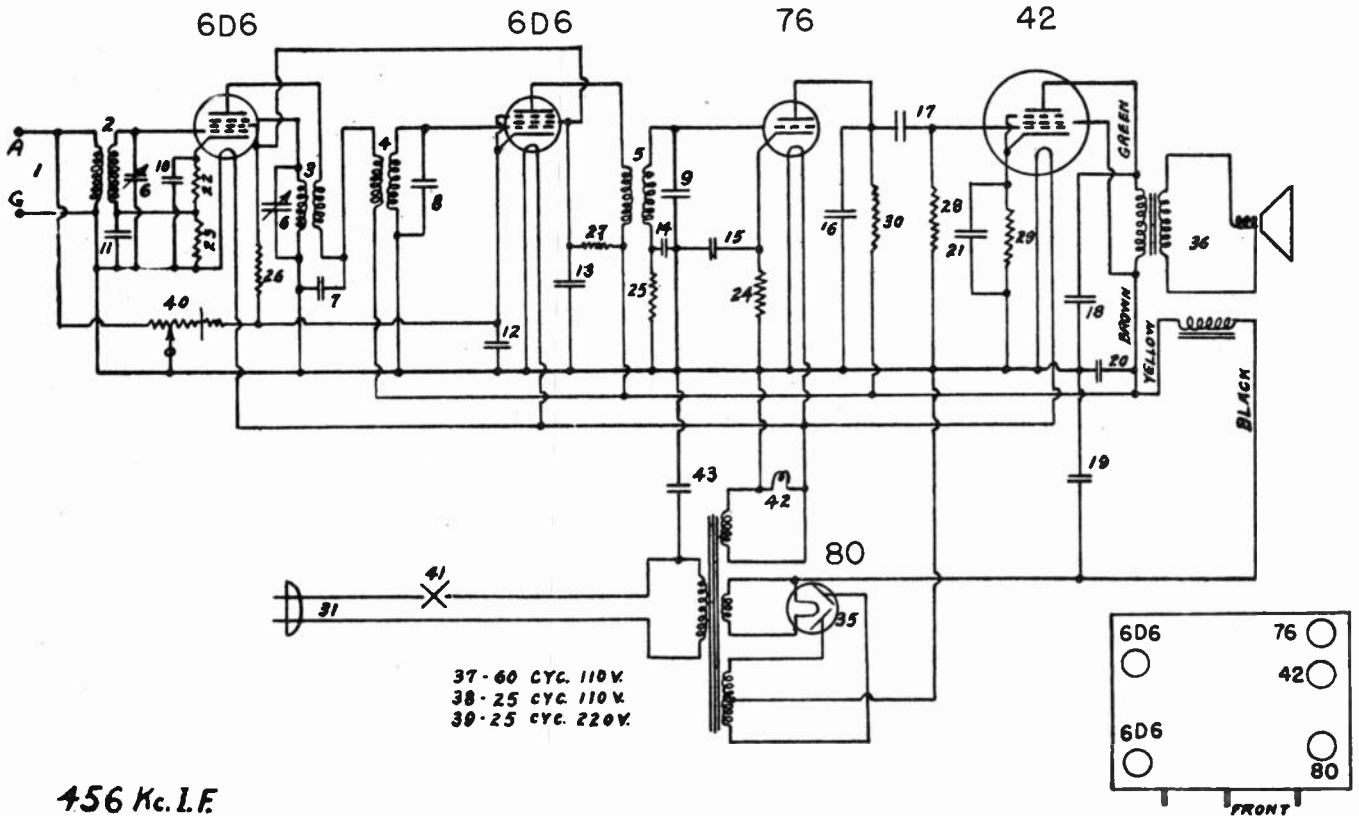
456 Kc. I.F.

67-60~ 110V.  
68-25~ 110V.  
69-25~ 220V.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G3-32000	Antenna Coil (Low Freq.)	1	1	G6-30745	Power Trans. 60 cy. 110 V.	67
1	G1-32002	Antenna Coil (High Freq.)	73	1	G7-30745	Power Trans. 25 cy. 110 V.	68
1	G2-32001	R. F. Coil (L. F.)	3	1	G-830745	Power Trans. 25 cy. 220 V.	69
1	G1-32001	R. F. Coil (H. F.)	4	<b>CONDENSERS</b> 8-8-8. Mfd. 450 V.-450 V.-250 V. .... 37-38 12. Mfd. 475 V. .... 39 1. Mfd. 160 V. .... 40 0.0014 Mfd. 300 V. .... 24 0.05 Mfd. 200 V. .... 25 0.02 Mfd. 200 V. .... 26 0.0005 Mfd. 400 V. .... 27 0.01 Mfd. 400 V. .... 28 0.01 Mfd. 400 V. .... 30 0.001-0.03 Mfd. 400 V.-400 V. .... 31-32 0.008-0.05 Mfd. 400 V.-400 V. .... 33-34 0.25 Mfd. 200 V. .... 36 0.006-0.00017 Mfd. 200 V.-200 V. .... 45-46			
1	G2-32002	Osc. Coil (L. F.)	5				
1	G1-32002	Osc. Coil (H. F.)	6				
1	G9-32004	1st I. F. Trans. and Trimmer Condensers	7-8				
1	G10-32004	2nd I. F. Trans. and Trimmer Condensers	9				
1	G10-33009	L. F. & H. F. Ant. Trimmer Condensers	10-11				
1	G9-33009	L. F. & H. F. R. F. Trimmer Cond.	12				
1	G8-33009	L. F. Osc. Trimmer Cond.	14-15				
1	G2-33007	L. F. & H. F. Osc. Series Trimmer Cond.	16-17				
1	G7-33002	Variable Tuning Condenser (Gang)	18				
1	G20-25050	Dial Assm.	22-23	1	W29097C	8-8-8. Mfd. 450 V.-450 V.-250 V. .... 37-38	
6	W25200	Coil Shield Socket	74	1	W26194B	12. Mfd. 475 V. .... 39	
3	W30802	Coil Shield	1-3	1	W30321A	1. Mfd. 160 V. .... 40	
2	W25025A	Coil Shield	5	1	W32304	0.0014 Mfd. 300 V. .... 24	
1	W25024A	Coil Shield	1-3-5	1	W32380	0.05 Mfd. 200 V. .... 25	
3	W26891	Insulating Washer (L. F. and R. F. & Osc. Coils)	2-4-6	1	W32379	0.02 Mfd. 200 V. .... 26	
3	W21541B	Retaining Ring	43-44	1	W27540	0.0005 Mfd. 400 V. .... 27	
3	W30026	Retaining Ring	70	1	W30805	0.01 Mfd. 400 V. .... 28	
1	G13-27812	Dial Light Bracket Assm.	21	1	W32378	0.01 Mfd. 400 V. .... 30	
1	W25504B	Tone Control & Line Switch	21	1	W2537A	0.001-0.03 Mfd. 400 V.-400 V. .... 31-32	
1	W25666B	Level Control (Volume)	21	1	W25517	0.008-0.05 Mfd. 400 V.-400 V. .... 33-34	
1	B32285	6 Pole D. T. Switch	66	1	W24784	0.25 Mfd. 200 V. .... 36	
1	B30375A	Cord & Plug	75	1	W30322	0.006-0.00017 Mfd. 200 V.-200 V. .... 45-46	
1	G16-26719	Ant.-Gnd. Terminal	75	1	26577	3 Megohm .... 35-48	
3	W26010	Tube Shield Base	—	2	21454	1 Megohm .... 47-49	
3	W27328A	Tube Shield (6F7, 6A7, 6B7)	—	1	W31883	8500-25000 Ohm .... 41-42	
				3	23785	500000 Ohm .... 50-51	
				1	21875	100000 Ohm .... 54	
				1	21876	10000 Ohm .... 53	
				1	21237A	80000 Ohm .... 55	
				1	21433	40000 Ohm .... 56	
				1	23403	40000 Ohm .... 57	
				1	24814	150000 Ohm .... 58	
				1	24980	7000 Ohm .... 58	
				1	W31007A	25000 Ohm .... 71	
				3	W32352	Speaker Cord (4 Wire) .... 72	
				1	W32353	Knob	
				1	W31403	Knob	
				3	S-27	Escutcheon	
						Escutcheon Screws (.10 doz.)	

# CHASSIS 5M3

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup
6D6	Osc-Mod.	6.3	235	29	32	120	0
6D6	I. F.	6.3	235	0	3	120	3
76	Detector	6.3	80	0	10	—	—
42	Output	6.3	225	0	18	235	—
80	Rectifier	4.9	—	—	310	—	—



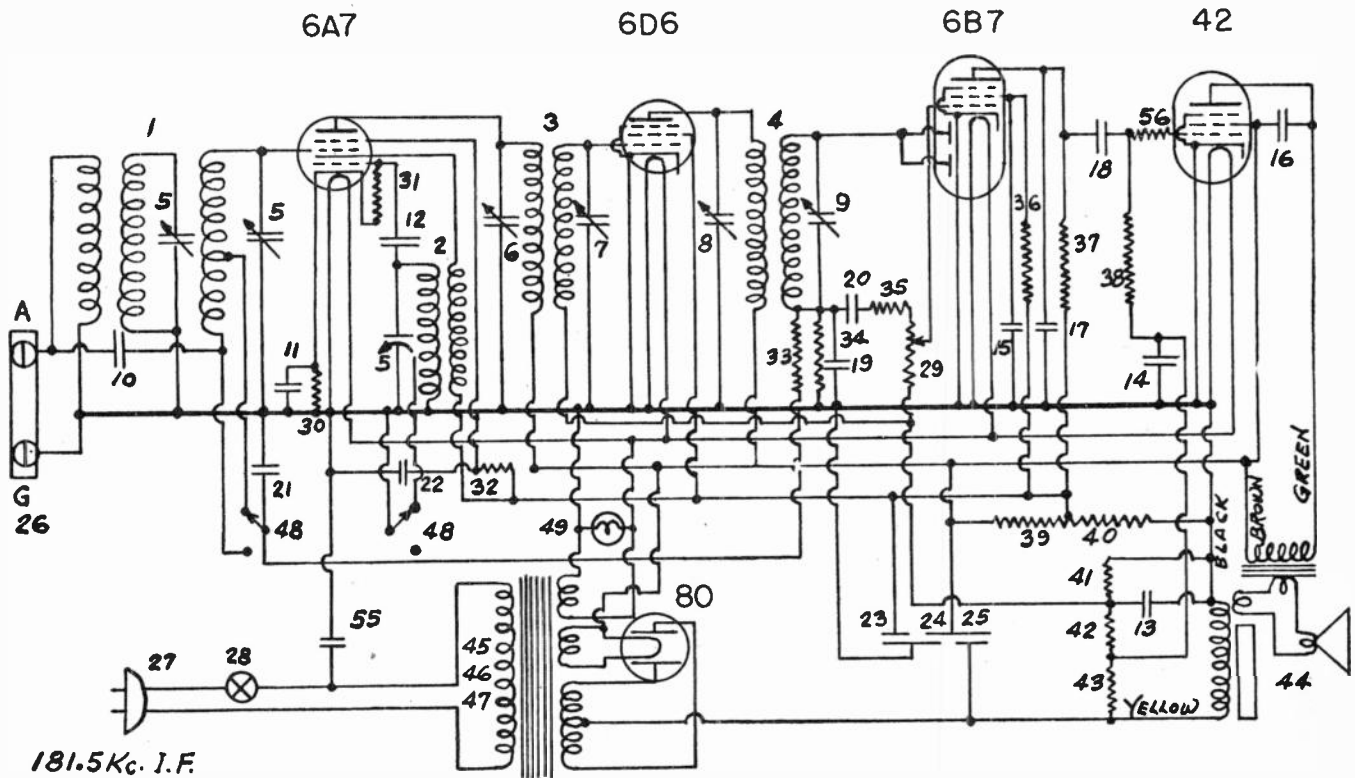
**456 Kc. I.F.**

\* Figures in 2nd last column refer to parts shown in wiring diagram of Model 5M3

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G7-32000	Antenna Coil .....	2	2	W26010	Tube shield Base (6D6) ...	
1	G6-32002	Osc. Coil .....	3	2	B26009C	Tube Shield .....	
1	G3-32004	1st I. F. Trans. Coil .....	4	1	B21401C	Cable & Plug .....	31
1	G4-32004	2nd I. F. Trans. Coil .....	5	1	G5-28500	Power Trans. 60 cy. 110 V.	37
4	W25200	Coil Socket .....		1	G6-28500	Power Trans. 25 cy. 110 V.	38
2	W25024A	Coil Shield .....		1	G7-28500	Power Trans. 25 cy. 220 V.	39
2	W25025A	Coil Shield .....		1	LW-20204	Ant.-Gnd. Terminal .....	1
4	W20891	Insulating Washer .....					
4	W21541B	Retaining Ring .....					
1	G3-33001	Tuning Condenser Gang ...	44				
1	G19-25050	Dial Assem. ....					
1	G12-27812	Dial Light Brkt Assm. ....					
1	G2-25948	1st I. F. Primary Tuning Cond. ....	7	1	W25537A	0.001-0.03 Mfd. 400 V.-400 V.	18-17
1	W27548	1st I. F. Sec. Tuning Cond. ....	8	1	W23191A	0.01 Mfd. 400 V. ....	18
		Adj. Blade .....	8	1	W30805	0.01 Mfd. 400 V. ....	43
1	W25008A	2nd I. F. Sec. Tuning Cond. ....	9	1	W28822	0.1-0.1 Mfd. 200 V.-200 V.	45-46
		Adj. Blade .....	9	2	W28623	0.02-0.02 Mfd. 200 V.-200 V.	47-48
2	W31472	First Blade .....		1	W29150B	8.-6.-12. Mfd. 450 V.-450 V.-25 V. ....	19-20
2	W25554	Mica Insulator .....					21
2	W29069B	Adjusting Nut .....					
2	W25446	Bakelite Washer .....					
2	W24865	Metal Washer .....					
2	W25450B	Insulating Washer .....		1	W25937	275 Ohm .....	22
2	W25007B	Insulating Washer .....		1	31094	4500 Ohm .....	23
2	O-4	Flat Washer .....		1	21237A	60000 Ohm .....	24
2	M-20	Rivet (.120x7/32) Tubular .....		1	21454	1 Megohm .....	25
2	R80	4-36x $\frac{1}{4}$ Rd. Hd. Mach. Screw .....	40-41	1	W27120	25000-8500 Ohm .....	26-27
1	W26573B	Vol. Control & Line Switch		1	23785	500000 Ohm .....	28
				1	W23907	750 Ohm .....	29
				1	21453	300000 Ohm .....	30
				2	W32332	Knob .....	

# CHASSIS 5V1

Type	Where Used	Ef	Ep	Eg	Ek	Esup	Eg-osc	Ep-osc
6A7	Osc-Mod.	6.5	240	0	3	0	-15	125
6D6	I. F.	6.5	240	-3.5	0	0	—	—
6B7	Diode-AF	6.5	30	-3.5	0	—	—	—
42	Output	6.5	230	-18	0	—	—	—
80	Rectifier	5.1	—	—	240	—	—	—



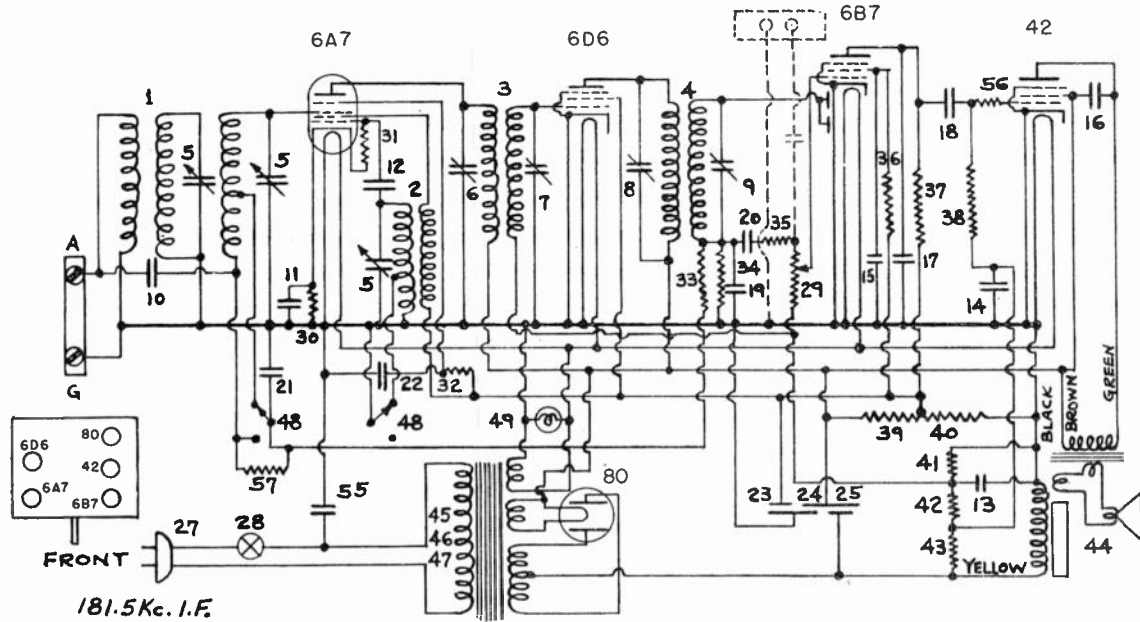
\* Figures in 2nd last column refer to parts shown in wiring diagram of Model 5V1

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G18-32000	Preselector Coil .....	1		G7-30745	Power Transformer 25 cy. 110 V. ....	46
1	G15-32002	Osc. Coil .....	70		G8-30745	Power Transformer 25 cy. 220 V. ....	47
1	G2-32003	1st I. F. Trans. Coil .....	3				
1	G1-32003	2nd I. F. Trans. Coil .....	4				
1	G4-33005	1st I. F. Primary Trimmer Cond. ....	65				
1	W-27548	1st I. F. Sec. Trimmer Cond. Adj. Blade .....	7				
1	W-31472	1st I. F. Sec. Trimmer Cond. Fixed Blade .....					
1	W25584	Mica Insulator .....		1	B30050C	8-8-.8 Mfd. 250 V. 450 V. ....	23-24
1	W20069B	Adjusting Nut .....		2	W30321A	1. Mfd. 160 V. ....	25
1	W25446	Bakelite Washer .....		1	W27668	0.0001 Mfd. ....	14-68
1	W24865	Metal Washer .....		1	W26571	0.0005 Mfd. 400 V. ....	10
1	W25450B	Insulating Washer .....		1	W30323	0.01 Mfd. 200 V. ....	12
1	W25007B	Insulating Washer .....		1	W25537A	0.001-0.03 Mfd. 400 V.-400 V. ....	16
1	O-4	Flat Washer .....		1	W30322A	0.00017-0.006 Mfd. 200 V. 200 V. ....	17-18
1	M-20	Tubular Rivet .120x7/32 ...		1	W30805	0.01 Mfd. 400 V. ....	19-20
1	R-80	4-30x $\frac{1}{2}$ Rd. Hd. Mach. Screw .....		2	W28621	0.02 Mfd. 200 V. ....	55
2	G3-33005	2nd I. F. Prim. & Sec. Trimmer Cond. ....	66-67	1	W29271A	0.02-0.02 Mfd. 400 V. 400 V. ....	63-64
2	G9-33002	Variable Tuning Condenser - Gang .....	57				
1	G7-32086	Dial Drive Assembly .....		1	W25037	275 Ohms .....	30
1	W32441A	Level Control & Line Switch .....	28-29	1	21237A	60000 Ohms .....	31
1	B21491C	Cord & Plug .....	27	1	21876	10000 Ohms .....	32
1	W32442A	D. P. D. T. Switch .....	48	1	28577	3 Megohm .....	33
1	LW20264	Ant.-Gnd. Terminal .....	26	4	23785	500000 Ohms .....	34-36
							38-43
				2	21455	300000 Ohms .....	35-58
				2	21875	100000 Ohms .....	37-42
				1	W31883	8500-25000 Ohms .....	39-40
				1	24990	25000 Ohms .....	41
1	G6-30745	Power Transformer 60 cy. 110 V. ....	45	1	W23013	2000 Ohms .....	69
				3	W32352	Knobs .....	

TUBE VOLTAGES—MODEL 5V2

Type	Where Used	E <sub>f</sub>	E <sub>p</sub>	E <sub>g</sub>	E <sub>sg</sub>	E <sub>k</sub>	E <sub>sup</sub>	E <sub>g-osc</sub>	E <sub>p-osc</sub>
6A7	Osc-Mod.	6.5	240	0	90	3	0	-15	125
6D6	I. F.	6.5	240	-3.5	125	0	0	—	—
6B7	Diode-AF	6.5	30	-3.5	40	0	—	—	—
42	Output	6.5	230	-18	240	0	—	—	—
80	Rectifier	5.1	—	—	—	240	—	—	—

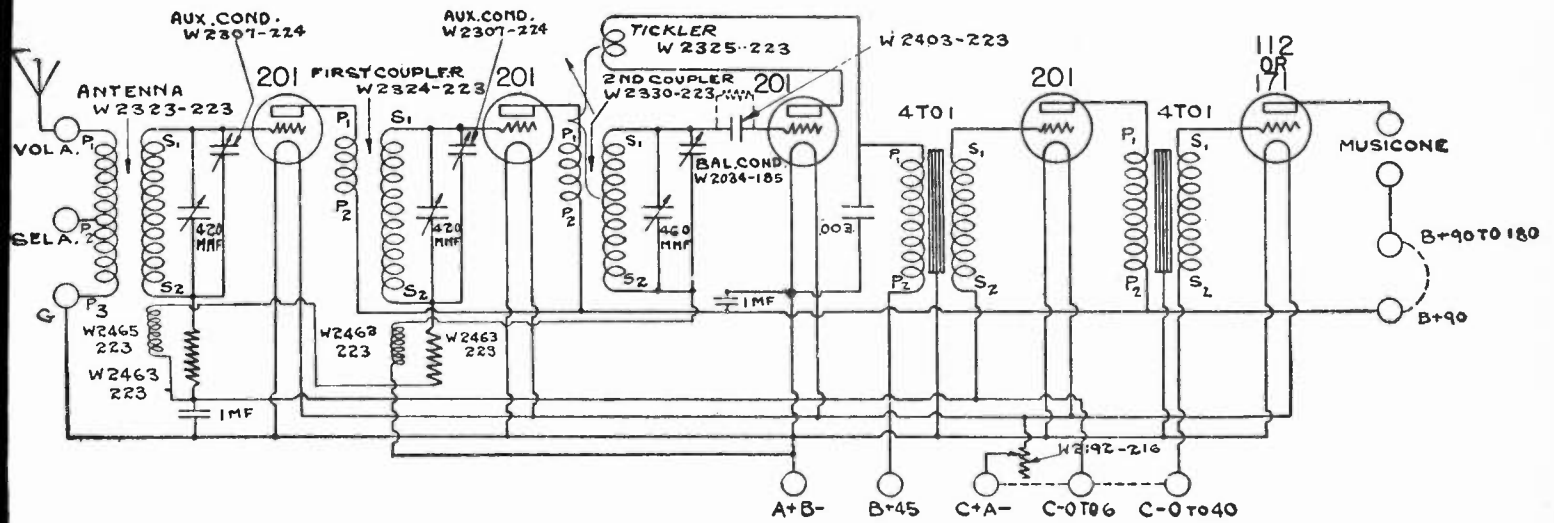
ALL VOLTAGES ARE PLUS OR MINUS 10%. ALL DC VOLTAGES ARE MEASURED TO CHASSIS AT 117.5 LINE WITH 1000 OHMS PER VOLT 250-VOLT VOLTMETER. POWER DEMAND IS 50 WATTS AT 110 VOLTS 60 CYCLES. ALIGNMENT AND SERVICING PROCEDURE SAME AS ON MODEL 5V1.



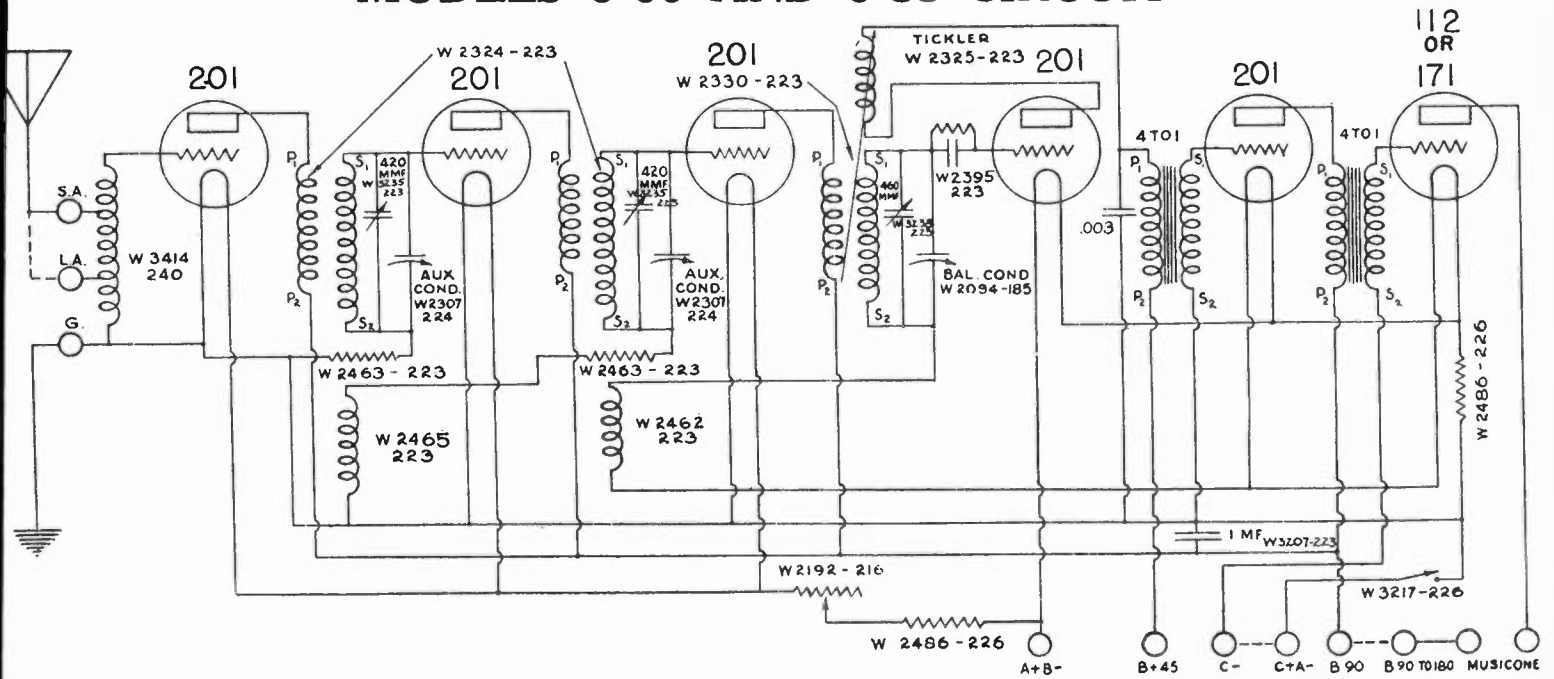
Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G24-32000	Preselector Coil	26	G10-26719	Ant.-Gnd. Terminal
2	G15-32002	Oscillator Coil	27	B-33906A	A. C. Cord and Plug
	W-25025B	Coil Shield 1"	28	W-33556	A. C. Switch
	W-25200	Coil Socket	29	W-25937	Level Control
	W-26891	Insulating Washer	30	W-21237A	275 Ohm Resistor
	W-21451C	Retaining Ring	31	-21876	60,000 Ohm Resistor
3	G2-32003	1st. I. F. Transformer	32	-21876	10,000 Ohm Resistor
	W-25024B	Coil Shield	33	-26577	3 Megohm Resistor
	W-25200	Coil Socket	34	-23785	500,000 Ohm Resistor
	W-26891	Insulating Washer	35	-21455	300,000 Ohm Resistor
	W-21451C	Retaining Ring	36	-23785	500,000 Ohm Resistor
4	G1-32003	2nd. I. F. Transformer	37	-21875	100,000 Ohm Resistor
	W-25024B	Coil Shield	38	-23785	500,000 Ohm Resistor
	W-25200	Coil Socket	39	W-31883	8,500 Ohm Resistor
	W-26891	Insulating Washer	40	W-24990	25,000 Ohm Resistor
	W-21451C	Retaining Ring	41	-21875	25,000 Ohm Resistor
5	G21-33002	Tuning Condenser Gang	42	-21875	100,000 Ohm Resistor
	G21-25050	Dial Assembly	43	-23785	500,000 Ohm Resistor
	G8-32075	Drive Wheel Assembly	44	-418C	Speaker
6	G4-33005	1st. I. F. Primary Trimmer Condenser	45	W-31007A	Speaker Cable
7	W-25008A	1st. I. F. Secondary Trimmer Condenser Adj. Blade only	46	G6-30745	Power Transformer, 110 Volt, 60 Cy.
8	G3-33005	2nd. I. F. Primary Trimmer Cond.	47	G7-30745	Power Transformer, 110 Volt, 25 Cy.
9	G3-33005	2nd. I. F. Secondary Trimmer Cond.	48	G8-30745	Power Transformer, 220 Volt, 25 Cy.
10	W-27658	0.0001 Mfd. Condenser	49	W-33557	D. P. D. T. Switch
11	W-28521	0.02 Mfd. 200 Volt Condenser		G14-27812	Dial Light Bracket Assembly
12	W-26571	0.0005 Mfd. 400 Volt Condenser		W-27981A	Tube Shield Base
13	W-30321A	1.0 Mfd. 160 Volt Condenser		W-28632A	Tube Shield
14	W-30321A	1.0 Mfd. 160 Volt Condenser		W-27981A	Tube Shield Base
15	W-28621	0.02 Mfd. 200 Volt Condenser		B-26009D	Tube Shield
16	W-30323	0.01 Mfd. 200 Volt Condenser		W-27981A	Tube Shield Base
17	W-25537A	0.001 Mfd. 400 Volt Condenser		W-29632A	Tube Shield
18	W-30322A	0.03 Mfd. 400 Volt Condenser		W-30805	0.01 Mfd. 400 Volt Condenser
19	W-29271A	0.00017 Mfd. 200 Volt Condenser	55	W-21455	300,000 Ohm Resistor
20	W-30322A	0.006 Mfd. 200 Volt Condenser	56	W-23013	2,000 Ohm Resistor
21	W-29271A	0.02 Mfd. 400 Volt Condenser	57	W-32352	Knob (Black)
22	B-30059C	8.0 Mfd. 250 Volt (Yellow) Cond.		W-31585B	Knob (Brown)
23	B-30059C	8.0 Mfd. 450 Volt (Red) Condenser		W-31463	Ecutechcon
24	B-30059C	8.0 Mfd. 450 Volt (+-Red, -No Code) Condenser			
25	B-30059C	8.0 Mfd. 450 Volt (+-Red, -No Code) Condenser			

MODELS 550, 575



MODELS 6-60 AND 6-85 CIRCUIT



**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



MODEL 6B1—BATTERY SIX

TUBE VOLTAGES—MODEL 6B1							
Type	Where Used	Ef	Epl	Ep2	Esg	Eg2	Ek
15	R. F. Amp.	1.98	175		80		2.5
6A7	Osc.-Mod.	5.95	175	145	80	6 to 12	4.0
15	I. F. Amp.	1.98	175		80		2.5
30	Det. & A. V. C.	2.0	0				
15	A. F. Amp.	1.98	90		50 V. C. Full		V. C. Full 0
38	Output	5.95	158		175		18

**PEAKING I.F. STAGES AT 456 KC.**

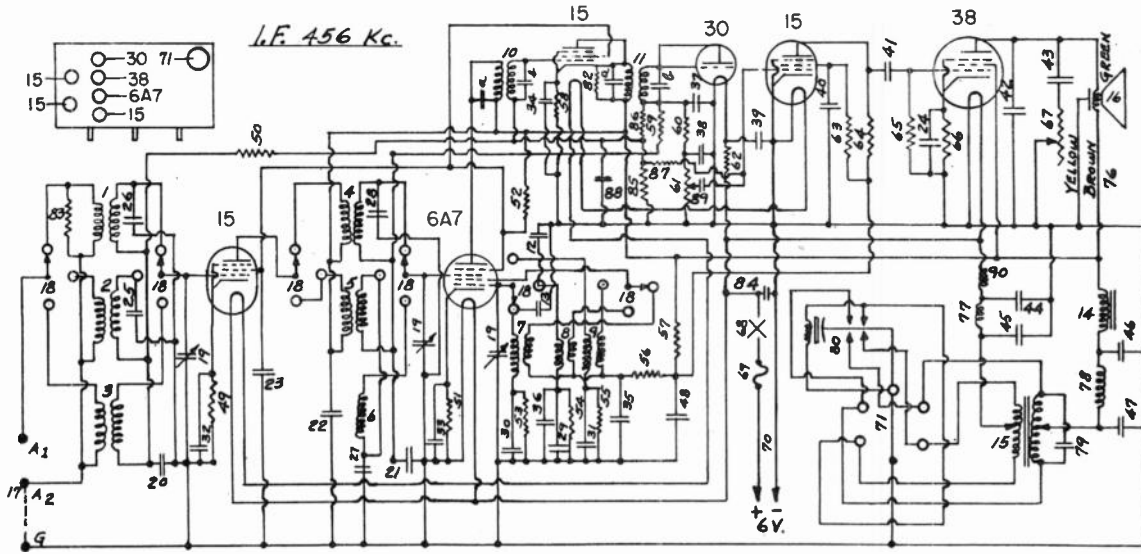
- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator to 456 kilocycles.
- III. Turn the volume control of the receiver on full. Rotate the station selector until the condenser plates are completely meshed and set the band change switch to Band No. 2. Turn the tone control all the way to the left. Be sure the bottom plate of the chassis is securely fastened in place.
- IV. (a) Peak both tuning condensers located on top of the 2nd I.F. transformer shown in Fig. 2.  
NOTE: Be sure to use the lowest test oscillator output that will give a reasonable scale deflection on the output meter. 20-30 volts output should be sufficient for satisfactory alignment.  
(b) Peak both tuning condensers located on top of the 1st I.F. transformer

**PEAKING R.F. CIRCUITS**

- I. Connecting Test Oscillator To The Receiver:  
It is necessary to connect a DUMMY ANTENNA in series with the test oscillator and the antenna terminal of the receiver. On Bands No. 1 and No. 3 this consists of a .0002 mfd. mica condenser. On Band No. 2 it consists of a carbon resistor of approximately 400 ohms.
- II. To Peak Band No. 1:  
NOTE: Be sure to use the lowest test oscillator output that will give a reasonable scale deflection on the output meter. 20-30 volts output should be sufficient for satisfactory alignment.
  - (a) Set the band change switch to Band No. 1.
  - (b) Set the test oscillator to 1400 kilocycles. Rotate the station selector until the dial pointer points to 140 on the dial. Then adjust the oscillator parallel trimmer condenser, Fig. 3, for Band No. 1 for maximum reading on the output meter.
  - (c) With the same dial setting peak the Ant. and R.F. parallel trimmer condensers for Band No. 1.
  - (d) Set the test oscillator to 600 kilocycles.
  - (e) Tune in the 600 kilocycle signal with the station selector, in the region of 60 on the dial, for maximum reading on the output meter.
  - (f) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3, 1/8 turn and re-tune the station selector to the 600 kilocycle signal for maximum reading on the output meter.

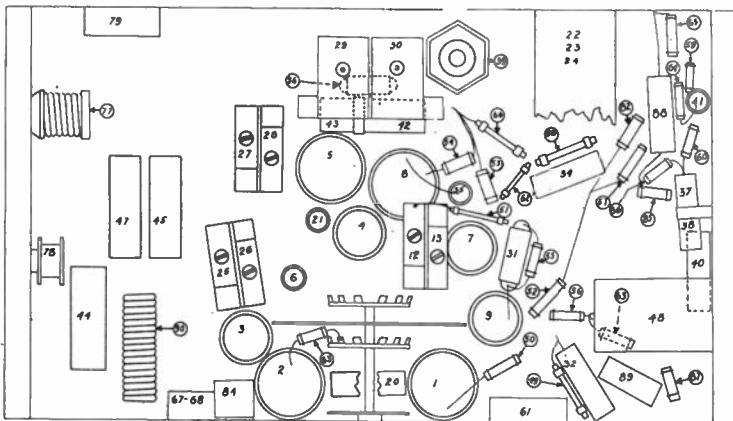
- (g) Repeat operation (f) as many times as necessary to obtain the highest reading on the output meter. However, if the meter reads lower after operation (f) open the oscillator series trimmer condenser 1/8 turn and re-tune the station selector to the 600 kilocycle signal, noting the reading on the output meter as above, and repeat as many times as necessary to obtain the highest meter reading. Do not re-set the parallel trimmer condensers at this frequency.
- III. To Peak Band No. 2:
  - (a) Be sure to change the DUMMY ANTENNA as described in (I) under Peaking R.F. Circuits.
  - (b) Close the oscillator parallel trimmer condenser for Band No. 2 and then open it 2 turns.
  - (c) Close the R.F. parallel trimmer condenser for Band No. 2 and then open it 1/8 turn.
  - (d) Close the Ant. parallel trimmer condenser for Band No. 2 and then open it 1/4 turn.
  - (e) Set the test oscillator to 15 megacycles.
  - (f) Rotate the station selector until the dial pointer points to 15 on the dial (Band No. 2).
  - (g) Peak the oscillator parallel trimmer condenser for Band No. 2 on the first signal heard when closing this condenser.
  - (h) Reduce the output of the test oscillator to the previous output and retune the station selector to the 15 megacycle signal at 15 on the dial.
  - (i) Close the R.F. parallel trimmer condenser for Band No. 2.
  - (j) Open the R.F. parallel trimmer condenser for Band No. 2 not more than 1/8 turn and re-tune the station selector to the 15 megacycle signal for maximum output.
  - (k) Repeat operation (j) as many times as necessary to obtain the highest reading on the output meter on the first peak from the closed position.
  - (l) Close the Ant. parallel trimmer condenser for Band No. 2.
  - (m) Open the Ant. parallel trimmer condenser for Band No. 2 not more than 1/8 turn and re-tune the station selector to the 15 megacycle signal for maximum output.
  - (n) Repeat operation (m) as many times as necessary to obtain the highest reading on the output meter on the first peak from the closed position.
  - (o) Set the test oscillator to 6 megacycles.
  - (p) Tune in the 6 megacycle signal with the station selector in the region of 6 on the dial (Band No. 2) for maximum reading on the output meter.
  - (q) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3, 1/8 turn and re-tune the station selector to the 6 megacycle signal for maximum reading on the output meter.

MODEL 6B1



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G20-3200	Low Freq. Ant. Coil	44	W-33299	0.5 Mfd. 160 Volt Condenser
2	G5-31267	Coil Shield Assem.	45	W-33299	0.5 Mfd. 160 Volt Condenser
	W-30726A	Retaining Ring	46	W-34896	8. Mfd. 300 Volt Condenser
	G20-32000	High Freq. Ant. Coil	47	W-33301	8. Mfd. 250 Volt Condenser
	C4-31267	Coil Shield Assem.	48	W-34899	450 Ohm Flex. Resistor
	W-30026A	Retaining Ring	49	W-37127	500,000 Ohm Resistor
3	G31-32000	Police Band Ant. Coil	50	W-23785	350 Ohm Flex. Resistor
	C6-31267	Coil Shield Assem.	51	W-23616	15,000 Ohm Resistor
	W-26891	Insulating Washer	52	W-21237A	60,000 Ohm Resistor
	W-21541C	Retaining Ring	53	W-21453	40,000 Ohm Resistor
	L2-32001	L. F. R. F. Coil	54	W-33380	30,000 Ohm Resistor
	W-25024B	Coil Shield	55	W-31094	4,500 Ohm Resistor
	W-25200	Coil Socket	56	W-31094	4,500 Ohm Resistor
	W-26891	Insulating Washer	57	W-29585	600 Ohm Flex. Resistor
	W-21541C	Retaining Ring	58	W-26577	3 Megohm Resistor
	G10-32001	H. F. R. F. Coil	59	W-21455	300,000 Ohm Resistor
	W-30802A	Coil Shield	60	W-32062	Level Control
	W-25200	Coil Socket	61	W-24537	60 Ohm Flex. Resistor
	W-30026A	Retaining Ring	62	W-21458	1 Megohm Resistor
6	G19-32001	Pol. Band R. F. Sec. Coil (on No. 18 Switch)	63	W-23403	150,000 Ohm Resistor
	C2-32002	L. F. Osc. Coil	64	W-21454	1 Megohm Resistor
	C6-31267	Coil Shield Assem.	65	W-21452	1,100 Ohm Flex. Resistor
	W-26891	Insulating Washer	66	W-32063	Tone Control
	W-21541C	Retaining Ring	67	W-7963A	S. P. S. T. Line Switch
	G1-32002	H. F. Osc. Coil	68	W-33339	3 Amp. Fuse
	W-30802A	Coil Shield	69	W-3310A	Fuse Panel Assem.
	W-25200	Coil Socket	70	W-4072	Thumb Screw
	W-30026A	Retaining Ring	71	W-33114	Battery Cable
	G24-32002	Pol. Band Osc. Coil		W-3313B	Synchrone Socket
	C8-31267	Coil Shield Assem.		See 80	Rubber Cushion
	W-26891	Insulating Washer		W-3312	Rubber Sleeve
	W-21541C	Retaining Ring		W-33349A	Synchrone Cover
	G11-32000	1st I. F. Trans. Assem.		W-27981A	Tube Shield Base
	G12-32004	2nd I. F. Trans. Assem.		W-28632A	Tube Shield
	G14-33009	H. F. Osc. Trimmer		W-27981A	Tube Shield Base
	G12-28059	L. F. Osc. Trimmer		W-28632A	Tube Shield
	G3-31618	L. F. Choke		W-35111	Speaker Cable, 3 wire
	W-33582A	Power Transformer	76	W-28677	Synchrone "A" Choke
	W-42971	Transformer Spring	77	G1-2424	Synchrone R. F. "B" Choke
	G24-26719	Ant. Grid Terminal	78	W-32762	0.008 Mfd. 1,000 Volt Condenser
	B-34443B	6 P. 3 T. Switch	79	W-3317C	Synchrone Covers
	W-3102C	Shield (metal)	80	W-33345	Synchrone (8 S44)
	C-33075B	Tuning Condenser Gang	81	See 84	
	G25-32090	Dial Assembly	82	W-23785	500,000 Ohm Resistor
	W-34657A	Dial Band only	83	W-31094	4,500 Ohm Resistor
	W-34655B	Dial Pointer only	84	W-34005	0.002 Mfd. Condenser
	W-34603	Dial Cap Nut	85	W-26577	3 Megohm Resistor
	W-32379	0.02 Mfd. 200 Volt Condenser	86	W-26678	3 Megohm Resistor
	W-32379	0.02 Mfd. 200 Volt Condenser	87	W-26577	3 Megohm Resistor
	W-34896	12. Mfd. 250 Volt Condenser	88	W-28621	0.02 Mfd. 200 Volt Condenser
		8. Mfd. 250 Volt Condenser	89	W-28621	0.02 Mfd. 200 Volt Condenser
		8. Mfd. 25 Volt Condenser	90	C2-32977	H. F. Choke
				W-3347A	Bottom
				W-35060	Band Change Plate
				W-31585B	Knob-Plain
				W-3396A	Knob-Vernier
				W-760	Knob Set Screw
				W-33994A	Knob-Tuning
				W-7908	Knob-Set Screw
				W-34678B	Knob-Band Change
				W-33708	Eucytechon and Lens
				W-34307	Lens only

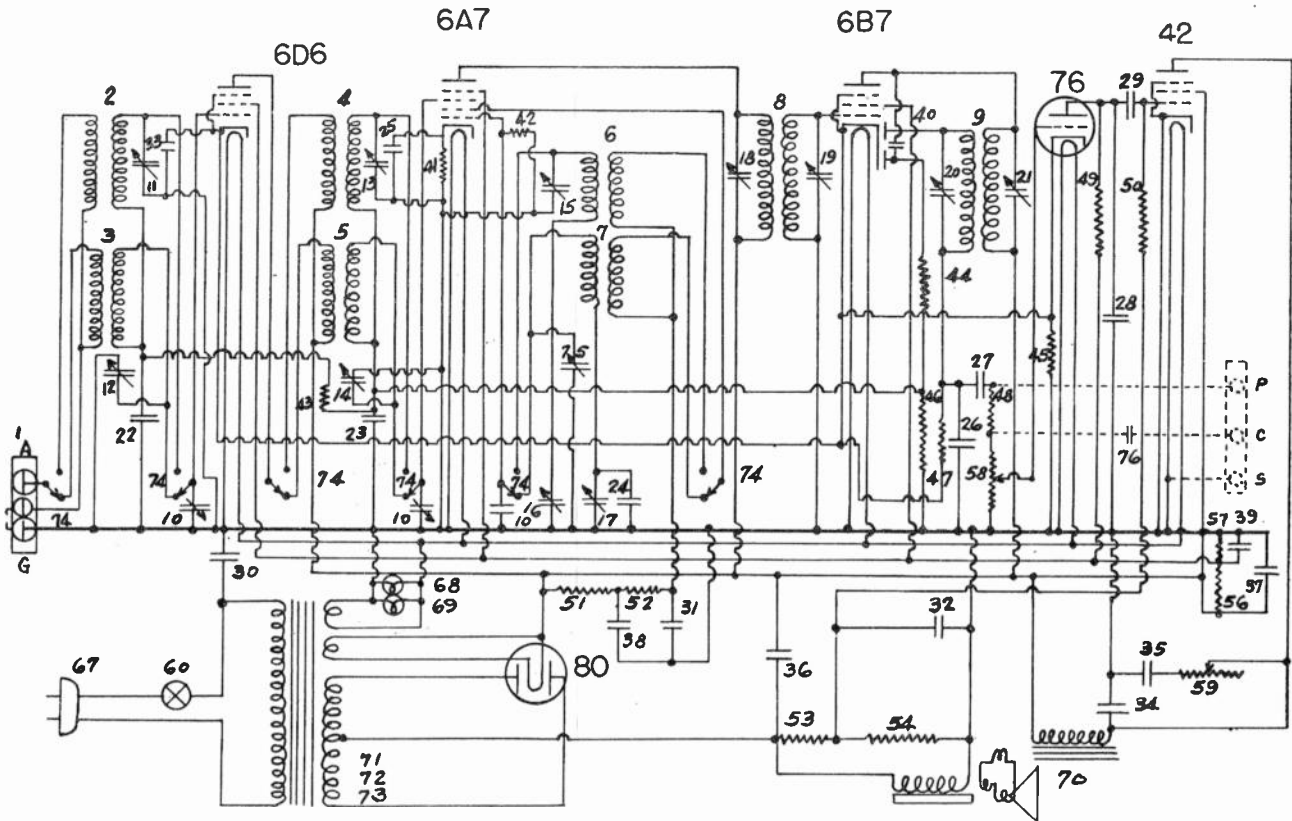


- Ant. Parallel Trimmer Condenser, Band No. 1—Item No. 26.
- Ant. Parallel Trimmer Condenser, Band No. 2—Item No. 25.
- R.F. Parallel Trimmer Condenser, Band No. 1—Item No. 28.
- R.F. Parallel Trimmer Condenser, Band No. 2—Item No. 27.
- Osc. Parallel Trimmer Condenser, Band No. 1—Item No. 13.
- Osc. Parallel Trimmer Condenser, Band No. 2—Item No. 12.
- Osc. Series Trimmer Condenser, Band No. 1—Item No. 30.
- Osc. Series Trimmer Condenser, Band No. 2—Item No. 29.

FIG. 3 -

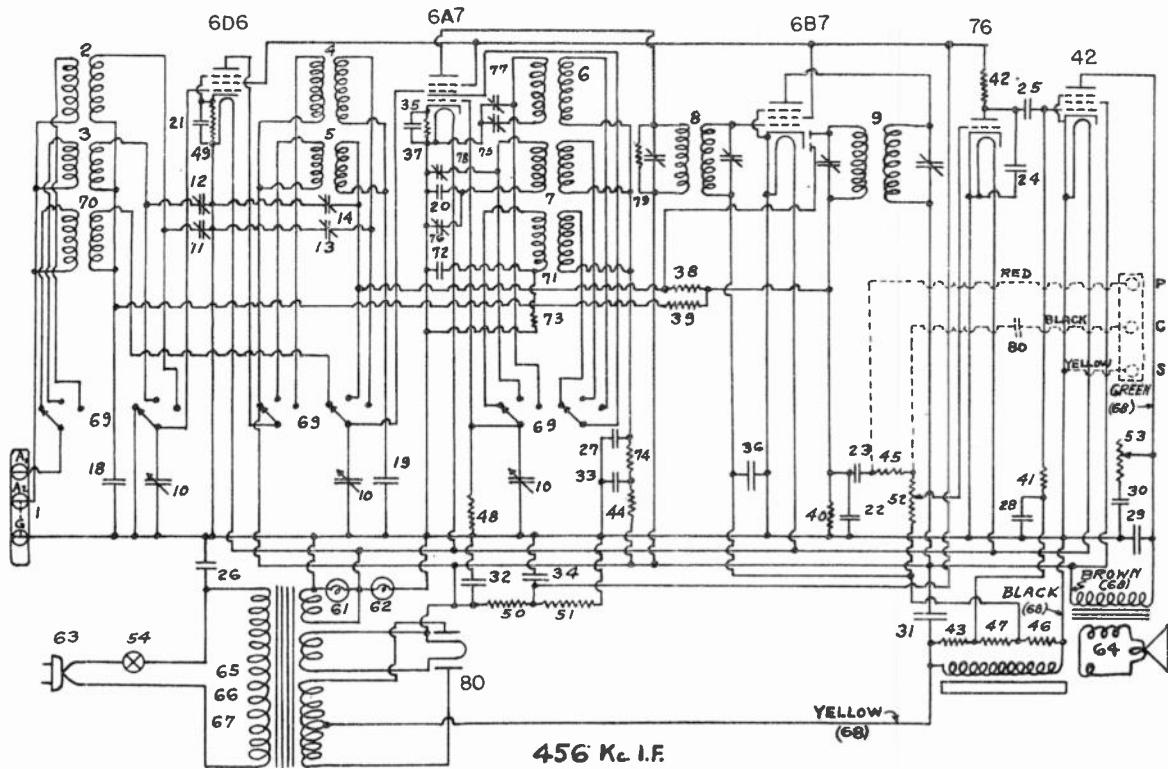
# CHASSIS 6H2

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup	Epl	Egl
6D6	R.F.	6.5	250	0	-3.0	125	—	—	—
6A7	Osc.-Mod.	6.5	250	0	-4.0	125	—	150	-15.0
6B7	I.F.-Diode	6.5	250	0	-3.0	125	—	—	—
76	A.F.	6.5	35	0	-3.0	—	—	—	—
42	Output	6.5	230	-18	0	250	—	—	—
80	Rectifier	5.1							



Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	B30375A	Cable & Plug	67	1	G3-32000	Antenna Coil (Low Freq.)	2
1	W28552	Level Control (Volume) (1 Megohm)	58	1	G1-32002	Antenna Coil (High Freq.)	3
2	G4-27134	Dial Light Brkt Assm.		1	G2-32001	R. F. Trans. Coil (L. F.)	4
1	W25594B	Tone Control (80000 Ohm) & Line Switch	59-60	1	G1-32001	R. F. Trans. Coil (H. F.)	5
1	G16-26719	Ant.-Gnd. Terminal	1	1	G2-32002	Oscillator Coil (L. F.)	6
<b>FILTER &amp; BY-PASS CONDENSERS</b>				1	G1-32002	Osc. Coil (H. F.)	7
1	W29097C	8.-8.-8. Mfd. 450 V.-450 V.-250 V.	37-38	1	G9-32004	1st I. F. Trans. (With Trimmers)	8-18
1	W26194B	12. Mfd. 475 V.	39	1	G10-32004	2nd I. F. Trans. (With Trimmers)	19
1	W30321	1. Mfd. 160 V.	36	1	W25200	Coil Shield Socket	9-20
3	W32379	0.02 Mfd. 200 V.	32	3	W30802	Coil Shield	21
1	W32304	0.0014 Mfd.	25	2	W25025A	Coil Shield	
1	W30322A	0.00017-0.006 Mfd. 200 V.-200 V.	24	1	W25025A	Coil Shield	
1	W25537A	0.001-0.03 Mfd. 400 V.-400 V.	28-27	3	W26891	Insulating Washer L. F. Ant.-R. F. and Osc. ...	2-4-6
1	W30805	0.01 Mfd. 400 V.	30	3	W21541B	Retaining Ring	2-4-6
1	W32378	0.01 Mfd. 400 V.	31	2	W30026	Retaining Ring	3-5-7
1	W24784	0.25 Mfd. 200 V.	33	1	G1-33008	L. F. & H. F. Antenna Trimmer Cond.	11-12
1	W25517	0.008-0.05 Mfd. 400 V.-400 V.	34-35	1	G1-33008	L. F. & H. F. R. F. Trimmer Cond.	13-14
1	W27540	0.0005 Mfd. 400 V.	40	1	G15-33009	L. F. & H. F. Osc. Trimmer Condenser	15-75
<b>RESISTORS</b>				1	G2-33007	L. F. & H. F. Osc. Series Trimmer Cond.	16-17
1	W28580	350 Ohms (Flexible)	41	1	G19-33002	Variable Tuning Condenser Gang	10
1	21453	40000 Ohms	42	1	G5-32086	Dial Drive Assm.	
4	23785	500000 Ohms	43-48	1	W32208A	Dial Hand	
2	26577	3 Megohms	44-46	2	W32283	Dial Hand Nut	
1	W27504	100 Ohms (Flexible)	45	3	W20010	Tube Shield Base	
1	21454	1 Megohm	47	2	W27328A	Tube Shield (6A7, 6B7)	
1	23403	150000 Ohms	49	1	B26009C	Tube Shield (6D6)	
1	21876	10000 Ohms	51	1	G6-30745	Power Transformer 60 cy. 110 V.	71
1	24814	7000 Ohms	52	1	G7-30745	Power Transformer 25 cy. 110 V.	72
1	33474	120000 Ohms	54	1	G8-30745	Power Transformer 25 cy. 220 V.	73
1	W31883	8500-25000 Ohms	56-57	1	B32285	Band Change Switch	74
3	W32352	Knob					
1	W32353	Knob					
1	W31007A	Speaker Cord (4 Lead)					
1	W32210A	Dial Glass					
1	W32220A	Dial Glass Retainer					
1	B32190C	Escutcheon					
1	W33106A	Escutcheon Gasket					
4	D28	Escutcheon Screws (.10 dia)					

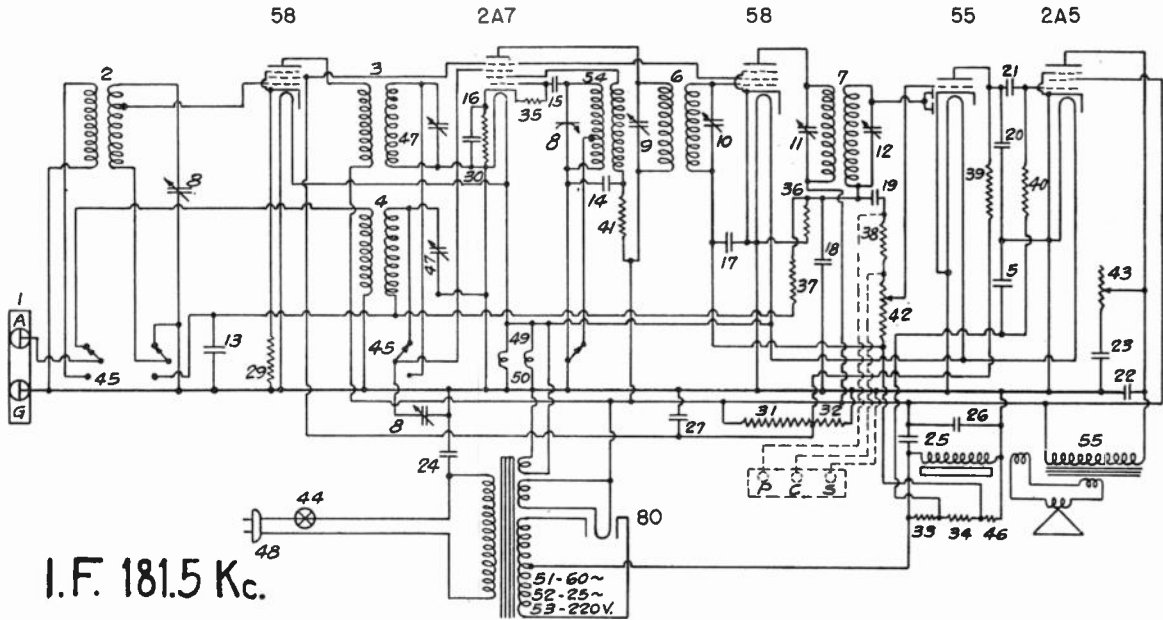
# Model 6H3



Figures in first column correspond to figures in diagram

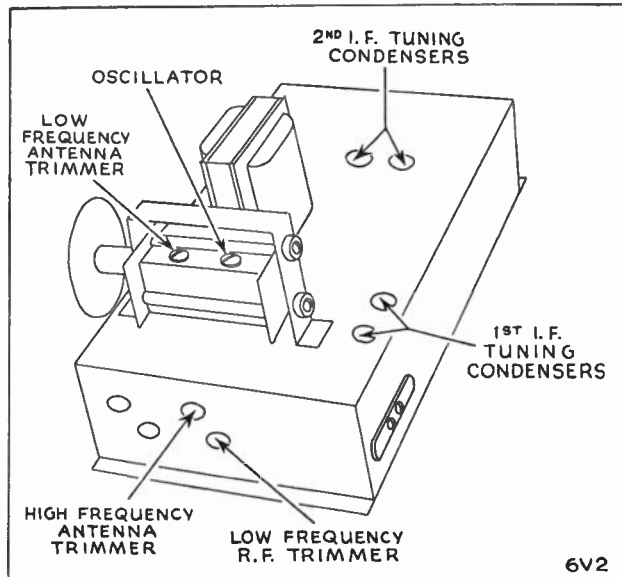
1	G16 —26719	Ant. Gnd. Term.	43	23785	500,000 Ohms
2	G3 —32000	L. F. Ant. Coil	44	21876	10,000 Ohms
3	G1 —32002	H. F. Ant. Coil	45	23785	500,000 Ohms
4	G2 —32001	L. F. R. F. Coil	46	22831	15,000 Ohms
5	G1 —32001	H. F. R. F. Coil	47	21875	100,000 Ohms
6	G2 —32002	L. F. Osc. Coil	48	21453	40,000 Ohms
7	G1 —32002	H. F. Osc. Coil	49	W —21964	165 Ohms
8	G18 —32004	1st I. F. Trans.	50	W —31883	{ 8,500 Ohms
9	G19 —32004	Diode Trans.	51	W —28552	{ 25,000 Ohms
19	G19 —33002	Variable Cond.	52	W —28552	Level Control
11	G1 —33008	{L. F. Ant. Trimmer	53	W —25594-B	{Tone Control
12		{H. F. Ant. Trimmer	54		{S. P. S. T. Line Switch
13		{L. F. R. F. Trimmer	55		
14	G1 —33008	{H. F. R. F. Trimmer	56		
15			57		
16			58		
17			59		
18	W —32379	0.02 Mfd. 200 Volt	60		
19	W —32379	0.02 Mfd. 200 Volt	61	W —4099-A	6 V. Dial Light
20	W —32304	1400 Mmfd. H. F.	62	W —4099-A	6 V. Dial Light
21	W —32379	0.02 Mfd. 200 Volt	63	B —33905	Cable & Plug
22	W —30322-A	{.00017 Mfd. 200 Volt	64	318-B	Speaker
23		{.006 Mfd. 200 Volt	65	G6 —30745	Power Trans. 60 Cy.
24	W —25537-A	{.001 Mfd. 400 Volt	66	G7 —30745	Power Trans. 25 Cy.
25		{.03 Mfd. 400 Volt			110 Volt
26	W —30805	0.01 Mfd. 400 Volt	67	G8 —30745	Power Trans. 25 Cy.
27	W —32378	0.01 Mfd. 400 Volt			220 Volt
28	W —30321-A	1.0 Mfd. 160 Volt	68	W —31007-A	Speaker Cord
29	W —25517-A	{.008 Mfd. 400 Volt	69	B —34427-A	Band Change Switch
30		{.05 Mfd. 400 Volt	70	G31 —32000	3rd Ant. Coil
31	W —26194-B	12 Mfd. 475 Volt	71	G24 —32002	3rd Osc. Coil
32		{8 Mfd. 450 Volt (Red)	72	G7 —34000	1450 Mmfd.
33	W —29097-D	{8 Mfd. 450 Volt (Green)	73	W —24990	25,000 Ohms
34		{8 Mfd. .250 V. (No Code)	74	22831	15,000 Ohms
35	W —32379	0.02 Mfd. 200 Volt	75	G2 —33007	{L. F. Osc. Series Cord
36	W —29910-A	0.25 Mfd. 200 Volt	76		{H. F. Osc. Series Cord
37	W —28589	350 Ohms	77	G9 —33009	{L. F. Osc. Trimmer
38	26577	3-Megohm	78		{H. F. Osc. Trimmer
39	26577	3-Megohm	79	23785	500,000 Ohms
40	21454	1-Megohm	80	W —23191-A	.01 Mfd. 400 V. (For. Only)
41	23785	500,000 Ohms			
42	23403	150,000 Ohms			

MODEL 6V2



I.F. 181.5 Kc.

Item No.	Description	Item No.	Description
1 G1-26719	Ant.-Gnd. Terminal	30 W-25937	275 Ohms
2 G30-24995	Antenna Coil (L.F.)	31	W-31883 { 3500 Ohms 25,000 Ohms
3 G10-25968	R.F. Coil (L.F.)	32	
4 G31-24995	Antenna Coil (H.F.)	33 23785	500,000 Ohms
5 W-30321	1.0 Mfd. 160 V.	34 21875	100,000 Ohms
6 G4-30795	1st I.F. Transformer	35 21237-A	60,000 Ohms
7 G6-25444	Diode Feedin'g Trans.	36 23785	500,000 Ohms
8 B-31877	Variable Condenser	37 26577	3 Meg. Ohms
9	G14-25948 { 1st I.F. Pri. Trimmer 1st I.F. Sec. Trimmer	38 23785	500,000 Ohms
10		39 23403	150,000 Ohms
11	G3-25948 { 2nd I. F. Pri. Trimmer 2nd I.F. Sec. Trimmer	40 23785	500,000 Ohms
12		41 21878	10,000 Ohms
13	W-30324 { 0.02 Mfd. 400 V. 0.02 Mfd. 400 V.	42 W-30610-D	Level Control
14		43	W-30836 { Tone Control S. P. S. T. Switch
15 W-26571	0.0005 Mfd. 400 V.	44	
16 W-27203	0.02 Mfd. 200 V.	45 B-31878	4 P. D. T. Switch
17 W-24784	0.05 Mfd. 200 V.	46 22199-A	25,000 Ohms
18	W-30322A { 0.00017 Mfd. 200 V. 0.006 Mfd. 200 V.	47 C7-29699	R.F. Trimmer Cond.
19		48 B-30375-A	Cord & Plug
20	W-22537A { 0.001 Mfd. 400 V. 0.03 Mfd. 600 V.	49 W-22221	2.5 V. Dial Light
21		50 W-22221	2.5 V. Dial Light
22	W-31052 { 0.004 Mfd. 400 V. 0.05 Mfd. 400 V.	51 G4-30745	60 Cy. Power Trans.
23		52 G2-30745	25 Cy. Power Trans.
24 W-30805	0.01 Mfd. 400 V.	53 G3-30745	220 V. Power Trans.
25	B-30059-B { 8 Mfd. 450 V. 8 Mfd. 250 V.	54 G33-24996	Oscillator Coil
26		55 354-4	Speaker
27			
28			
29 W-25937	275 Ohms		



# Model 7

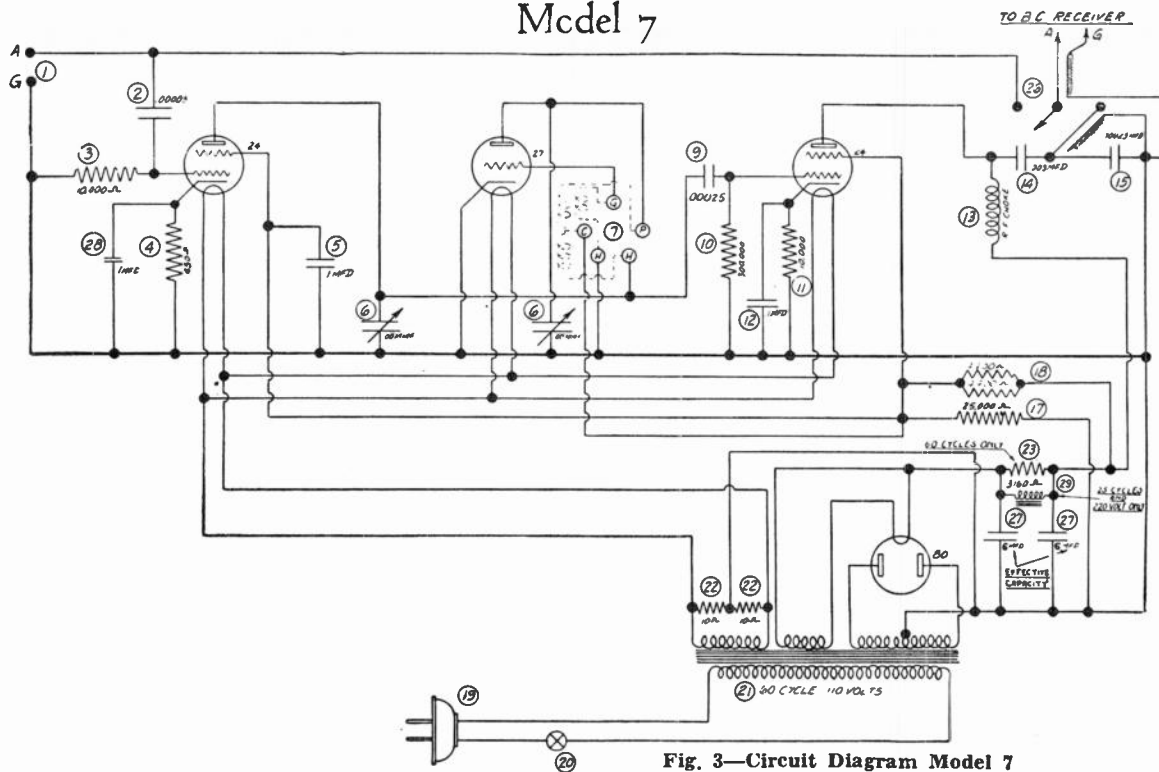


Fig. 3—Circuit Diagram Model 7

This is a chassis for attaching to any broadcast receiver in order to adapt the latter to the reception of short-wave signals. It is of the superheterodyne type, the incoming signal being converted to a frequency within the regular broadcast range by the use of an oscillator and detector (see Service Bulletin No. A-1 for an explanation of the superheterodyne receiver). After conversion to the appropriate frequency,

the signal is delivered to the aerial and ground terminals of the broadcast receiver.

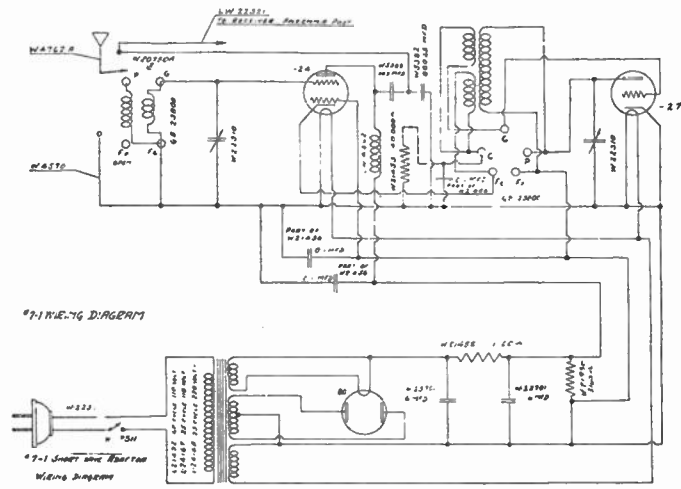
The chassis incorporates a -24 type, untuned buffer amplifier, a -27 tuned oscillator, a -24 tuned detector, and a -80 rectifier. Various frequency ranges are obtainable by the use of suitable oscillator coils, as explained in the instructions accompanying the chassis.

### Voltage Limits, Model 7

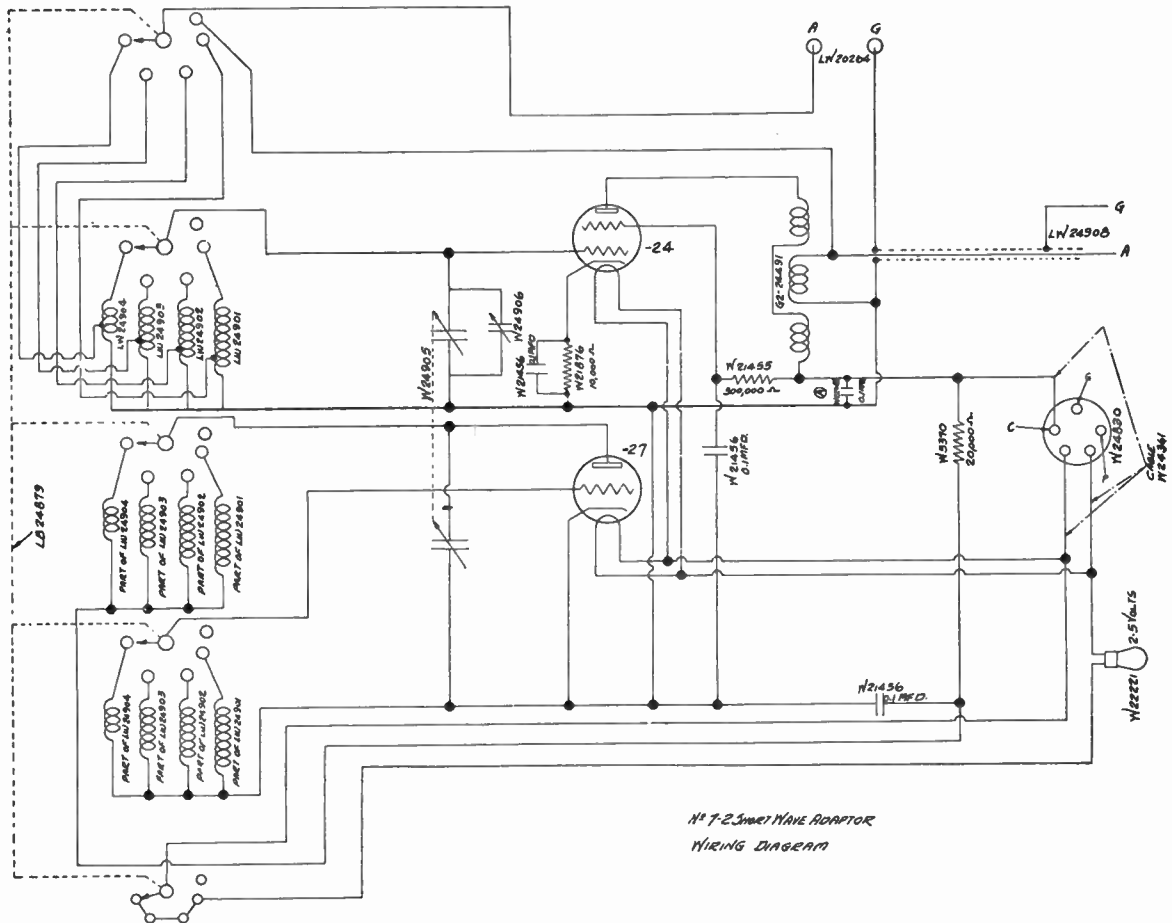
The following tube voltages are the approximate values which should be obtained with tubes in place and receiver connected to a 117½ volt line, using a voltmeter of about 1000 ohms resistance per volt.

<b>Filament Voltages</b>	
Buffer, Oscillator, and Detector Tubes	2.2 to 2.6
Rectifier tube .....	4.3 to 4.9
<b>Plate Voltages</b>	
Buffer Tube .....	160 to 190
Oscillator tube .....	155 to 185
Detector Tube .....	140 to 160
<b>Grid Voltages</b>	
Buffer Tube .....	2 to 4
Oscillator Tube .....	9 to 13
Detector tube .....	6 to 10
<b>Screen Grid Voltages</b>	
Buffer and Detector tubes .....	55 to 75

# Models 7-1 and 7-2



Circuit Diagram, Model 7-1

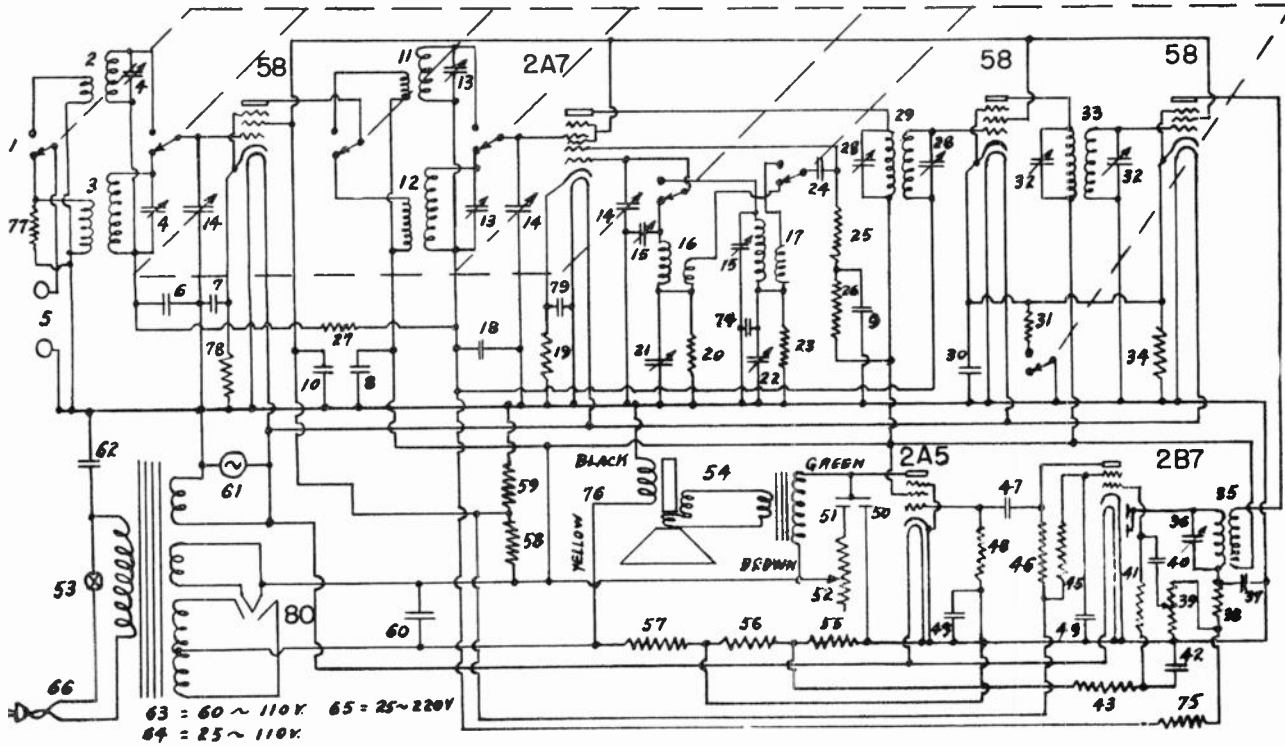


Circuit Diagram, Model 7-2

# CHASSIS 7H2

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Ep-osc.
58	RF	2.5	225	0	3	100	
2A7	Osc. Mod.	2.5	225	0	3	100	150
58	1st IF	2.5	225	0	4.5	100	
58	2nd IF	2.5	225	0	4.5	100	
2B7	Diode AF	2.5	50	0.5	0	22	
2A5	Output	2.5	215	2.0	0	225	
80	Rectifier	4.9	—	—	225	—	

Voltage Across Speaker Field, — 120.

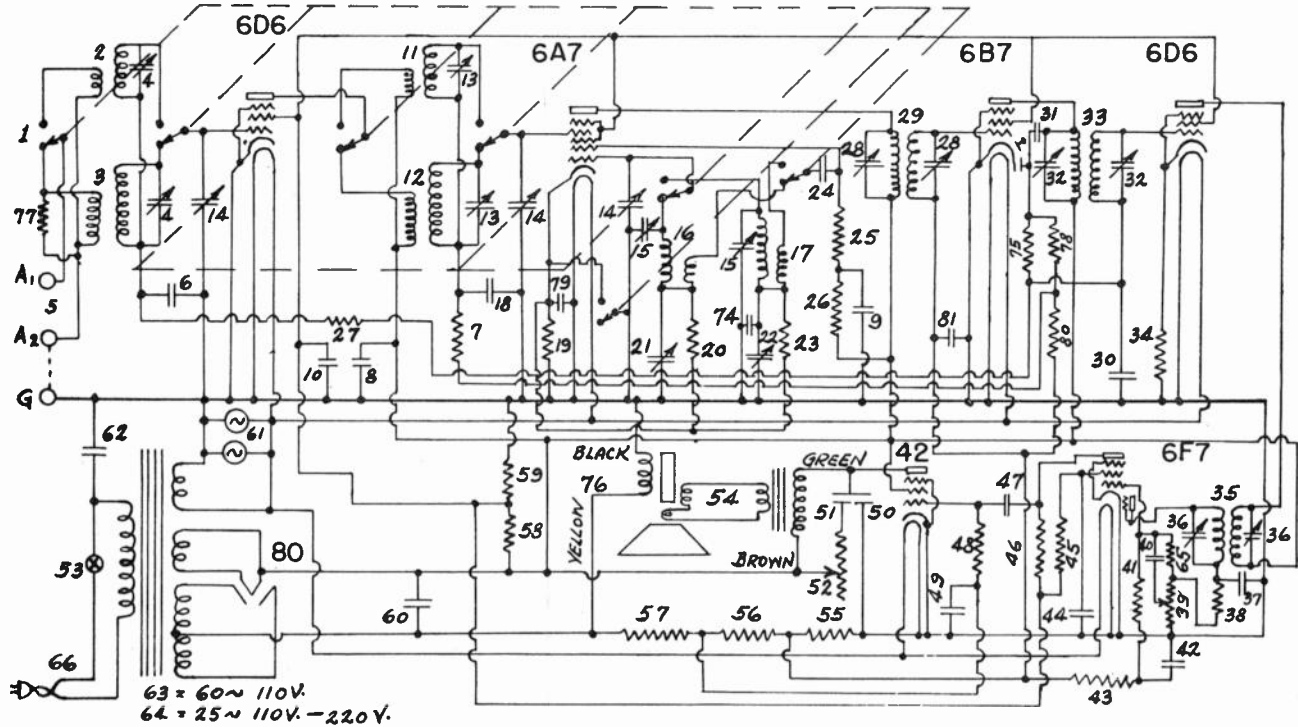


Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G1-32002	Antenna Coll. (H. F.)	81	3	B26009	Tube Shield (58 Tube)	.....
1	G3-32000	Antenna Coll. (L. F.)	3	2	W26632	Tube Shield (2A7-2B7)	.....
1	G1-32001	R. F. Coll. (H. F.)	11	1	B21491A	Cord & Plug	66
1	G2-32001	R. F. Coll. (L. F.)	12	<b>FILTER &amp; BY-PASS</b>			
1	G2-32002	Osc. Coll. (L. F.)	16	<b>CONDENSERS</b>			
1	G1-32002	Osc. Coll. (H. F.)	17	1	W26194B	12. Mfd. 475 V. Condenser	60
1	G1-32004	1st I. F. Trans.	29	1	W29097C	8.-8.-8. Mfd. 450 V.-450 V.-	8-9
1	G1-32004	2nd I. F. Trans.	33			250 V. Condenser	10
1	G2-32004	3rd I. F. Trans. (Diode)	35	1	W32380	0.05 Mfd. 200 V. Condenser	18
1	W31386	Coll. Shield Bracket	.....	1	W25435	0.003 Mfd. 400 V.	24
6	W25200	Coll. Shield	.....	3	W24049	0.1 Mfd. 200 V.	30-42
3	W30802	Coll. Shield	.....	1	W27932	0.0001 Mfd. 200 V.	44
2	W25025A	Coll. Shield	.....	1	W27216	0.05 Mfd. 200 V.	37
1	W25024A	Coll. Shield	.....	1	W30321	1.0 Mfd. 160 V.	47
3	G1-24004	Coll. Shield	29-33	1	W31052	0.004-0.05 Mfd. 400 V.-400 V.	40
			35	1	W30805	0.01 Mfd. 400 V.	60-51
6	W26691	Insulating Washer	.....	1	W32304	0.0014 Mfd.	62
3	W21541B	Retaining Ring	3-12	1	W26621	0.02 Mfd. 200 V.	74
			16	1	W28619	0.006 Mfd. 200 V.	83-85
3	W30026	Retaining Ring	81-11	1	W32379	0.02 Mfd. 200 V.	84
			17				6
1	G1-33008	Ant. Tuning Condenser	86	<b>RESISTORS</b>			
1	G1-33008	R. F. Tuning Condenser	87	2	W25937	275 Ohm	19-78
1	G2-33009	Osc. Tuning Condenser	80	1	W21237A	60000 Ohm	20
1	G7-33006	I. F. Condenser	88-89	1	W21453	40000 Ohm	23
2	G6-33006	1st & 2nd I. F. Condensers	90-91	1	W21876	10000 Ohm	25-26
1	G2-33006	3rd I. F. Condenser	92	2	W21455	300000 Ohm	27
1	G13-33002	Variable Tuning Condenser	82	2	W22514	750 Ohm	31-34
				2	W23403	150000 Ohm	38-56
1	G1-32086	Dial Drive Assm.	.....	1	W21454	1 Megohm	41-43
2	G4-27134	Dial Light Bracket Assm.	61	1	W23785	500000 Ohm	57
2	W32128A	Light Diffuser	.....	1	W21875	100000 Ohm	46-48
2	W32244	Light Diffuser Retainer	.....	1	W22831	15000 Ohm	46
1	B32147A	7 Pole D. T. Switch	1	1	W31361	7000-11000 Ohms	55
1	W32062	Level (Volume) Control (1 Meg.)	39	1	W26577	3 Megohm	58-59
			52-53	1	W31094	4500 Ohm	75
1	W32063	Tone Control & Switch	.....	1	W31007A	Speaker Cord (4 Lead)	77
1	G16-26719	Ant.-Gnd. Terminal	93	3	W32352	Knob	76
1	G5-30745	Power Trans. 60 cy. 110 V.	93	1	G1-32067	Crank Assm.	.....
1	G36-25669	Power Trans. 25 cy. 110-220 V.	64-65	1	W32127A	Dial Glass	.....
				1	W32126A	Dial Glass Retainer	.....
				1	B32125B	Escutcheon	.....
				1	W23880A	Thumb Screw	.....
				1	B32172	Tube & Cond. Shield	.....
				1	C32149	Bottom	.....
5	W21081	Tube Shield Base	.....	1			



# CHASSIS 7H3

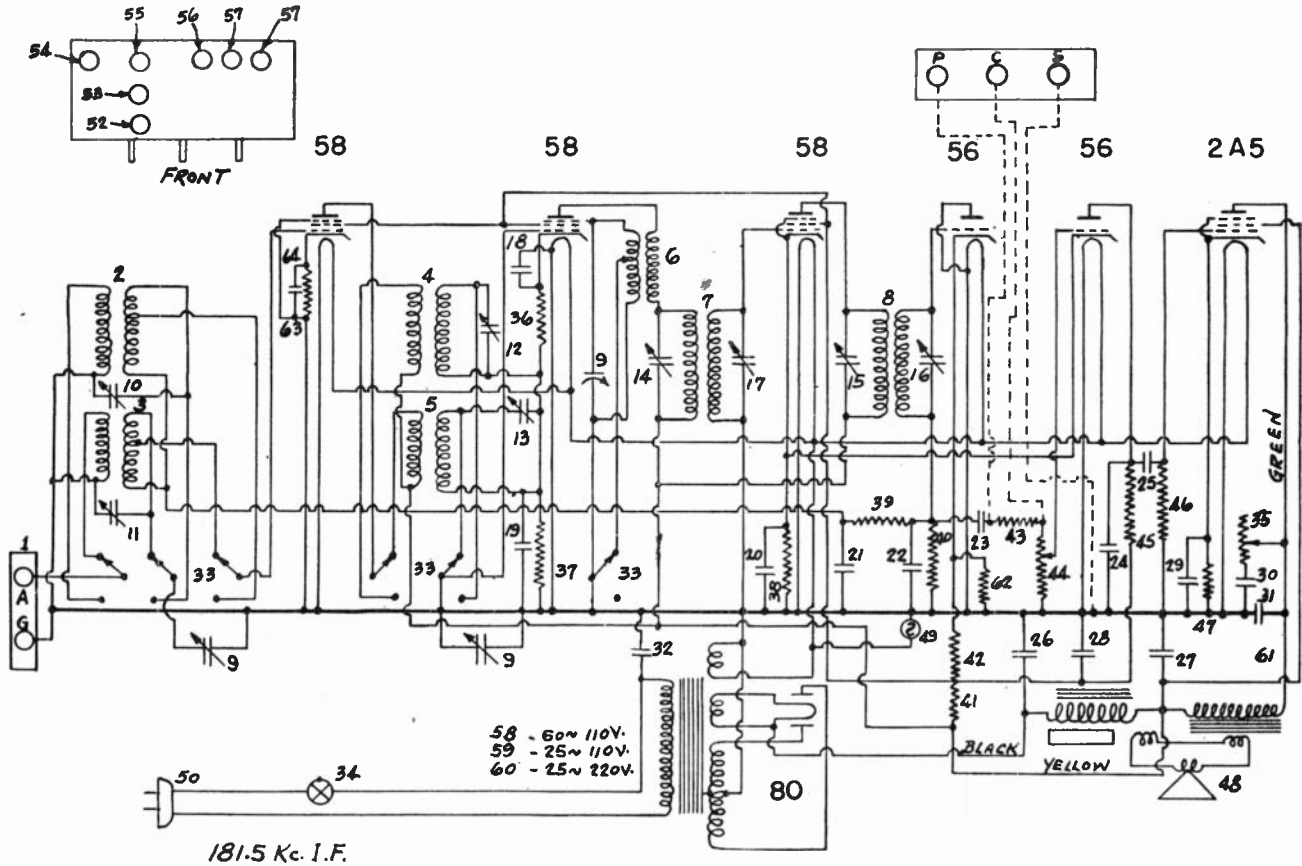
Type	Where Used	Ef	Ep	Eg	Ek	Esg	Ep-Osc
6D6	R.F.	6.5	225	—	0	100	—
6A7	Osc.-Mod.	6.5	225	—	(10LF) (0HF)	100	150
6B7	1st I.F. & A.V.C. Diode	6.5	225	0.3	0	100	—
6D6	2nd I.F.	6.5	225	—	2.0	100	—
6F7	Diode & I.F.	6.5	30	.5	0	22	—
42	Output	6.5	215	2.0	0	225	—
80	Rectifier	4.9	—	—	225	—	—



Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G1-32002	Antenna Coil (H. F.)	2	1	W32063	Tone Control & Line Switch	52-53
1	G3-32000	Antenna Coil (L. F.)	3	1	B21491A	Cord & Plug	68
1	G1-32001	R. F. Coil (H. F.)	11	<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	G2-32001	R. F. Coil (L. F.)	12	1	W29097C	8-.8-.8 Mfd. 450 V.-450 V.-250 V.	8-9
1	G2-32002	Osc. Coil (L. F.)	16	1	W26104B	12 Mfd. 475 V.	10
1	G1-32002	Osc. Coil (H. F.)	17	1	W30321	1 Mfd. 160 V.	60
1	G1-32004	1st I. F. Trans.	29	1	W32379	0.02 Mfd. 200 V.	49
1	G1-32004	2nd I. F. Trans.	33	1	W32380	0.05 Mfd. 200 V.	6
1	G6-32004	3rd I. F. Trans. (Diode) & Trimmer Condensers	35-36	1	W25435	0.003 Mfd. 400 V.	18
1	W31386	Coil Shield Bracket		2	W27216	0.05 Mfd. 200 V.	24
6	W25200	Coil Sockets		1	W31037	0.0001 Mfd.	30-47
3	W30802	Coil Shield		1	W27032	0.0001 Mfd. 200 V.	31
2	W25025A	Coil Shield		1	W28619	0.006 Mfd. 200 V.	37
1	W25024A	Coil Shield		1	W24049	0.006 Mfd. 200 V.	40
2	G1-24064	Coil Shield	29-33	2	W24049	0.1 Mfd. 200 V.	42-44
5	W26891	Insulating Washer		1	W31032	0.004-0.05 Mfd. 400 V.-400 V.	50-51
3	W21541B	Retaining Ring	3-12-18	1	W30805	0.01 Mfd. 400 V.	62
3	W30026	Retaining Ring	11-2-17	1	W32304	0.0014 Mfd.	74
1	G1-33008	Ant. Trimmer Condenser	4	<b>RESISTORS</b>			
1	G1-33008	R. F. Trimmer Condenser	13	3	26577	3 Megohm	7-41-75
1	G14-33009	Osc. Trimmer Condenser	15	1	W27503	1400 Ohm	19
1	G12-33006	L. F. & H. F. Osc. Trimmer Cond. (Series)	21-22	1	21237A	60000 Ohm	20
1	G6-33006	1st I. F. Trimmer Cond.	28	1	21453	40000 Ohm	23
1	G6-33006	2nd I. F. Trimmer Cond.	32	1	21870	10000 Ohm	25-26
1	G18-33002	Variable Tuning Condenser Gang	14	1	21455	300000 Ohm	27
1	G1-32086	Dial Drive Assm.		1	W25937	275 Ohm	34
2	G4-27134	Dial Light Brkt Assm.	61	1	23403	150000 Ohm	38
2	W32128A	Light Diffuser		1	21454	1 Megohm	43-57
2	W32244	Light Diffuser Retainer		3			78
				2	23785	500000 Ohm	45-48
				1	21875	100000 Ohms	46
				1	33390	30000 Ohms	53
				1	23403	150000 Ohms	56
				1	W31361	7000-11000 Ohms	58-59
				1	28578	5 Megohm	65
				1	31094	4500 Ohms	77
				1	W31007A	Speaker Cord	76
5	W27981	Tube Shield Base					
3	W28632	Tube Shield (6A7-6B7-6F7)					
2	B28000	Tube Shield (6D6 Tube)					
1	G0-30745	Power Transformer 60 cy. 110 V.	63	1	W32127A	Dial Glass	
1	G30-25669	Power Transformer 25 cy. 110-220 V.	64	1	W32126A	Dial Glass Retainer	
				1	B32125B	Escutcheon	
				3	W32352	Knob	
1	B32147A	7 P. D. T. Switch	1	1	G1-32067	Crank Assm.	
1	G16-26719	Ant.-Gnd. Terminal	5	1	B32172	Tube & Cond. Shield	
1	W32062	Level Control (Volume) 1 Megohm	39	1	W23880A	Thumb Screw	
				1	C32149	Bottom	

# CHASSIS 7V2

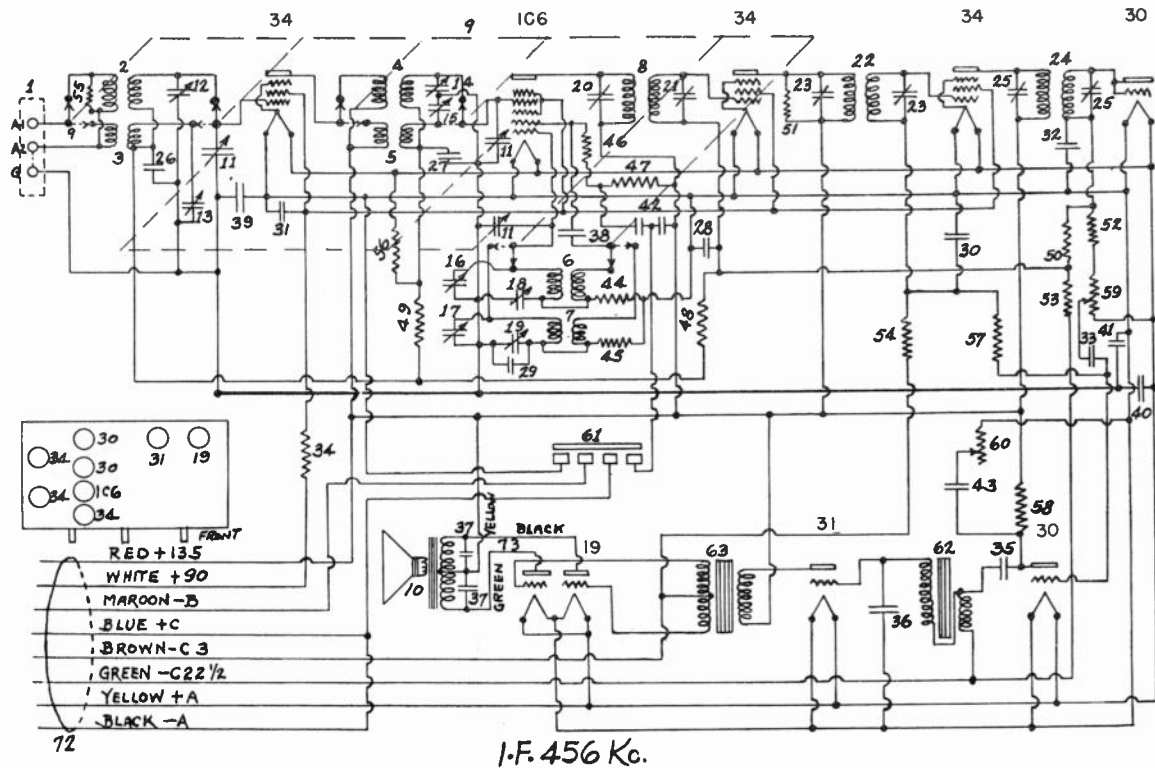
Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup
58	R.F.	2.5	260	0	0	125	0
58	Osc-Mod	2.5	260	31	31	125	0
58	I.F.	2.5	260	0	4	125	4
56	Diode	2.5	0	0	0	—	—
56	A.F.	2.5	50	0	4	—	—
2A5	Output	2.5	250	0	15	260	—
80	Rectifier	4.8	400AC	—	370	—	—



181.5 Kc. I.F.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G15-32000	Ant. Transformer Coll L. F. (Short Wave)	2	1	G18-23559	Power Transformer 110 Volt 25 cy.	59
1	G16-32000	Ant. Transformer Coll H. F. (Broadcast)	3	1	G19-23559	Power Transformer 220 Volt 25 cy.	60
1	G9-32001	R. F. Transformer Coll L. F.	4	1	B-21491C	A. C. Cord & Plug	50
1	G8-32001	R. F. Transformer Coll H. F.	5	1	LW-20264	Ant.-Gnd. Terminal	1
1	G11-32002	Osc. Transformer Coll	6	<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	G5-32003	1st I. F. Transformer Coll	7	1	W29150B	12.-6.-8. Mfd. 25 V.-450 V.-450 V. Cond.	27-28
1	G1-32003	2nd I. F. Transformer Coll	8	1	W26104B	12. Mfd. 475 Volt Cond.	29
7	W25200	Coll Socket	9	1	W24049B	0.1 Mfd. 200 Volt Cond.	20
5	W25024A	Coll Shield (Large)	10	1	W23142	0.02 Mfd. 400 Volt Cond.	21
2	W25025A	Coll Shield (Small)	11	1	W25537A	0.001-0.03 Mfd. 400 V.-400 V. Cond.	24-25
7	W26891	Insulating Washer	12	1	W25517A	0.05-0.008 Mfd. 400 V.-400 V. Cond.	30-31
7	W21541B	Retaining Ring	13	1	W30805	0.01 Mfd. 400 Volt Cond.	32
1	G1-29699	L. F. & H. F. Ant. Trimmer Cond.	10-11	1	W29260B	0.00017-0.03 Mfd. 400 V.-400 V. Cond.	60-67
1	G1-29699	L. F. & H. F. R. F. Trimmer Cond.	12-13	1	W28021	0.02 Mfd. 200 Volt Cond.	68
1	G1-33007	1st & 2nd I. F. Primary and 2nd I. F. Secondary Trimmer Cond.	14-15	1	W28023	0.02-0.02 Mfd. 200 V.-200 V. Cond.	69-70
1	W25008A	1st I. F. Sec. Trimmer Cond. Adj. Blade	16	<b>RESISTORS</b>			
1	W32201B	Dial Support Brkt.	17	3	W25937	275 Ohm	30-38
1	G6-32086	Dial Drive Assm.	44	1	31094	4500 Ohm	63
1	W32208A	Dial Hand	34-35	1	26577	3 Megohm	37
1	G14-33002	Variable Tuning Condenser Gang	65	1	21454	1 Megohm	39
1	W25666B	Level Control (Volume)	44	1	21454	1 Megohm	40
1	W25594B	Tone Control & Line Switch	34-35	1	W28471	8500-25000 Ohm	41-42
2	G4-27134	Light Bracket Assm.	49	2	23785	500000 Ohm	43-46
1	R30569D	6 Pole D. T. Switch	33	1	23403	150000 Ohm	45
				1	W25521	450 Ohm	47
				1	W30127	450 Ohm	62
3	W26010	Tube Shield Base (58 Tube)	19	1	W31009A	Speaker Cable	61
3	B26000C	Tube Shield	19	1	W32353	Knob (Large)	
1	G17-23559	Power Transformer 110 Volt 60 cy.	59	1	W32352	Knob (Small)	
				1	R21335	Tube & Condenser Shield	

# Wiring Diagram For Model 8B3

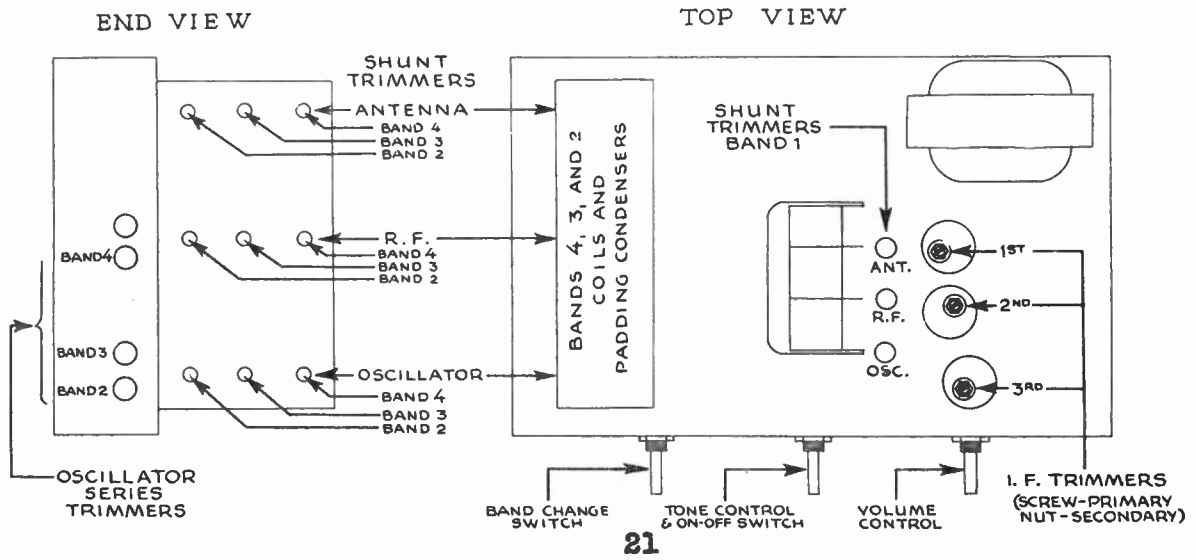
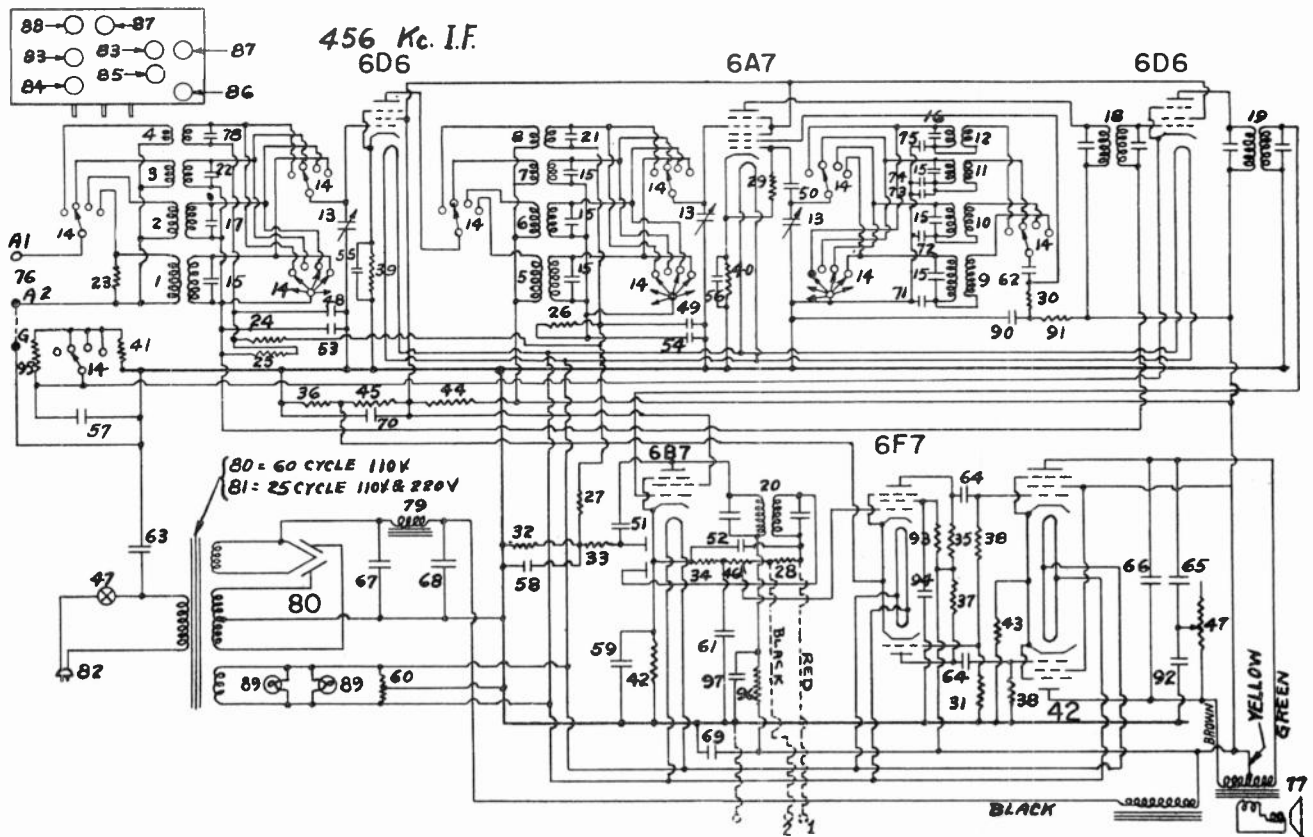


Figures in first column correspond to figures in diagram on page 18

Part Number	Description	Part Number	Description		
1	G16—26719	Ant.-Gnd. Term. ....	44	21875	100,000 Ohms .....
2	G3 —32000	L. F. Ant. Trans. ....	45	21875	100,000 Ohms .....
3	G28—32000	H. F. Ant. Trans. ....	46	21878	10,000 Ohms .....
4	G2 —32001	L. F. R. F. Trans. ....	47	27121	5,000 Ohms .....
5	G18—32001	H. F. R. F. Trans. ....	48	21455	300,000 Ohms .....
6	G2 —32002	L. F. Osc. Trans. ....	49	21455	300,000 Ohms .....
7	G21—32002	H. F. Osc. Trans. ....	50	26577	3 Meg. ....
8	G1 —32004	1st I. F. Trans. ....	51	21455	300,000 Ohms .....
9	B —34094	Band Change Switch ..	52	23403	150,000 Ohms .....
10	—42PM	Speaker .....	53	33490	10 Meg. ....
11	G25—33002	Variable Cond. ....	54	21455	300,000 Ohms .....
12		{L. F. Ant. Trim. Cond.	55	31094	4,500 Ohms .....
13	G1 —33008	{H. F. Ant. Trim. Cond.	56	26578	5 Meg. ....
14	G9 —33009	{L. F. R. F. Trim. Cond.	57	21454	1 Meg. ....
15		{H. F. R. F. Trim. Cond.	48	22196	20,000 Ohms .....
16	G18—33009	{L. F. Osc. Trim. Cond.	59	W —34095	Level Control .....
17		{H. F. Osc. Trim. Cond.	60	W —33993-A	Tone Control .....
18	G20—33006	{L. F. Osc. Series T. C.	61	W —33993-A	On-Off Switch .....
19		{H. F. Osc. Series T. C.	62	G1 —34189	1st Audio Trans. ....
20		{1st I. F. Pri. T. C. ....	63	G2 —34189	2nd Audio Trans. ....
21	G6 —33006	{1st I. F. Sec. T. C. ....			
22	G21—32004	{2nd I. F. Trans. ....			
23		{Trimmer Cond. ....			
24	G22—32004	{3rd I. F. Trans. ....			
25		{Trimmer Cond. ....			
26	W —32379	.02 Mfd. 200 Volt .....			
27	W —32379	.02 Mfd. 200 Volt .....			
28	W —27216	.05 Mfd. 200 Volt .....			
29	G3 —34000	2200 Mmfd. ....	72	G3 —29237	Cable & Marker Assm.
30	W —27216	.05 Mfd. 200 Volt .....	73	W —31009-A	Speaker Cable .....
31	W —28869	2.0 Mfd. 200 Volt .....		27307	Spkr. Cone & V. C. As.
32	W —27932	.0001 Mfd. 200 Volt ...		29200	Spkr. Transformer .....
33	W —27216	.05 Mfd. 200 Volt .....	G17—32086	Dial Assem. ....	
34	24814	7000 Ohms .....	W —32208	Dial Hand .....	
35	W —29910-A	.25 Mfd. 200 Volt .....	B-76	Dial Hand Screw .....	
36	G1 —34004	.00025 Mica .....	W —33528	Escutcheon & Window	
37	W —31158	Dual .006 Mfd. 400 V.	W —33984	Escutcheon Gasket ...	
38	W —25435	.003 Mfd. 400 Volt .....	D-28	Escutcheon Screws ...	
39	W —24049-B	.1 Mfd. 200 Volt .....	W 33994	Tuning Knob .....	
40	W —29910-A	.25 Mfd. 200 Volt .....	W 33995	Vernier Knob .....	
41	W —30321-A	1.0 Mfd. 160 Volt .....	W 31585	V. C. & T. C. Knob ...	
42	W —33990	Dual 8 Mfd. Elect. ....	W 33991	Band Change Knob ...	
43	W —27216	.05 Mfd. 200 Volt .....	G6 —23300	"A" Batt. Resistor .....	

# CHASSIS 8H1

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Epx	Egx
6D6	R.F.	6.3	250	0	3	100	—	—
6A7	Osc.-Mod.	6.3	250	0	3	100	220	0 to -10
6D6	1st I. F.	6.3	250	0	7-21	100	—	—
6B7	2nd I. F. and Diode	6.3	250	0	3	100	—	—
6F7	A.F. and Phase Inv.	6.3	140	0	4	35	70	0
42	Output	6.3	240	0	16	250	—	—
80	Rectifier	5.0	—	—	350	—	—	—



# M O D E L 8 H I

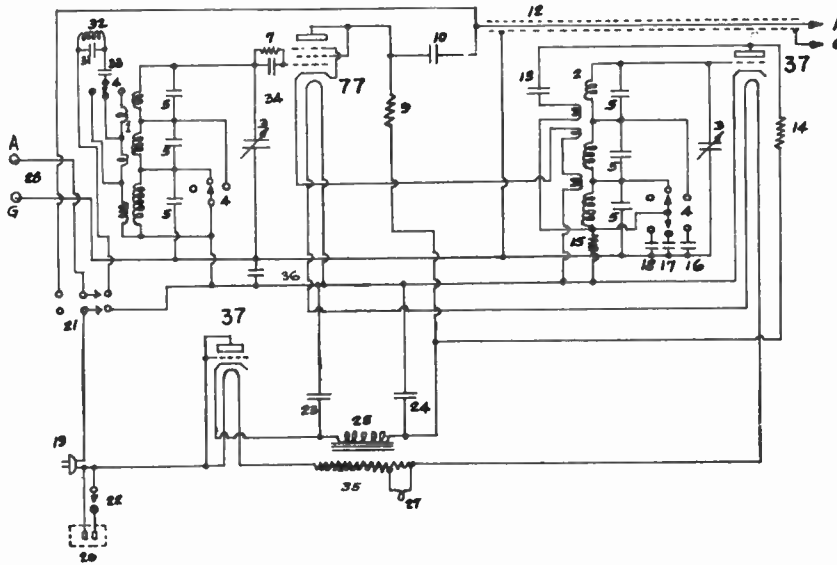
**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

\*Figures in 2nd last column refer to parts shown in wiring diagram of Model 8H1

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G3-32000	Antenna Coil (Broadcast) ..	1				
1	G4-32000	Ant. Coil (1500-4000 Kc.) ....	2				
1	G5-32000	Ant. Coil (4000-10000 Kc.) ..	3				
1	G6-32000	Ant. Coil (10000-24000 Kc.) ..	4				
1	G2-32001	Inter. Coil (Broadcast) .....	5	1	W26194B	12. Mfd. 475 Volt .....	67
1	G8-32001	Inter. Coil (1500-4000 Kc.) ..	6	1	W29097C	8-.8-.8. Mfd. 450-450-250 Volts .....	68-69
1	G3-32001	Inter. Coil (4000-10000 Kc.) ..	7	1	W32258	8. Mfd. 300 Volts .....	70
1	G4-32001	Inter. Coil (10000-24000 Kc.) ..	8	1	W30321	1. Mfd. 160 Volts.....	71
1	G2-32002	Osc. Coil (Broadcast) .....	9	2	W32278	0.001 Mfd. ....	48-49
1	G3-32002	Osc. Coil (1500-4000 Kc.).....	10	1	W30741	0.00025 Mfd. ....	50
1	G4-32002	Osc. Coil (4000-10000 Kc.)....	11	1	W32226	0.0005 Mfd. ....	51
1	G5-32002	Osc. Coil (10000-24000 Kc.)..	12	1	W31937	0.0001 Mfd. ....	52
6	W26891	Insulating Washer .....	1-2-5-6 9-10	2	W32379	0.02 Mfd. 200 Volt .....	53-54
6	W21541C	Retaining Ring .....	1-2-5-6 9-10	5	W28621	0.02 Mfd. 200 Volt .....	55-56
6	W30026A	Retaining Ring .....	3-4-7-8 11-12	2			57-58
3	W25200	Coil Socket .....		1	W23035	0.006 Mfd. ....	59
3	W30802	Coil Shield .....		2	W23191A	0.01 Mfd. 400 Volt .....	62
1	G1-32261	Coil Shield Shelf .....	1 to 12 Colls	1	W23615	0.05 Mfd. 400 Volt .....	63-67
1	C-32729A	Coil Shelf Cover .....	1 to 12 Colls	1	W31052	0.05-0.004 Mfd. 400-400 Volt	64
1	G12-32004	1st Tuned I. F. Trans.....	18	1	W32279	0.00085 Mfd. ....	65-66
1	G5-32004	2nd Tuned I. F. Trans.....	19	1	W32332A	0.000791 Mfd. ....	74
1	G6-32004	3rd Tuned I. F. Trans.....	20	1	W30270	0.001 Mfd. ....	75
1	G7-33009	Parallel Padding Condenser	15	1	W23142	0.02 Mfd. 400 Volt .....	92
1	G5-33009	Parallel Padding Condenser	17				94
1	G17-33009	Parallel Padding Condenser	100				
1	G2-33008	Parallel Padding Condenser	99				
1	G11-33000	Parallel Padding Condenser	21	1	31094	4500 Ohms .....	23
1	G6-33009	Parallel Padding Condenser	16	4	21455	300000 Ohms .....	24-25
1	G2-33003	Padding Condenser .....	72-73	3	23785	500000 Ohms .....	26-27
1	G14-33006	Padding Condenser .....	98	1	21875	100000 Ohms .....	28-38
1	B32104B	Band Change Switch.....	14	2	24814	7000 Ohms .....	33
1	G18-32002	Tuning Condenser Gang ...	13	2	21237A	60000 Ohms .....	29
1	G15-32086	Dial Drive Assem. ....		2	24577	3 Megohms .....	30-31
1	W32188B	Dial Hand .....		1	21876	10000 Ohms .....	31-35
1	B78	4/36x1/8 Blind. Hd. Mach. Sc.	89	2	W30127	450 Ohms (Flexible) .....	32-33
2	G4-27134	Light Bracket Assem. ....		1	23403	150000 Ohms .....	34
2	W32128A	Light Diffuser .....		2	W25037	275 Ohms (Flex.) .....	36-42
2	W32244	Diffuser Retainer .....		2	W22514	750 Ohms (Flex.) .....	37
1	W33378	Level Control (Volume) .....	46	1	W22873	220 Ohms .....	39-40
1	W32043	Tone Control & Line Switch	47	1	W32301	10000-15000 Ohms .....	41-46
1	G16-26719	Ant. Gnd. Terminal .....	76	1	W32337	10-10 Ohms .....	43
1	B21491C	A. C. Cord & Plug .....	82	1	22831	15000 Ohms .....	44-45
							95
1	W33072	Socket Cushion .....	84				
2	W33071	Washer .....	84	1	G1-32067	Crank Assem. ....	
1	W33073	Tube Shield Base .....	84	2	W32352	Knob (Black, for V. Con- trol & T. Control) .....	
2	W28632A	Tube Shield .....	84-85	1	W32643	Knob (Black, for Band Change Switch) .....	
2	B26009D	Tube Shield .....	83	2	W31585B	Knob (Brown, for V. Con- trol & T. Control) .....	
3	W27981A	Tube Shield Base .....	83-85	1	W33954	Knob (Brown, for Band Change Switch) .....	
2	W32744	Socket Insulator .....	86-87	1	W33994	Knob (Brown, for Tuning Shaft) .....	
1	G37-25669	Power Trans. 60 Cy. 110 V	80	1	W33995	Knob (Brown, for Vernier Tuning) .....	
	G38-25669	Power Trans. 25 Cy. 110-120 Volt .....	81	1	B33708	Esc. & Window Assem. ....	
1	G1-24628	Filter Choke .....	79	1	W33985	Escutcheon Gasket .....	
				1	B32125B	Escutcheon .....	
				1	W32127A	Dial Glass .....	
				1	W32126A	Glass Retainer .....	

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

# Model 10



## PARTS LIST

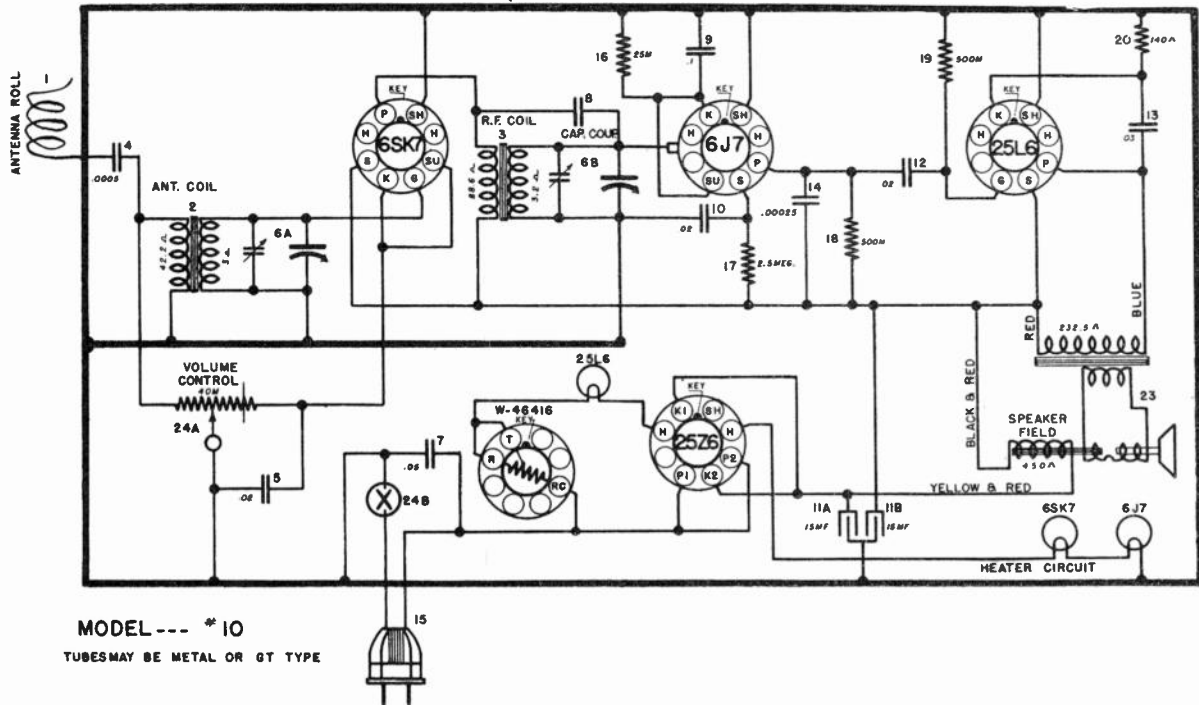
Item No.	Part No.	Description
1	G2-30173	Ant. Coil
2	G1-30173	Osc. Coil
3	B-30079	Var. Cond.
4	B-31092	Switch
5	G2-29699	Trimmer Cond.
7	26577	3 Meg. Resis.
9	21875	100,000 ohm Resis.
10-13	W-28619	.006 Cond's. (200 v.)
12	LW-30113	Shielded Lead
14	21876	10,000 ohm Resis.
15	21237-A	60,000 ohm Resis.
16-17	G1-28884	Padding Cond's.
18	W-30180	.0012 Cond. (200 v.)
19	W-27885-A	Cord & Plug
20	G1-30078	a.c.Receptacle
21-22	W-30081	Switches
23-24	W-27676	4-4 mfd. Cond's.
25	G6-28168	Filter Choke
27	W-4099-A	6v.Dial Lamp
31	G6-29699	Trimmer Cond.
32	G3-24234	R.F. Choke
33	W-28619	.006 Cond. (200 v.)
34	W-7847-A	.0001 Cond. (200 v.)
35	W-28864-B	285 ohm Resis.
36	W-30488	.02 Cond. (400 v.)

CHASSIS MODEL 10

SOCKET VOLTAGES TAKEN @ 117.5 VOLT LINE (A. C.)

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6SK7	R. F. Amplifier	GND.	H	3.0	GRID	3.0	92	H	91
6J7	Detector	GND.	H	20	B	2.0	H	H	2.0
25L6	Output	GND.	H	82	91	GRID	N.C.	H	5.8
25Z6	Rectifier	H	H	A.C.	120	A.C.	H	H	120
W-46416	Ballast Resistor—165 Ohms (Cold) Between No. 3 and No. 7 Pins with No. 7 and No. 8 Pins Tied Together.								

Power Consumption @ 117.5 Volts Line—Approximately 43 Watts.  
 D. C. Drop Across Speaker Field—29 Volts.  
 Maximum Power Output Approximately 2.0 Watts.

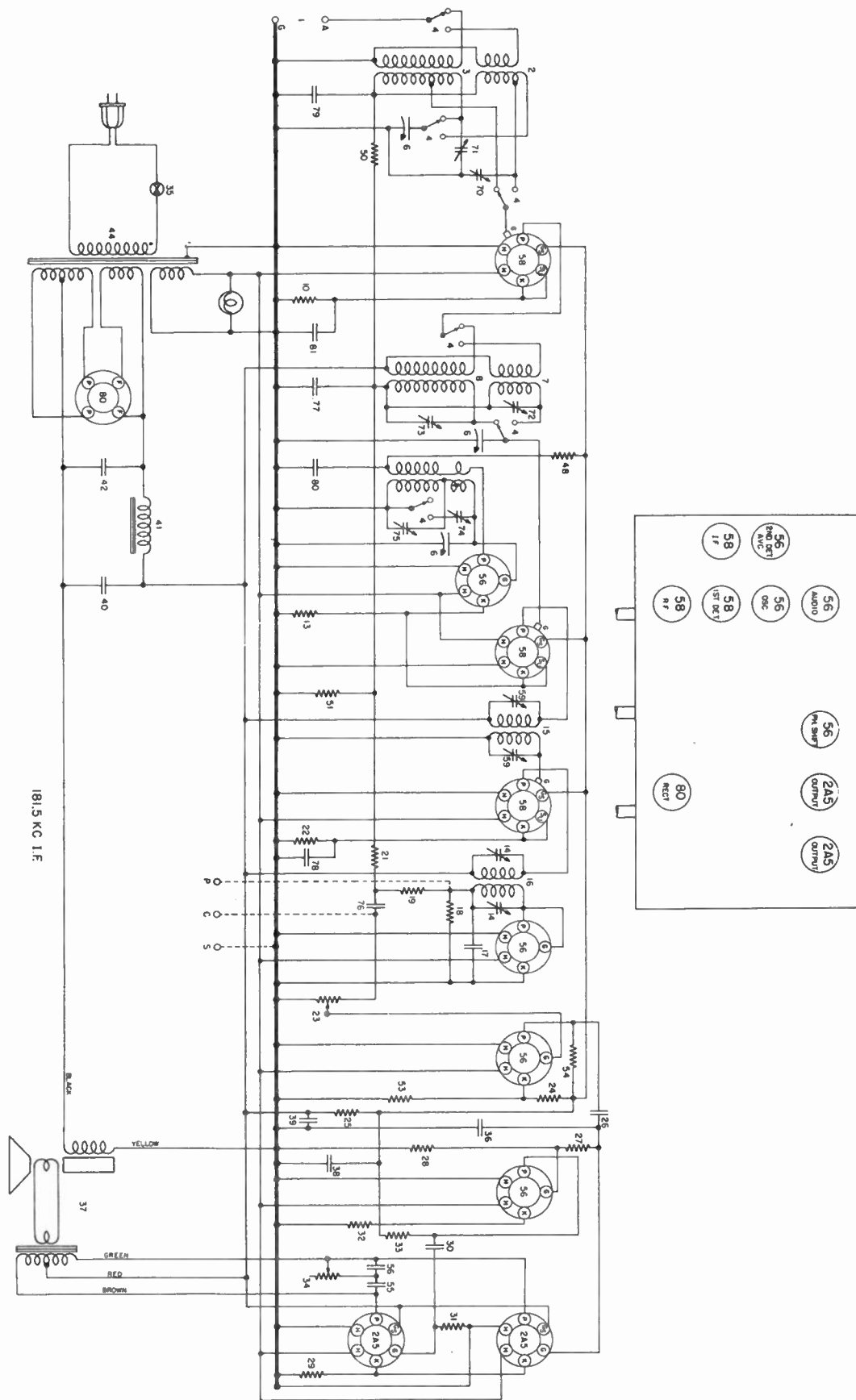


PARTS LIST — MODEL 10

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G182—34403	Antenna Roll (20 Feet)	G17	—43554	Pulley and Hub Assy. (On Gang.)
2	G220—32000	Antenna Coil		—23877	No. 8—32 x 3/16" Set Screw—Pulley
3	G111—32001	R-F. Coil		—49666	Drive Shaft
4	G3—34002	Condenser, .0005 Mf. Mica		—49665	Bearing—Drive Shaft—Riveted to Chassis
5	—45780	Condenser, .02 Mf. 160 V.		—28072	Lock Spring—Drive Shaft
6	G78—33001	Condenser—Variable Tuning—Gang.	G18	—41582	Drive Cord (27")
7	—45782	Condenser, .05 Mf. 120 V. (A. C.)		—44989	Spring—Drive Cord Tension
8	G4—50640	Condenser—Twisted Wire Coupling		—41582	Guide Cord—Pointer (8")
9	—50105	Condenser, .1 Mf. 160 V.	G26	—46848	Spring—Guide Cord Tension
10	—45780	Condenser, .02 Mf. 160 V.		—47582	Pointer—Dial Hand (FS-77)
11	—49664	Condenser—Dual Electrolytic		—38422	Shield—Gang Condenscr
		A—15 Mf. 140 V.		—47623	Bracket—Gang Condenser Mtg.
		B—15 Mf. 120 V.		—49674	Socket—8 Prong—No Marking
12	—45780	Condenser, .02 Mf. 160 V.		—49693	Insulator—Socket Mtg.
13	—50065	Condenser, .03 Mf. 160 V.		—46416	Ballast Tube (K35E)
14	None		AA	—47598	Cabinet—Brown (Model 5310AA)
15	—45784	Power Cord and Plug		—47598	Back—Cabinet
	—47577	Lock Plate—Power Cord		—48758	Trimount Studs—Back Mtg. (2) (FS-18)
16	—40643	Resistor, 25,000 Ohms 1/4 W.	B	—130	Screw—Back Mtg. (FS-18)
17	—49690	Resistor, 2.5 Megohms 1/4 W.		—47572	Shipping Carton (Single)
18	—36322	Resistor, 500,000 Ohms 1/4 W.		—48078	Shipping Carton (4 Unit)
19	—36322	Resistor, 500,000 Ohms 1/4 W.		—47603	Knob—Volume Control and Tuning
20	—47512	Resistor, 140 Ohms 1/4 W.		—41742	Spring—Knob Insert
21	None			—49683	Instruction Booklet
22	None				
23	G1—49675	Speaker			
24	—48320	Power Switch and Volume Control (40,000 Ohms)			
	—47833	Glass Dial Face			
	—46921	Speed Nut—Dial Glass Mtg.			
	MG6—49670	Dial Back Face (Metal Bracket)			

The general replacement volume control line handled by Crosley distributors is complete, of excellent quality and properly priced. The factory will be happy to furnish information regarding this material.



MODEL 10P3



PARTS LIST - MODEL 10 P 3

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description
1	LW-20264	Ant. Gnd. Terminal
2	G16-32000	Ant. Trans. (H.F.)
3	G15-32000	Ant. Trans. (L.F.)
4	B-30569-D	6 P.D.T. Switch
6	G17-33002	Variable Cond.
7	G8-32001	R.F. Trans. (H.F.)
8	G9-32001	R.F. Trans. (L.F.)
9	G12-32002	Osc. Trans.
10	W-25937	275 ohms.
13	W-21965	375 ohms
14	G4-33006	I.F. Tuning Cond.
15	G5-32003	1st I.F. Trans. 181.5 kc.
16	G1-32003	2nd I.F. Trans. 181.5 kc.
17	W-27932	0.0001 mfd. 200 v.
18	21454	1 Meg.
19	21455	300,000 ohms
21	26577	3 Meg.
22	W-28589	350 ohms
23	W-25666-B	Level Control
24-25	W-31361	11,000 & 7,000 ohms
26	W-23615	0.05 mfd. 400 v.
27	21455	300,000 ohms
28	21453	40,000 ohms
29	W-22873	220 ohms
30	W-23615	0.05 mfd. 400 v.
31	21455	300,000 ohms
32	31093	2,700 ohms
33	21237-A	60,000 ohms
34-35	W-25594-B	Tone Control & Switch
36	W-26571	0.005 mfd. 200 v.
37	48C	Speaker Assy.
38-39-40	B-30059-C	8-8-8 mfd.
41	G1-24628	Filter Choke
42	W-26194-B	12 mfd. 475 v.
44	G33-25669	Power Trans. 60 cycle
48	4921C	10,000 ohms
50	21455	300,000 ohms
51	26578	5 Meg.
52	W-31342	Speaker Cable
53	W-25937	275 ohms Flex.
54	23403	150,000 ohms
55-56	W-31052	0.05-0.004 mfd.
59	G3-33006	I.F. Tuning Cond.
70-71	G1-33009	Trimmer Cond.
72-73	G1-33009	Trimmer Cond.
74-75	G1-33009	Trimmer Cond.
76	W-28619	0.006 mfd., 200 v.
77-78	W-28622	0.1 mfd. 200 v.
79-80-81	W-28621	0.02 mfd. 200 v.

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 7, located in top of 2nd I-F assy., (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 6, located on top of 1st I-F assy., (Fig. 2) for maximum output.

**Aligning the R-F Amplifier.**

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal

is heard. It is not necessary that the receiver tunes through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).

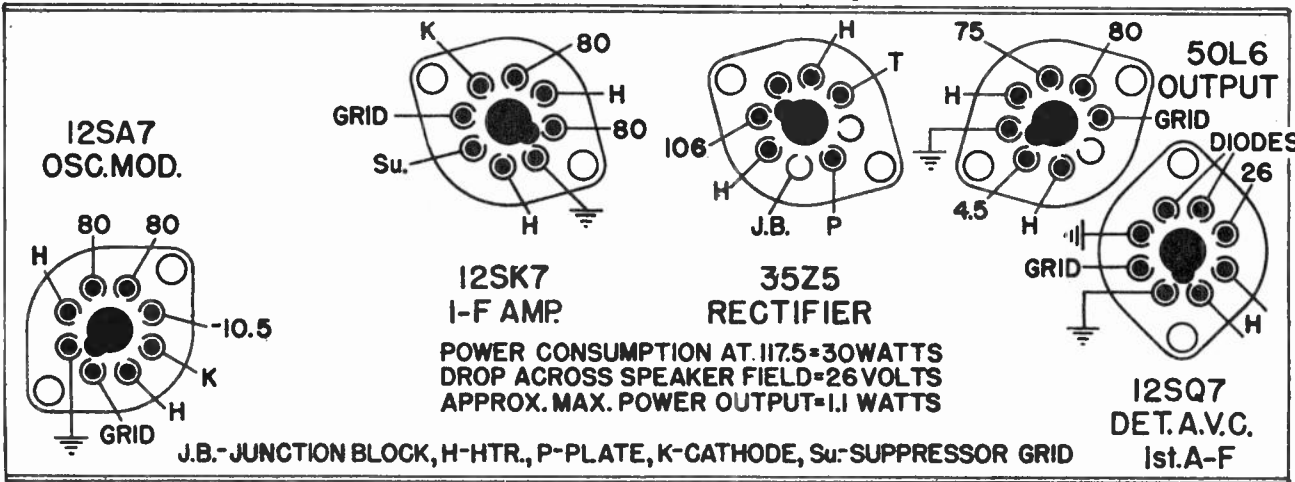
NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the loop mounting bracket (Fig. 2) and consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 45).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for **MINIMUM** output.



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER.

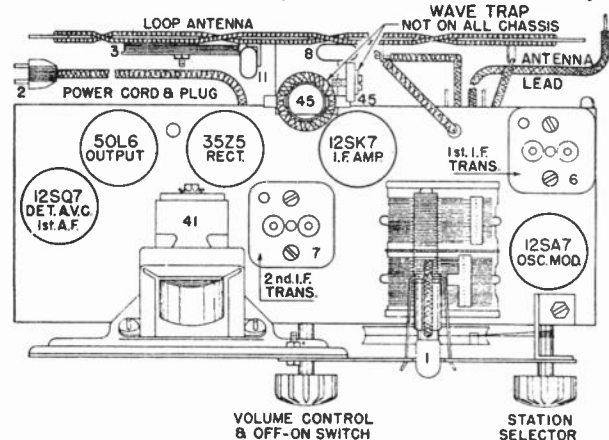


Fig. 2—Top View Model 11 Chassis

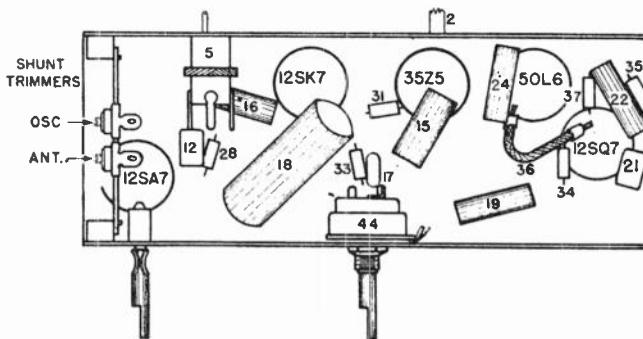
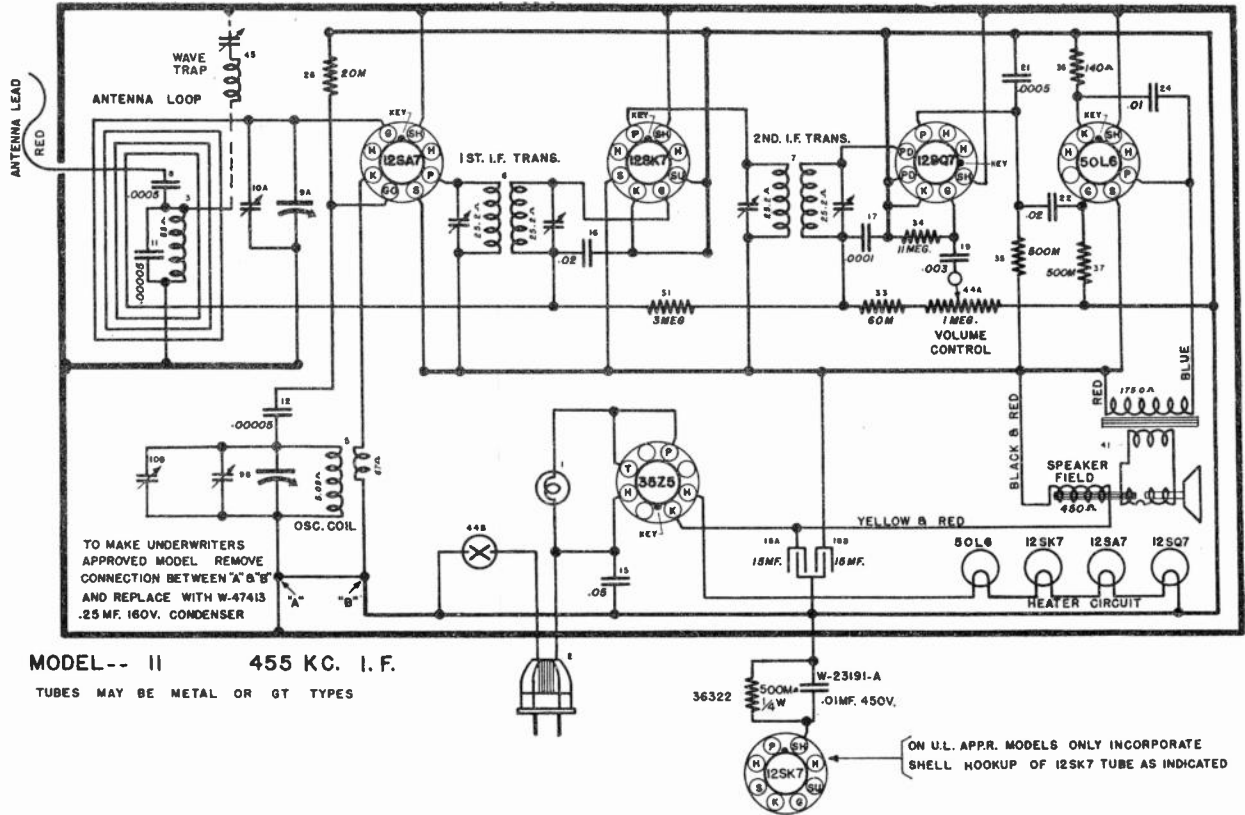


Fig. 3—Bottom View Model 11 Chassis



MODEL-- 11 455 KC. I. F.

TUBES MAY BE METAL OR GT TYPES

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	45	G193—32004	Wave Trap (455 Kc.)
2	G1—49637	Socket—Dial Light		—49766	Metal Dial Face
3	—49775	Power Cord and Plug		—49727	Bracket—Dial Face Mtg. (FS-8)
	G1—32008	Loop Antenna		—49780	Dial Pointer
	—49729	Bracket—Loop Mtg. (FS-58)		—49665	Bearing—Drive Shaft—Riveted to Chassis
	—20989	Fibre Washer—Loop Mtg.		—49741	Drive Shaft
	—23880	Thumb Screw—Loop Mtg. (FS-58)		—28032	Spring—Drive Shaft Retaining
4	None		G11	—41582	Drive Cord
5	G229—32002	Oscillator Coil		—15752	Spring—Drive Cord Tension
6	G240—32004	1st I-F. Transformer		—49770	Trimount Studs—Dial Mtg. (2) (FS-58)
7	G241—32004	2nd I-F. Transformer		—49742	Screws—Dial Mtg. (2) (FS-58)
8	G3—34002	Condenser—.0005 Mf. Mica		—49832	Dial Lens—AB and AH Cabinet
9	—49737	Condenser—2 Section Variable Tuning		—130078	Lens and Escutcheon—AC Cabinet
10	—49723	Condenser—Dual Shunt Padder Assy.		—49770	Trimount Studs—Dial Lens Mtg.—AB and AC Cabinet (FS-58)
11	G5—34002	Condenser—.0005 Mf. Mica		AH	Cabinet—Ivory (Bakelite)
12	G5—34002	Condenser—.00005 Mf. Mica		—130098	Back—AH Cabinet
13	None			AB	Cabinet—Mottled Brown (Bakelite)
14	None			—130097	Back—AB Cabinet
15	—45782	Condenser—.05 Mf. 120 V. (A. C.)		AC	Cabinet—Wood
16	—45780	Condenser—.02 Mf. 160 V.		—130173	Back—AC Cabinet
17	G2—34002	Condenser—.0001 Mf. Mica		—48758	Trimount Stud—AB Back Mtg. (4)
18	—49664	Condenser—Dual Electrolytic A—15 Mf. 140 V. B—15 Mf. 120 V.		—48758	Trimount Stud—AH Back Mtg. (4) (FS-58)
19	—45810	Condenser—.006 Mf. 160 V.	S	—80	Screw—AC Back Mtg. (10) (FS-18)
20	None			—49971	Shipping Carton—AB and AH Cabinet
21	G3—34002	Condenser—.0005 Mf. Mica		—130021	Shipping Carton—AC Cabinet
22	—45780	Condenser—.02 Mf. 160 V.		—130307	Felt Pad—Chassis Screw Cover
23	None			—48684	Flat Washer—Chassis Mtg. (AC Cabinet) (FS-58)
24	—23191	Condenser—.01 Mf. 400 V.		—45020	Flat Washer—Chassis Mtg. (AB and AH Cabinet)
25	None			—48900	Screw—Chassis Mtg. (FS-58)
26	None			—130255	Knob—AH Cabinet (2) (Black)
27	None			—46953	Knob—AB and AC Cabinet (2) (Brown)
28	—36760	Resistor, 20,000 Ohms 1/4 W.		—41742	Spring (Knob Insert)
29	None			—49878	Hole Plug (2 Req.) J-11 (FS-58)
30	None			—130126	Hole Cover (1 Req.) J-11
31	—36688	Resistor, 3 Megohms 1/4 W.		—130127	Switch Hole Cover—J-11
32	None			—130130	Bottom Cover (Insulator) J-11
33	—35928	Resistor, 60,000 Ohms 1/4 W.	MG17	—130115	Bottom Cover Assy.—J-11
34	—48693	Resistor, 11 Megohms 1/4 W.		—47413	Condenser, .25 Mf. 160 V.—Model J-11
35	—36322	Resistor, 500,000 Ohms 1/4 W.		—23191	Condenser, .01 Mf. 400 V.—Model J-11
36	—47512	Resistor, 140 Ohms 3/4 W.		—36322	Resistor, 500,000 Ohms—Model J-11
37	—36322	Resistor, 500,000 Ohms 1/4 W.			
38	None				
39	None				
40	None				
41	G1—49698	Speaker and Transformer—Model 11			
	G3—49698	Speaker and Transformer—Model J-11			
42	None				
43	None				
44	—49774	Volume Control and Switch (1 Meg.)			

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

**Aligning the R-F Amplifier.**

(a) Pre-align the trimmer on the "OSC" section of

the gang condenser 1/2 turn from the closed position. Check pointer travel, must start on index line with gang closed.

(b) Using a .0001 mf. (100 mmf.) condenser as dummy antenna, connected to antenna lead (Blue or Red), open gang condenser all the way (minimum position), volume control to maximum. Depress manual push button.

(c) Set signal generator to 1650 kc.

(d) Adjust "OSC" shunt trimmer for maximum output, rear trimmer on right end of chassis.

(e) Set signal generator to 1400 kc.

(f) Tune in 1400 kc. generator signal with manual tuning knob.

(g) Adjust "ANT" shunt trimmer for maximum output (front trimmer on right end of chassis).

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for **MINIMUM** output.

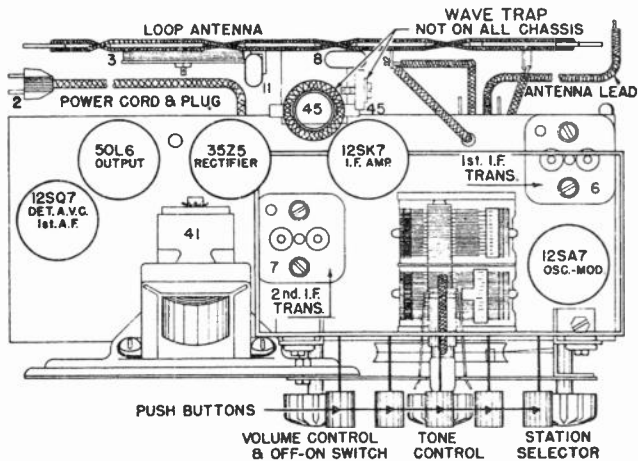


Fig. 2—Top View Model 12, J-12

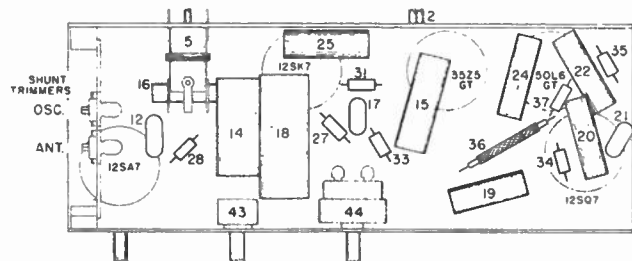
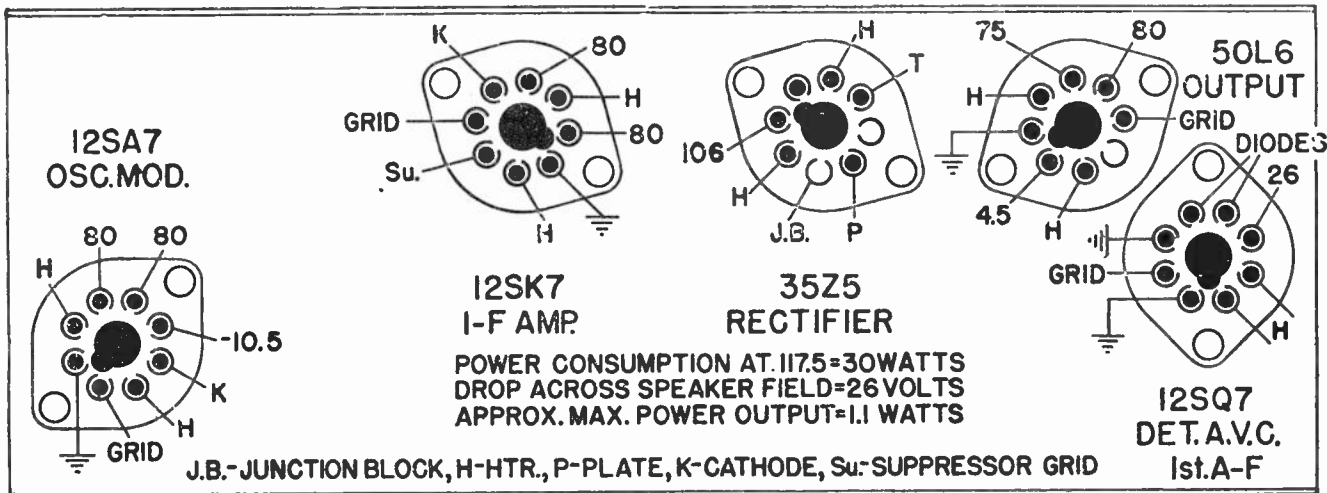
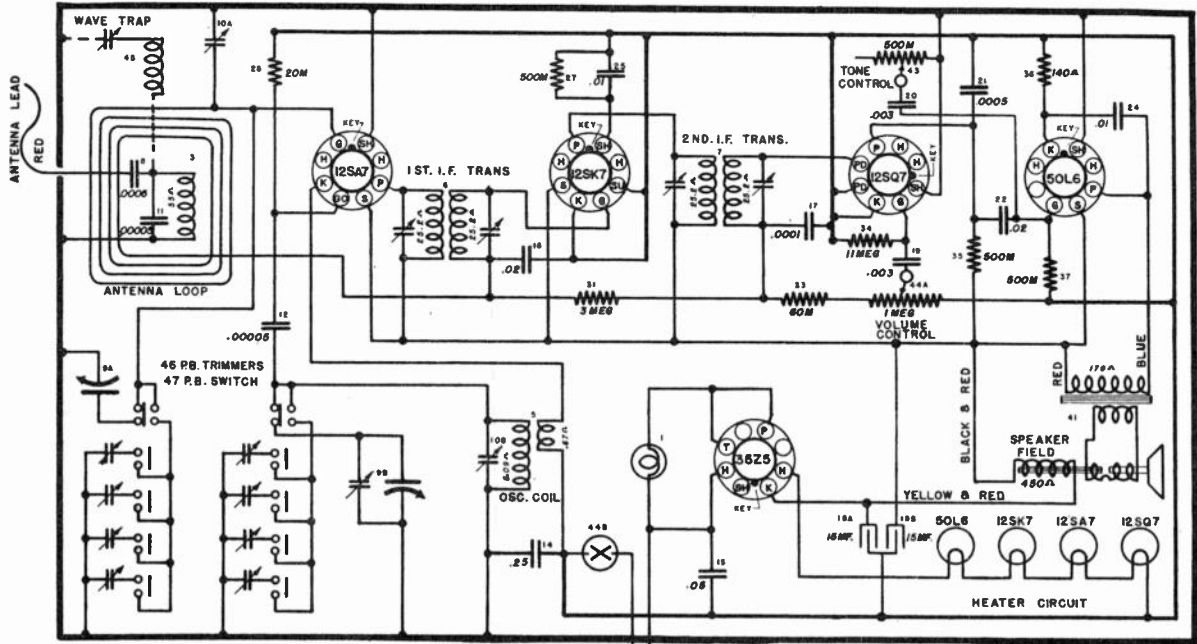


Fig. 3—Bottom View Model 12, J-12



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER.

MODELS 12, J12



MODEL -- 12, J12 455 KC. I.F.  
TUBES MAY BE METAL OR GT TYPES

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	—49732A	Push Button "Osc." Padder (800-	
2	G1 —49637	Socket Assy.—Dial Light	—49732A	Push Button "Ant." Padder (1,000-	
	—49775	Power Cord and Plug	—49732A	Push Button "Osc." Padder (1,000-	
3	G1 —32008	Insulating Lock Plate—Power Cord	—49769	Push Button Padder Mtg. Strap	
	—49739	Bracket—Loop Mtg.	—49771A	Push Button Bracket—Switch Mtg. (FS-8)	
	—20989	Fibre Washer—Loop Mtg.	—49731	Push Button Rear Support Bracket (FS-8)	
	—23880	Thumb Screw—Loop Mtg. (FS-58)	—49728	Push Button—L. H. Support Bracket (Front) (FS-8)	
4	None		—49727A	Push Button—R. H. Support Bracket (Front) (FS-8)	
5	G228—32002	Oscillator Coil	—49899	Rubber Grommet—P. B. Mtg. (3 Req.)	
6	G240—32004	1st I-F. Assy.	—46460	Headed Bushing—P. B. Mtg. (3 Req.)	
7	G241—32004	2nd I-F. Assy.	—20801	Shakeproof Washer—P. B. Mtg. (2 Req.)	
8	G3 —34002	Condenser .0005 Mf. Mica	—6097	No. 8—32 x 1/4" Screw—Rear Mtg. to P. B. Assy. (FS-58)	
9	—103132	Condenser—Variable Tuning Gang.	—49766	Dial Face	
10	MG3—49708	Condenser—Dual Shunt Padder Assy.	—49780	Pointer—Dial Hand	
11	G5 —34002	Condenser .00005 Mf. Mica	—49770	Trimount Stud—Dial Face Mtg. (FS-58)	
12	G5 —34002	Condenser .00005 Mf. Mica	—49742	No. 8—32 x 3/4" Screw—Dial Face Mtg. (FS-58)	
13	None		—49665	Bearing—Drive Shaft (Riveted to Chassis)	
14	—47413	Condenser .25 Mf. 160 V.	—49741	Drive Shaft	
15	—45782	Condenser .05 Mf. 120 V.	—28032	Spring—Drive Shaft Retaining	
16	—45780	Condenser .02 Mf. 160 V.	G11 —41582	Drive Cord	
17	G2 —34002	Condenser .0001 Mf. Mica	—51752	Spring—Drive Cord Tension	
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.	AD	Cabinet—Wood Table	
19	—50084	Condenser .003 Mf. 160 V.	—130174	Cabinet Back—AD Cabinet	
20	—50084	Condenser .003 Mf. 160 V.	S —8	Wood Screws—Back Mtg. (10 Req.) (FS-18)	
21	G3 —34002	Condenser .0005 Mf. Mica	—130307	Felt Pad (Mtg. Screw Cover)	
22	—45780	Condenser .02 Mf. 160 V.	—13001	Shipping Carton	
23	None		—48953	Knob—Tuning and Volume Control	
24	—23191	Condenser .01 Mf. 400 V.	—41742	Spring—Knob Insert	
25	—23191	Condenser .01 Mf. 400 V.	—49940	Push Button only (5 Req.)	
26	None		—49970	Station Call Letter Tab Set	
27	—36322	Resistor, 500,000 Ohms 1/4 W.	—130017	Light Deflector Felt	
28	—36760	Resistor, 20,000 Ohms 1/4 W.	—49917	Escutcheon—Call Letter Tab	
29	None		—130078	Escutcheon and Dial Lens Complete	
30	None		—48900	No. 8—32 x 3/4" Screw—Chassis Mtg. (3 Req.)	
31	—36688	Resistor, 3 Megohms 1/4 W.	—45020	Flat Washer—Chassis Mtg. (3 Req.)	
32	None		—49947A	Instruction Book	
33	—35928	Resistor, 60,000 Ohms 1/4 W.	MG31—49799	Instructions, Call Tabs, Etc., Envelope Assy.	
34	—48693	Resistor, 11 Megohms 1/4 W.	—49878	Hole Plug (1 Req.) J-12 only (FS-58)	
35	—36322	Resistor, 500,000 Ohms 1/4 W.	—130126	Hole Cover (1 Req.) J-12 only	
36	—47512	Resistor, 140 Ohms 3/4 W.	—130127	Switch Hole Cover (1 Req.) J-12 only	
37	—36322	Resistor, 500,000 Ohms 1/4 W.	—130210	1/4" Hole Plug (2 Req.) J-12 only (FS-58)	
38	None		MG17—130115	Bottom Assy.—J-12 only	
39	None		—130130	Insulator—Bottom Cover	
40	None		—49770	Trimount Stud—Bottom Cover (7 Req.) (FS-58)	
41	G1 —49698	Speaker			
	G3 —49698	Speaker—J Model only			
42	None				
43	—49779	Tone Control (1/2 Meg.) and Switch			
44	—49774	Volume Control (1 Meg.) and Switch			
45	G193—34002	Wave Trap			
	—45979	Wave Trap Trimmer Condenser			
46	MG9—49709	Push Button Condenser Assy. only			
	—49764	Push Button Switch Assy. only			
47	MG8—49709	Push Button Condenser & Switch Assy.			
	—49735A	Push Button "Ant." Padder (540-1,000 Kc.)			
	—49734A	Push Button "Osc." Padder (540-1,000 Kc.)			
	—49734A	Push Button "Ant." Padder (600-1,150 Kc.)			
	—49733	Push Button "Osc." Padder (600-1,150 Kc.)			
	—49733	Push Button "Ant." Padder (800-1,400 Kc.)			

**1.—Aligning I-F To 455 Kc.**

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum. On models 14 and J-14 turn tone control switch to right (treble). Turn band switch to the B. C. (left) position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two trimmer condensers on top of 2nd I-F assembly (Fig. 3) for maximum output.

(e) Adjust the two trimmer condensers on top of the 1st I-F assembly (Fig. 3) for maximum output.

(f) Repeat (d) and (e) for more accurate adjustments.

**2.—Aligning R-F Amplifier.**

The short wave band 6-15 mc., must be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 3, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 3, for maximum output.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0001 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 on the dial, and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM

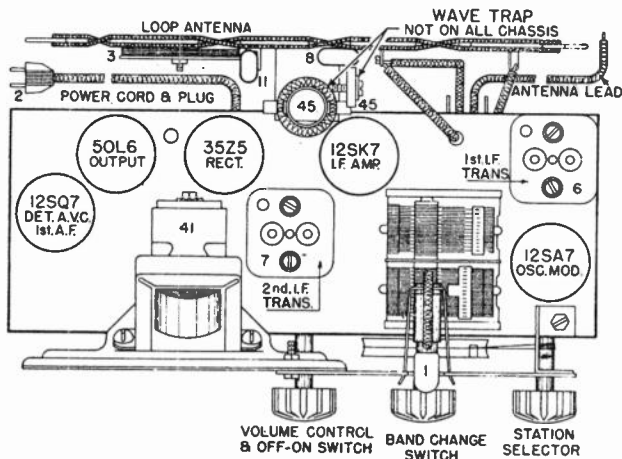


Fig. 3—Top View Model 13

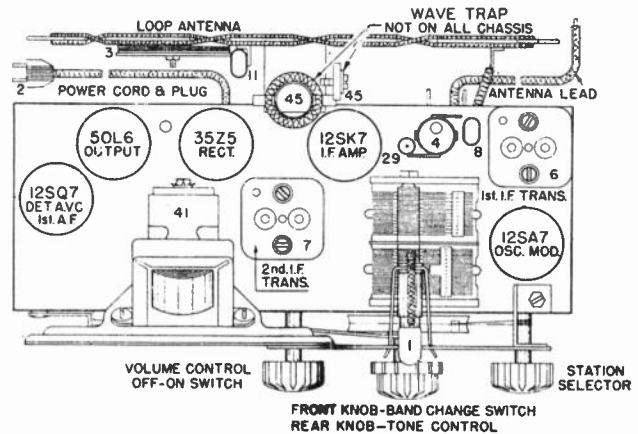
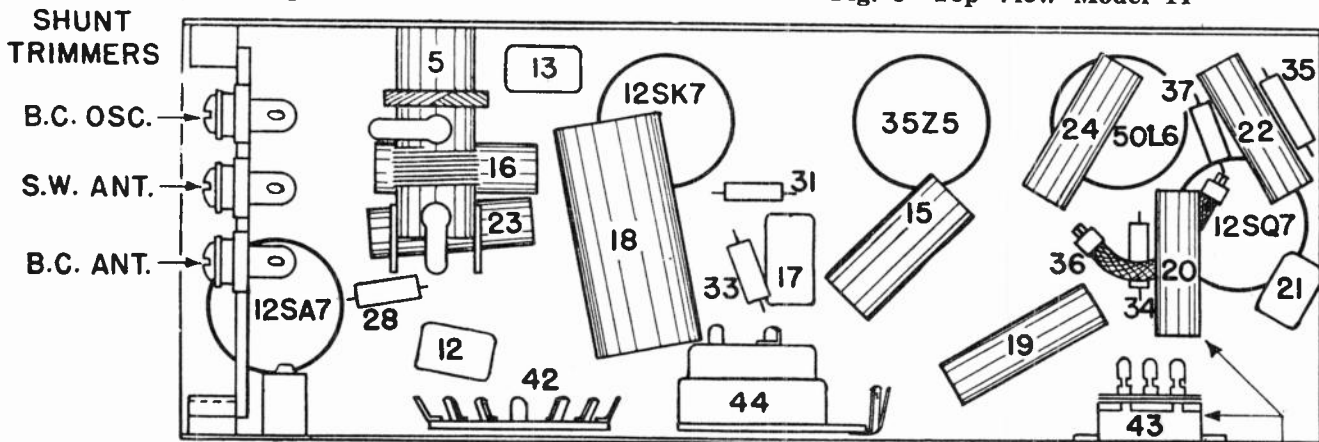
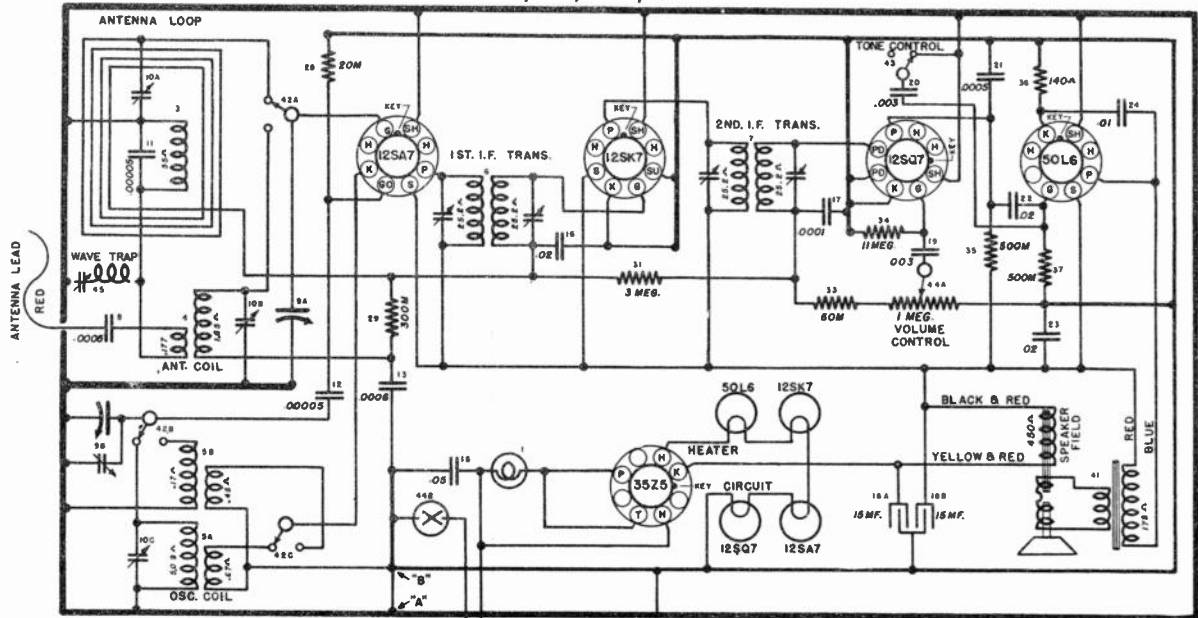


Fig. 3—Top View Model 14



MODELS 13, 14, J13, J14



MODEL -- 13 - & 14, J13 & J14

TUBES MAY BE METAL OR GT TYPES

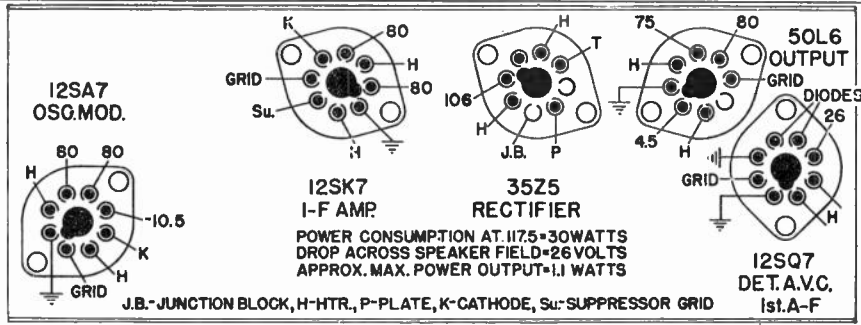
455 KC. I.F.

TO MAKE UNDERWRITERS APPROVED MODELS REMOVE CONNECTION BETWEEN "A" & "B" AND REPLACE WITH .25MF. 160V. CONDENSER W-47413



ON ALL U.L. APPR. MODELS ONLY INCORPORATE SHELL HOOKUP ON 12SK7 TUBE AS INDICATED

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt		MG8—49711	Toggle Arm—On B.S. Shaft (14 and J-14)
2	—49636	Socket Assy.—Dial Light		—49829	Spring—Toggle Arm Retaining
3	G1—32008	Power Cord and P ug		—18200	Trimount Stud—Link Guide (14 and J-14) (FS-58)
4	G221—32000	Loop Antenna		—49770	Trimount Stud—Link and Arm Connector (14 and J-14) (FS-58)
5	G230—32002	Antenna Coil—6-15 Mc. Dual Oscillator Coil A—550 to 1,600 Kc. Coil B—6.0 to 15.0 Mc. Coil	44	—49774	Volume Control (1 Meg.) and Line Sw.
6	G240—32004	1st I-F. Assy.—455 Kc.	45	G193—32001	Wave Trap
7	G241—32004	2nd I-F. Assy.—455 Kc.		—47113	Condenser, .25 Mf. 160 V.—Models J-13 and J-14
8	G3—34002	Condenser, .0005 Mf. Mica		—23191	Condenser, .01 Mf. 400 V.—Models J-13 and J-14
9	—49737	Condenser—Variable Tuning Gang.		—36322	Resistor, 500,000 Ohms—Models J-13 and J-14
10	—49722	Condenser—3 Section Shunt Trimmer		—48767	Dial Face
11	G5—34002	Condenser, .00005 Mf. Mica		—49727	Bracket—Dial Face Mtg. (R. H.)
12	G5—34002	Condenser, .00005 Mf. Mica		—49741	Drive Shaft (With Pulley)
13	G21—34002	Condenser, .00060 Mf. Mica		—49665	Bearing—Drive Shaft (Riveted to Chassis)
14	None			—28032	Spring—Shaft Retaining
15	—45782	Condenser, .05 Mf. 120 V.		G11—41582	Drive Cord
16	—45780	Condenser, .02 Mf. 160 V.		—51572	Spring—Drive Cord Tension
17	G2—34002	Condenser, .0001 Mf. Mica		—49780	Pointer—Dial Hand
18	—49664	Condenser—Dual Electrolytic A—15 Mf. 140 V. B—15 Mf. 120 V.		—49832	Celluloid Dial Lens (Model 13 and J-13)
19	—50084	Condenser, .0003 Mf. 160 V.		AE	Cabinet—Brown Bakelite—Models 13, J-13
20	—50084	Condenser, .003 Mf. 160 V.—Model 14, J-14		—130097	Back—AE Cabinet
21	G3—34002	Condenser, .0005 Mf. Mica		—48758	Trimount Stud—AE Back Mtg. (4) (FS-18)
22	—45780	Condenser, .02 Mf. 160 V.		—49971	Shipping Carton—AE Cabinet
23	—45780	Condenser, .02 Mf. 160 V.		—46953	Knob—Tuning and Volume Control
24	—23191	Condenser, .01 Mf. 400 V.			—AE Cabinet
25	None			MG17—130115	Bottom Cover Assy.—Models J-13, J-14
26	None			—130127	Switch Hole Cover—Models J-13, J-14
27	None			—130130	Bottom Cover (Insulator) Models J-13, J-14
28	—36760	Resistor, 20,000 Ohms 1/4 W.		—49878	Hole Plug—Models J-13, J-14 (FS-58)
29	—35601	Resistor, 300,000 Ohms 1/4 W.		AG	Cabinet—Wood—Models 14, J-14
30	None			—130175	Back—AG Cabinet
31	—36888	Resistor, 3 Megohms 1/2 W.		—80	Screw—AG Back Mtg. (10) (FS-18)
32	None			—130025	Shipping Carton—AG Cabinet
33	—35928	Resistor, 60,000 Ohms 1/4 W.		—46953	Knob—Tuning—Band Switch—Volume Control
34	—48693	Resistor, 11 Megohms 1/4 W.		—41742	Spring—46953 Knob Insert
35	—36322	Resistor, 500,000 Ohms 1/4 W.		—49872	Knob—(Tail) Tone Control
36	—47512	Resistor, 140 Ohms 1/4 W.		—130078	Escutcheon and Lens—AG Cabinet
37	—36322	Resistor, 500,000 Ohms 1/4 W.		—49770	Trimount Stud—Bottom Cover Mtg. (7)
38	None			—49948A	Instruction Booklet—Models 13, J-13
39	None			—49949A	Instruction Booklet—Models 14, J-14
40	None			—49284	Short Wave Station Chart
41	G1—49689	Speaker (13 and 14)			
42	G3—49689	Speaker (J-13 and J-14)			
43	—49808	Band Change Switch			
	—46159	Tone Switch—Model 14, J-14 only			
	—49729	Toggle Link—Model 14, J-14 only			



**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers located through front chassis flange below the speaker (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 6, located on top of 1st I-F assy., (Fig. 2) for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

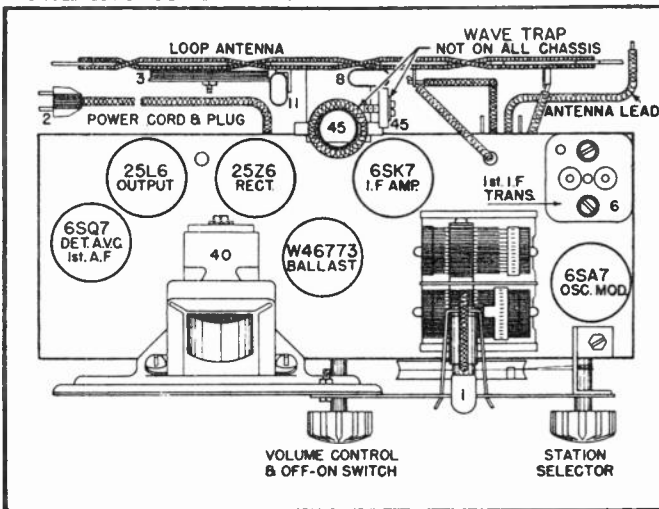


Fig. 2—Top View Model 15 or J-15

**Aligning The R-F Amplifier.**

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the loop mounting bracket (Fig. 2) and consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 45).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

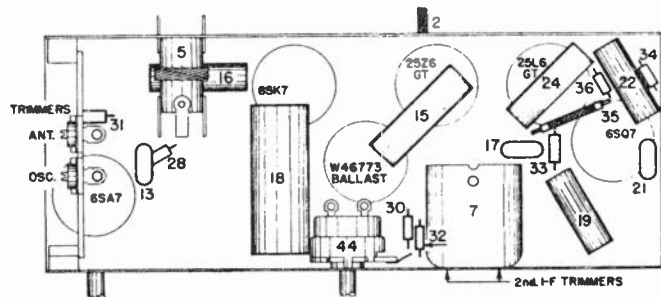
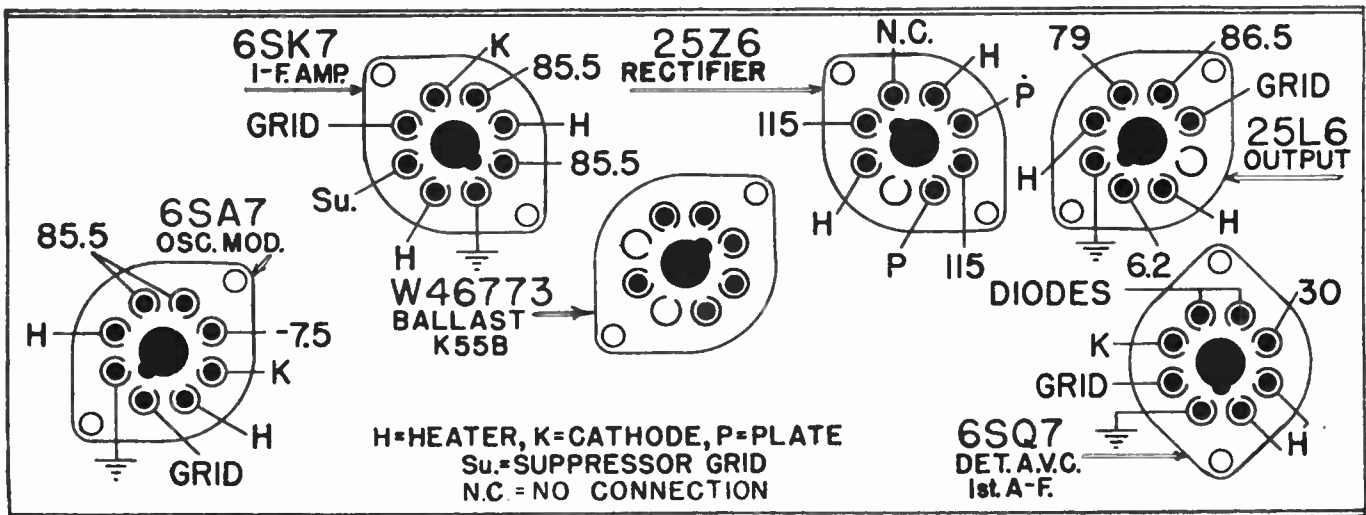
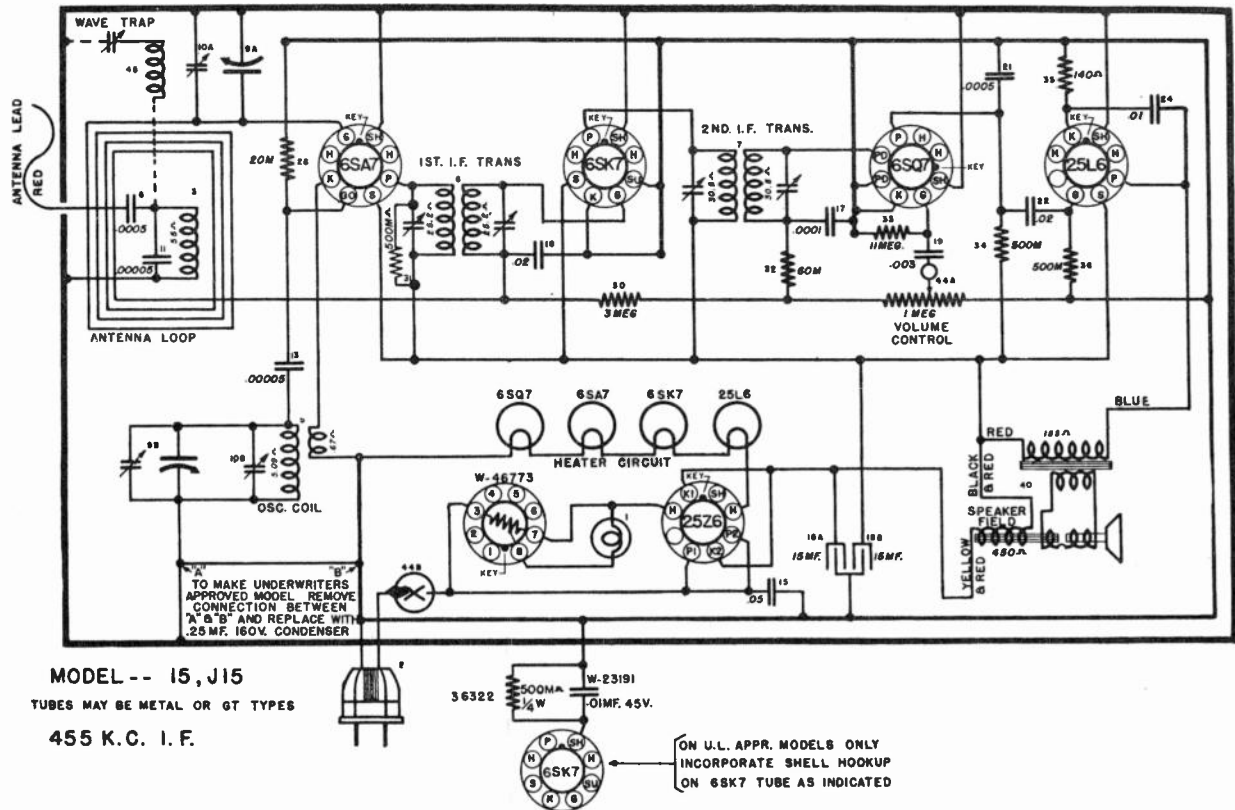


Fig. 3—Bottom View Model 15 or J-15





MODELS 15, J15



MODEL -- 15, J15

TUBES MAY BE METAL OR GT TYPES

455 K. C. I. F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	43	None	
	G1 —49637	Socket Assy.—Dial Light	44	—49774	Volume Control and Line Switch
2	—49775	Power Cord and Plug	45	G193—32004	Wave Trap
3	G1 —32008	Loop Antenna		—45979	Variable Condenser—Wave Trap
	—49739	Bracket—Loop Mtg.		—49766	Dial Face
	—20989	Fibre Washer—Loop Mtg.		—49727	Bracket—R. H. Dial Face Mtg.
	—43611	No. 8—32 x 1/4" Screw—Loop Mtg. (FS-58)		—49742	No. 8—32 x 1/4" Screw—L. H. Dial Face Mtg.
4	None			—49770	Trimount Stud—R. H. Dial Face Mtg. (FS-58)
5	G229—32002	Oscillator Coil		—49780	Pointer—Dial Hand
6	G240—32004	1st I-F. Transformer Assy.		—49665	Bearing—Drive Shaft—Riveted to Chassis
7	G242—32004	2nd I-F. Transformer Assy.		—28032	Spring—Drive Shaft Retaining
8	G3 —34002	Condenser, .0005 Mf. Mica		—49741	Drive Shaft
9	—49737	Condenser—2 Section Var. Tun. Gang		G11 —41582	Drive Cord
10	MG3—49708	Condenser—Dual Shunt Trimmer Assy.		—51752	Spring—Drive Cord Tension
11	G5 —34002	Condenser, .0005 Mf. Mica		—45580	Rubber Grommet—Cond. Gang Mtg.
12	None			—45620	Headed Bushing—Cond. Gang Mtg.
13	G5 —34002	Condenser, .00005 Mf. Mica		O —8	No. 8 Flat Washer—Cond. Gang Mtg. (FS-58)
14	None			—130166	No. 8—32 x 1/4" Screw—Cond. Gang Mtg.
15	—45782	Condenser, .05 Mf. 120 V. A. C.		AI	Cabinet—(Ivory Plaston)
16	—45780	Condenser, .02 Mf. 160 V.		—130098	Back—For AI Cabinet
17	G2 —34002	Condenser, .0001 Mf. Mica		—48758	Trimount Stud—Back Mtg. (FS-58)
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V. Condenser, .003 Mf. 160 V.		—49971	Shipping Carton
19	—50084			—130255	Knob—Volume and Tuning
20	None			—41742	Spring—Knob Insert
21	G3 —34002	Condenser, .0005 Mf. Mica		—49832	Lens—Dial Window (Celluloid)
22	—45780	Condenser, .02 Mf. 160 V.		—49770	Trimount Stud—Lens Mtg. (7 Req.)
23	None			—45020	Flat Washer (Chassis Mtg.) (FS-58)
24	—23191	Condenser, .01 Mf. 400 V.		—130490	No. 8—32 x 1/4" Screw (Chassis Mtg.) (FS-58)
25	None			—130307	Felt Pad—Mtg. Screw Cover
26	—50671	Resistor, 15 Megohms 1/4 W.*		MG17—130115	Bottom Cover Assy. (Chassis)—Model J-15
27	None			—130130	Bottom Cover only—Model J-15
28	—35760	Resistor, 20,000 Ohms 1/4 W.		—47413	Condenser, .25 Mf. 160 V.—Model J-15
29	None			—23191	Condenser, .01 Mf. 400 V.—Model J-15
30	—36688	Resistor, 3 Megohms 1/4 W.		—36322	Resistor, 500,000 Ohms 1/4 W.—Model J-15
31	—36322	Resistor, 500,000 Ohms 1/4 W.		—49878	Hole Plug—Model J-15 (FS-58)
32	—35928	Resistor, 60,000 Ohms 1/4 W.		—130210	1/2" Hole Plug—Model J-15 (FS-58)
33	—48693	Resistor, 11 Megohms 1/4 W.		—130127	Switch Hole Insulator—Model J-15
34	—36322	Resistor, 500,000 Ohms 1/4 W.			
35	—47512	Resistor, 140 Ohms 3/4 W.			
36	—36322	Resistor, 500,000 Ohms 1/4 W.			
37	None				
38	None				
39	None				
40	G1 —49698	Speaker and Output Trans.—Model 15			
41	G3 —49698	Spkr. and Output Trans.—Model J-15			
42	None				
	None				

\* Item 26, a 15 megohm resistor added. Connected from the junction of item 30, (a 3 megohm resistor) and the grid return of the 1st I-F assembly to the No. 5 pin of the 6SA7. Incorporated to reduce the possibility of oscillation due to certain characteristics of the 6SA7 tube.

**Tuning I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.
- (b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust the 2nd I-F trimmer condensers (Fig. 3) for maximum reading on the output meter.
- (e) Adjust the 1st I-F trimmer condensers for maximum output.
- (f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

**Aligning The R-F Amplifier.**

- (a) Pre-align the trimmer on the "OSC" section of the gang condenser 1/2 turn from the closed position. Check pointer travel, must start on index line with gang closed.

- (b) Using a .0001 mf. (100 mmf.) condenser as dummy antenna, connected to antenna lead (Blue or Red), open gang condenser all the way (minimum position) volume control to maximum. Depress manual push button.
- (c) Set signal generator to 1650 kilocycles.
- (d) Adjust "OSC" shunt trimmer for maximum output, rear trimmer on right end of chassis.
- (e) Set signal generator to 1400 kilocycles.
- (f) Tune-in 1400 kc. generator signal with manual tuning knob.
- (g) Adjust "ANT" shunt trimmer for maximum output (front trimmer on right end of chassis).

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 100 mmf. condenser into the antenna terminal of the receiver. With the gang condensed open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

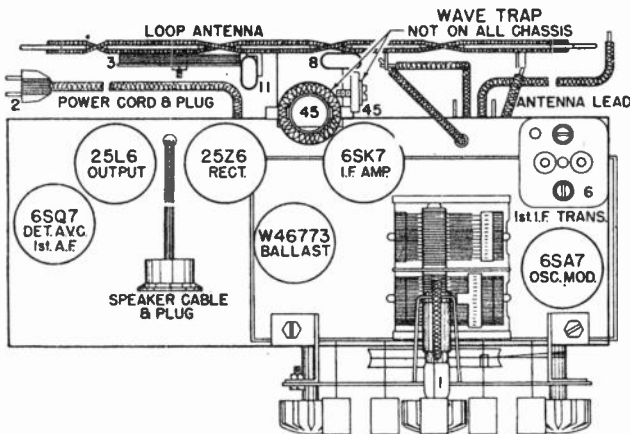


Fig. 2—Top View Model 16, J-16

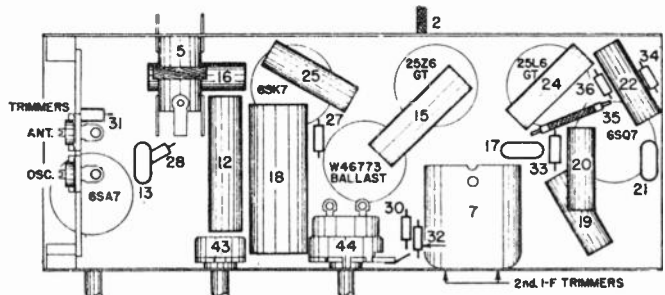
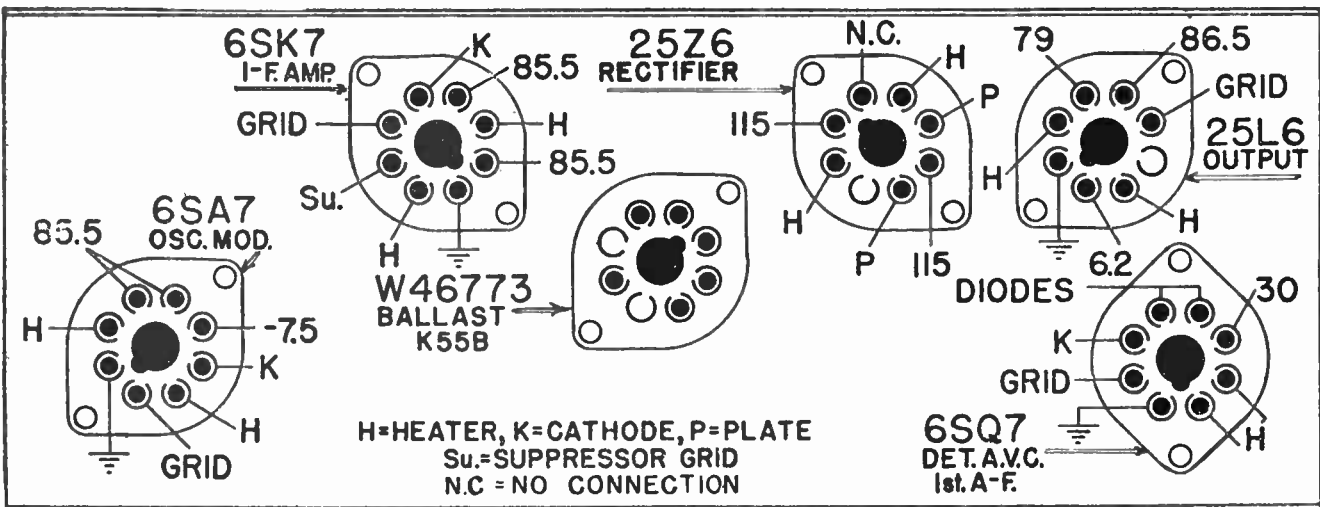
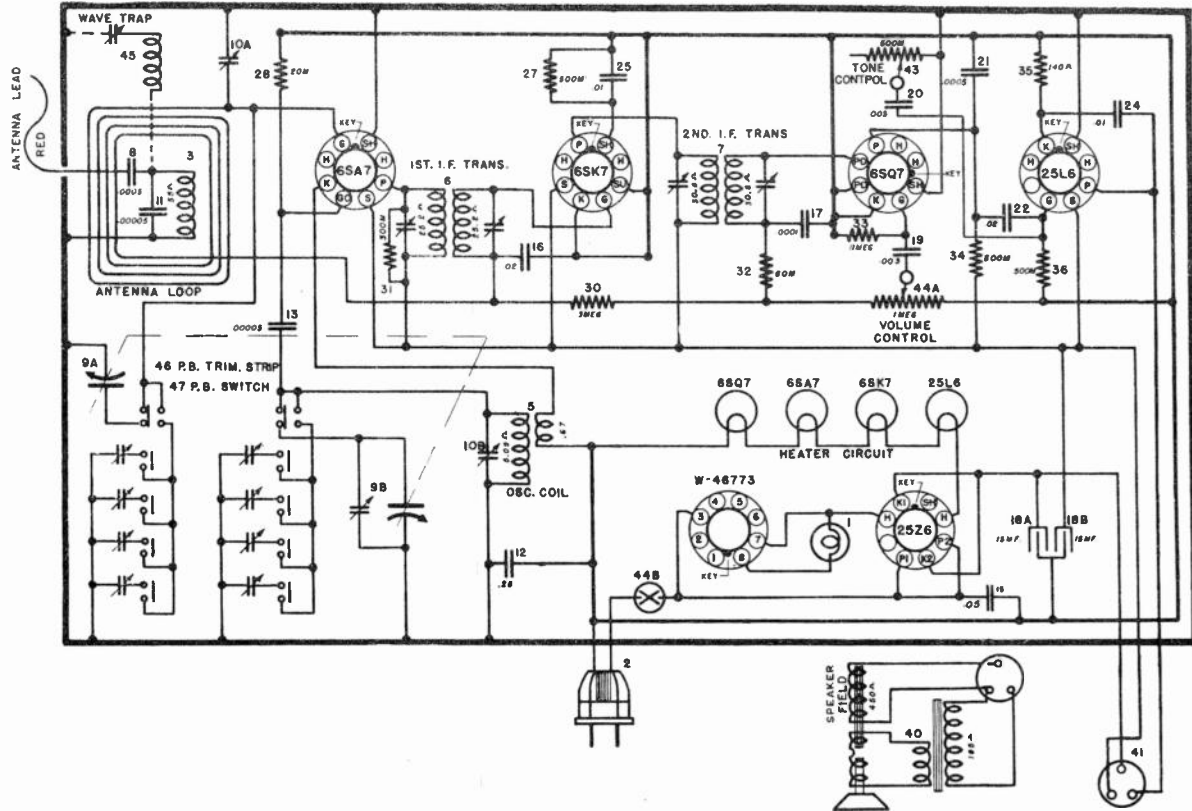


Fig. 3—Bottom View Model 16, J-16





Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	-48858	Dial Light—6.3 Volt		-49732	P. B. "Osc." Padder Condenser (800-1,400 Kc.)
	G3 -49637	Socket Assy.—Dial Light		-49732	P. B. "Ant." Padder Condenser (1,000-1,650 Kc.)
2	-49775	Power Cord and Plug		-49732	P. B. "Osc." Padder Condenser (1,000-1,650 Kc.)
3	G1 -32008	Loop Antenna (Complete)		-49769	Bracket—For Mounting Padders
	-49739	Bracket—Loop Antenna Mtg. (FS-58)		-49764	P. B. Switch only (No Buttons)
	-20589	Fibre Washer—Loop Mtg.		-49731	Bracket—P. B. Unit Rear Mtg. (FS-8)
	-43611	No. 8—32 x 1/4" Screw Loop Mtg. (FS-58)		-49771	Bracket—P. B. Unit Front Mtg. (FS-8)
4	None			-49727	Bracket—Dial and P. B. R. Front Mtg. (FS-8)
5	G229-32002	Oscillator Coil		-49899	Rubber Grommet—P. B. Unit Mtg.
6	G240-32004	1st I-F. Transformer		-46460	Headed Bushing—P. B. Unit Mtg.
7	G242-32004	2nd I-F. Transformer		-49786A	Dial Face
8	G3 -34002	Condenser, .0005 Mf. Mica		-49770	Trimount Stud—Dial Face Mtg. (2 Req.) (FS-58)
9	-130132	Condenser—2 Section Var. Tun. Gang		-49780	Pointer—Dial Hand
10	MG3-49708	Condenser—Dual Shunt Padder Assy.		-49665	Bearing—Drive Shaft (Riveted to Chassis)
11	G5 -34002	Condenser, .00005 Mf. Mica		-49741	Drive Shaft
12	-47413	Condenser, .25 Mf. 160 V.		-28032	Spring—Drive Shaft Retaining
13	G5 -34002	Condenser, .00005 Mf. Mica		G11 -41582	Drive Cord
14	None			-51752	Spring—Drive Cord Tension
15	-45782	Condenser, .05 Mf. 120 V. (A. C.)		-45580	Rubber Grommet—Gang Mtg. (3 Req.)
16	-45780	Condenser, .02 Mf. 160 V.		O -45620	Headed Bushing—Gang Mtg. (3 Req.)
17	G2 -34002	Condenser, .001 Mf. Mica		-8	Flat Washer—Gang Mtg. (3 Req.) (FS-58)
18	-49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.		-130166	No. 8—32 x 1/4" Screw—Gang Mtg. (3 Req.) (FS-58)
19	-50084	Condenser, .003 Mf. 160 V.		-49674	8 Prong Tube Socket
20	-50084	Condenser, .003 Mf. 160 V.		-49683	Tube Socket Insulator
21	G3 -34002	Condenser, .0005 Mf. Mica		-45738	Lock Plate—Power Cord
22	-45780	Condenser, .02 Mf. 160 V.		AL	Cabinet—Wood
23	None			S -130177	Back—For Al. Cabinet
24	-23191	Condenser, .01 Mf. 400 V.		-80	No. 4 x 3/4" Wood Screw—Back Mtg. (FS-18)
25	-23191	Condenser, .01 Mf. 400 V.		-130034	Shipping Carton
26	-50671	Resistor, 15 Megohm 1/4 W.		-46953	Knob—Volume—Tone—Tuning
27	-36322	Resistor, 500,000 Ohms 1/4 W.		-41742	Spring—Knob Insert
28	-36760	Resistor, 20,000 Ohms 1/4 W.		-49840	Push Button (5 Req.)
29	None			-130078	Escutcheon and Lens—Dial Window
30	-36688	Resistor, 3 Megohms 1/4 W.		-49117	Escutcheon—Call Letter Tab
31	-36322	Resistor, 500,000 Ohms 1/4 W.		-130017	Light Deflector Felt
32	-35928	Resistor, 60,000 Ohms 1/4 W.		-49970	Station Call Letter Tab Sheets
33	-46693	Resistor, 11 Megohms 1/4 W.		-19951	Instruction Booklet
34	-36322	Resistor, 500,000 Ohms 1/4 W.		MG31-49843	Envelope Assy.—Instructions and Call Letters
35	-47512	Resistor, 140 Ohms 3/4 W.		-130190	No. 8—32 x 3/4" Screw—Chassis Mtg. (3 Req.) (FS-58)
36	-36322	Resistor, 500,000 Ohms 1/4 W.		-45020	Flat Washer—Chassis Mtg. (3 Req.) (FS-58)
37	None			-130307	Felt Pad Mtg. Screw Cover
38	None			MG17-130115	Bottom Cover Assy. Model J-16 only
39	None			-49770	Trimount Studs—Bottom Cover Mtg. (7 Req.)
40	G2 -49792	Speaker and Output Transformer		-130130	Bottom Cover (Insulator)*
41	-49797	Cable and Plug—Speaker		-130126	Hole Plug—Model J-16 (FS-58)
42	None			-130210	1/2" Hole Plug—Model J-16 (FS-5F)
43	-49779	Tone Control (1/2 Meg.)		-130127	Switch Hole Cover—Model J-16
44	-49774	Volume Control (1 Meg.) and Switch		G1 -49792	Speaker and Plug—Model J-16
45	G193-32004	Wave Trap		-130376	Cabinet Protector Cloth
	-45979	Trimmer Cond.—Part of Wave Trap			
46	MG9-49709	Push Button—Tone Control			
	-49735A	P. B. "Ant." Padder Condenser (540-1,000 Kc.)			
	49734A	P. B. "Osc." Padder Condenser (540-1,000 Kc.)			
	-49734A	P. B. "Ant." Padder Condenser (600-1,150 Kc.)			
	-49733	P. B. "Osc." Padder Condenser (600-1,150 Kc.)			
	-49733	P. B. "Ant." Padder Condenser (800-1,400 Kc.)			

\* Item 26, a 15 megohm resistor added. Connected from the junction of item 30, (a 3 megohm resistor) and the grid return of the 1st I-F assembly to the No. 5 pin of the 6SA7. Incorporated to reduce the possibility of oscillation due to certain characteristics of the 6SA7 tube.

**1.—Aligning I-F To 455 Kc.**

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum, turn tone control switch to right (treble). Turn band switch to the B. C. (left) position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two 2nd I-F trimmer condensers located through front chassis flange, below speaker (Fig. 3) for maximum output.

(e) Adjust the two trimmer condensers on top of the first I-F assembly (Fig. 2) for maximum output.

**2.—Aligning R-F Amplifier.**

The short wave band 6-15 mc.. MUST be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).

NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 3, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune-in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 3, for maximum output.

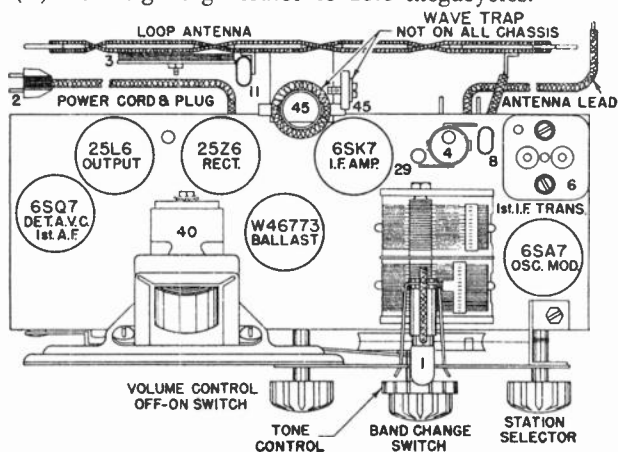


Fig. 2—Top View Model 18, J-18

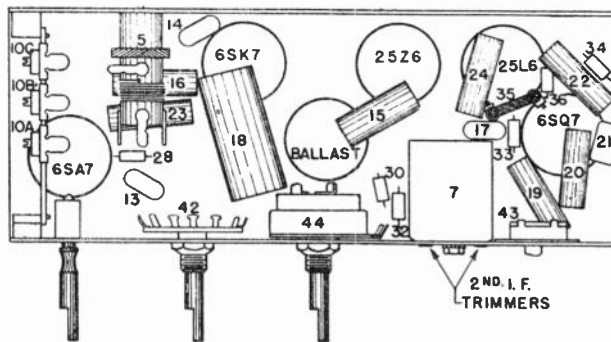
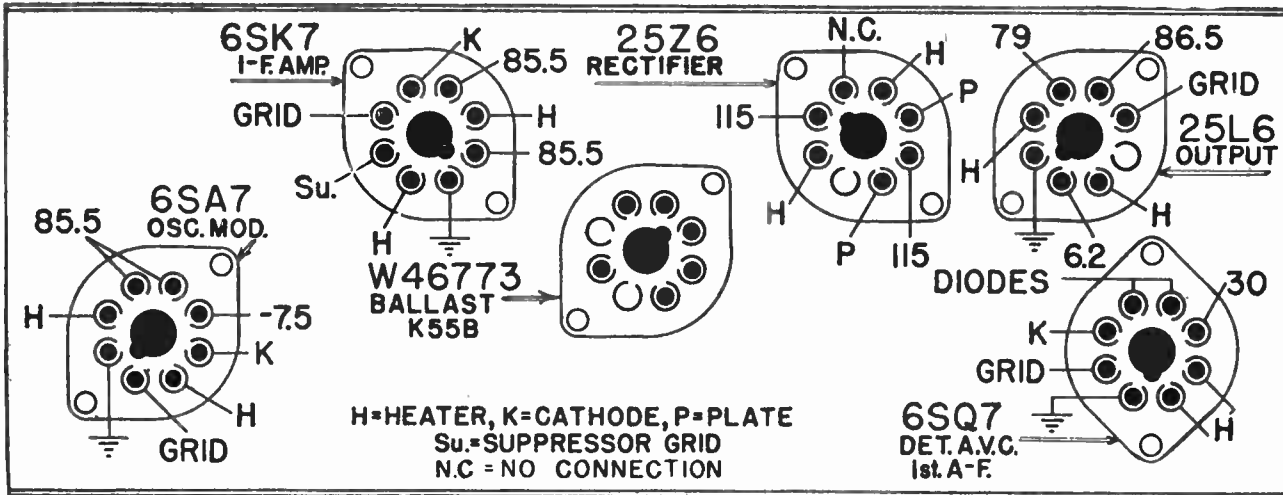
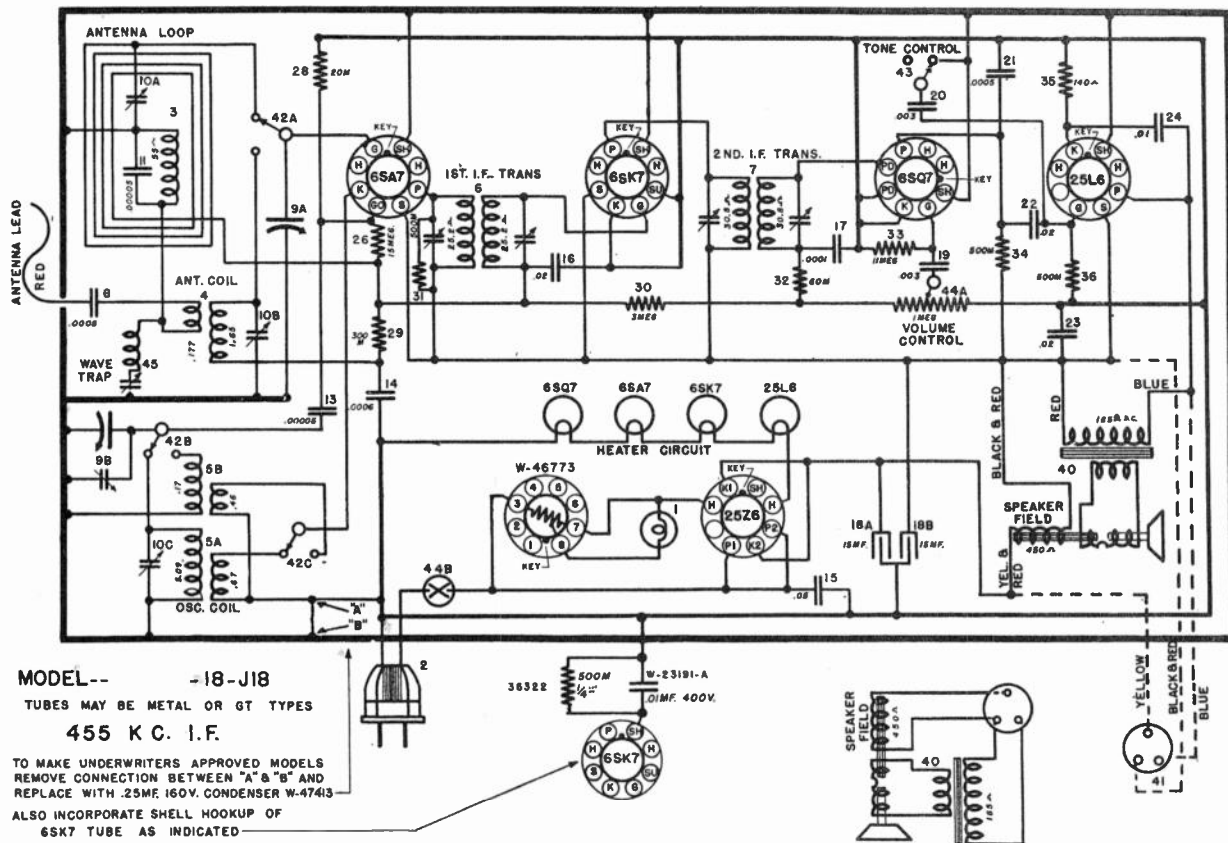


Fig. 3—Bottom View Models 18, J-18





Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light, 6.3 Volt	42	—19808	Band Change Switch
	—49637	Socket Assy.—Dial Light	43	—46159	Switch—Tone Control
2	—49775	Power Cord and Plug	G2	—130261	Toggle Arm—On B. C. S. Shaft
3	—32008	Loop Antenna		—49829	Spring—Toggle Arm Retaining
	—49739	Bracket—Loop Antenna Mtg. (FS-58)		—49729	Toggle Link
	—45808	No. 8 x 3/4" Screws—Loop Brkt Mtg (FS-58)		—48200	Trimount Stud—Toggle Link Guide (FS-58)
	—20989	Fibre Washer—Loop Mtg.		—49770	Trimount Stud—Arm and Link Connector (FS-58)
	—43611	No. 8—32 x 1/4" Screw—Loop Mtg. (FS-58)	44	—19774	Volume Control (1 Meg.) and Switch
4	G221—32000	Antenna Coil—6-15 Mc.	45	G193—32001	Wave Trap
5	G230—32002	Dual Oscillator Coil		—45979	Condenser—Wave Trap Trimmer
		Coil A—B. C.—550-1,600 Kc.		—49767	Dial Face
		Coil B—S. W.—6.0-15.0 Mc.		—19727	Bracket—R. H. Dial Mtg.
6	G240—32004	1st I-F. Transformer—455 Kc.		—19770	Trimount Stud—Dial Mtg. (FS-58)
7	G242—32004	2nd I-F. Transformer—455 Kc.		—49780	Pointer—Dial Hand
8	G3—34002	Condenser, .0005 Mf. Mica		—49665	Bearing—Drive Shaft—Riveted to Chassis
9	—49737	Condenser—2 Section Var. Tun. Gang		—49741	Drive Shaft
10	MG4—49710	Condenser—3 Section Shunt Padder Assy.		—38032	Spring—Hair Pin—Drive Shaft Retaining
11	G5—34002	Condenser, .00005 Mf. Mica	G11	—41582	Drive Cord
12	None			—51752	Spring—Drive Cord Tension
13	G5—34002	Condenser, .00060 Mf. Mica		—45580	Rubber Grommet—Tun. Cond. Mtg.
14	G21—34002	Condenser, .05 Mf. 120 V. A. C.		—45620	Headed Bushing—Tun. Cond. Mtg.
15	—45782	Condenser, .02 Mf. 160 V.	O	—8	Flat Washer—Tun. Cond. Mtg. (FS-58)
16	—45780	Condenser, .001 Mf. Mica		—130166	No. 8—32 x 1/4" Screw—Tun. Cond. Mtg. (FS-58)
17	G2—34002	Condenser—Dual Electrolytic Section A—15 Mf. 140 V.		—49679	Bracket—Speaker Mtg.—Riveted to Chassis
18	—48664	Section B—15 Mf. 120 V.	AN		Cabinet
19	—50084	Condenser, .003 Mf. 160 V.		—130038	Shipping Carton
20	—50084	Condenser, .003 Mf. 160 V.		—130178	Back—AN Cabinet
21	G3—34002	Condenser, .0005 Mf. Mica	S	—80	No. 4 x 3/4" Screw—Back Mtg. (FS-18)
22	—45780	Condenser, .05 Mf. 160 V.		—130078	Escutcheon and Lens—Dial Window
23	—45780	Condenser, .05 Mf. 160 V.		—46953	Knob—Volume and Tuning and Band Change
24	—23191	Condenser, .01 Mf. 400 V.		—41742	Spring—Knob Insert
25	None			—49872	Knob—(Lever Type) Tone Control
26	—50671	Resistor, 15 Megohm 1/4 W. *	MG17	—130115	Bottom Assy.—Model J-18
27	None			—130130	Bottom Cover (Insulator) —J-18
28	—36760	Resistor, 20,000 Ohms 1/4 W.		—49770	Trimount Stud—Bottom Mtg.—J-18 (FS-58)
29	—35601	Resistor, 300,000 Ohms 1/4 W.		—130126	Hole Plug—Model 18
30	—36688	Resistor, 3 Megohms 1/4 W.		—47413	Condenser, .25 Mf. 160 V.—Model J-18
31	—36322	Resistor, 500,000 Ohms 1/4 W.		—23191	Condenser, .01 Mf. 400 V.—Model J-18
32	—35928	Resistor, 60,000 Ohms 1/4 W.		—36322	Resistor, 500,000 Ohms 1/4 W.—Model J-18
33	—48693	Resistor, 11 Megohms 1/4 W.		—49953	Instruction Booklet
34	—36322	Resistor, 500,000 Ohms 1/4 W.		—49284	Short Wave Instructions
35	—47512	Resistor, 140 Ohms 3/4 W.		—130376	Cabinet Portector Cloth
36	—36322	Resistor, 500,000 Ohms 1/4 W.		—130490	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Required)
37	None			—45020	Flat Washer—Chassis Mtg. (3 Req.)
38	None				
39	None				
40	G1—49698	Speaker—Model 18			
	G3—49698	Speaker—Model J-18			
41	None				

\* Item 28, a 15 megohm resistor added. Connected from the junction of item 30, (a 3 megohm resistor) and the 1st I-F transformer assembly grid return to the No. 5 pin of the 6SA7. Incorporated to reduce the possibility of oscillation due to certain characteristics of the 6SA7 tube.

**Tuning I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the antenna lead (Blue). Connect the ground lead from the signal generator to the ground lead (Black) of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).
- (c) Turn the band selector switch to the Broadcast Band. (Left). Push switch on loop ant. to B. C. position.
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.
- (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**Aligning The R-F Circuits.**

- (1) Connect the signal generator output through a 400 ohm carbon resistor to the antenna lead (Blue) of the receiver and the generator return to the ground lead (Black).
- (a) Set signal generator to 15.4 megacycles.
- (b) Open tuning condenser all the way (rotor completely out of mesh) turn band switch to the right, (short wave) and volume on full. On models 21 and 23 turn tone control to treble position.
- (c) Adjust the S. W. "OSC" trimmer, located on gang condenser, for maximum output.
- (d) Set signal generator to 15.0 megacycles.
- (e) Tune-in signal generator frequency with the station selector knob (approximately 15 on the dial) and while slowly rocking the station selector knob adjust the S. W. "ANT." trimmer condenser, center trimmer on right end of chassis, for maximum output.
- (f) Repeat (a) to (e) for more accurate adjustments.
- (2) Change the 400 ohm dummy antenna to a .0002

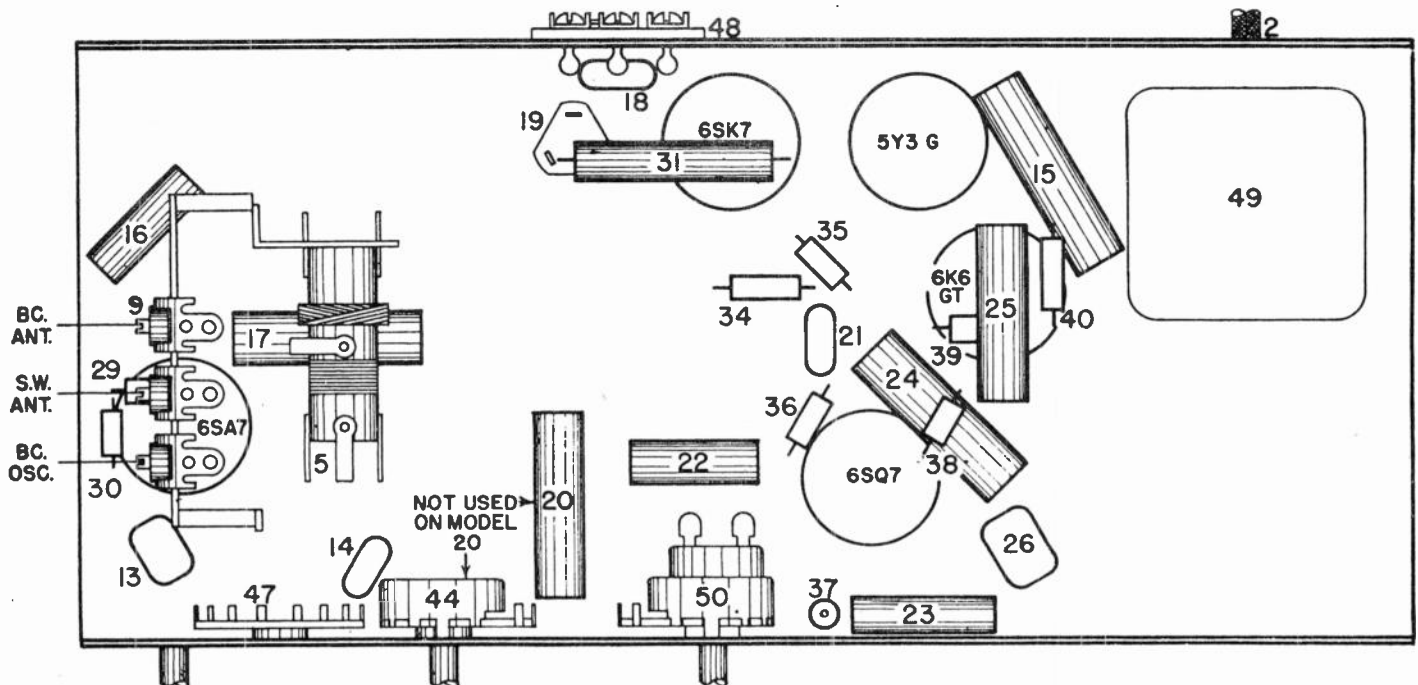
mf. (200 mmf.) condenser. Turn band switch to B. C. position (left), open gang condenser all the way, etc.

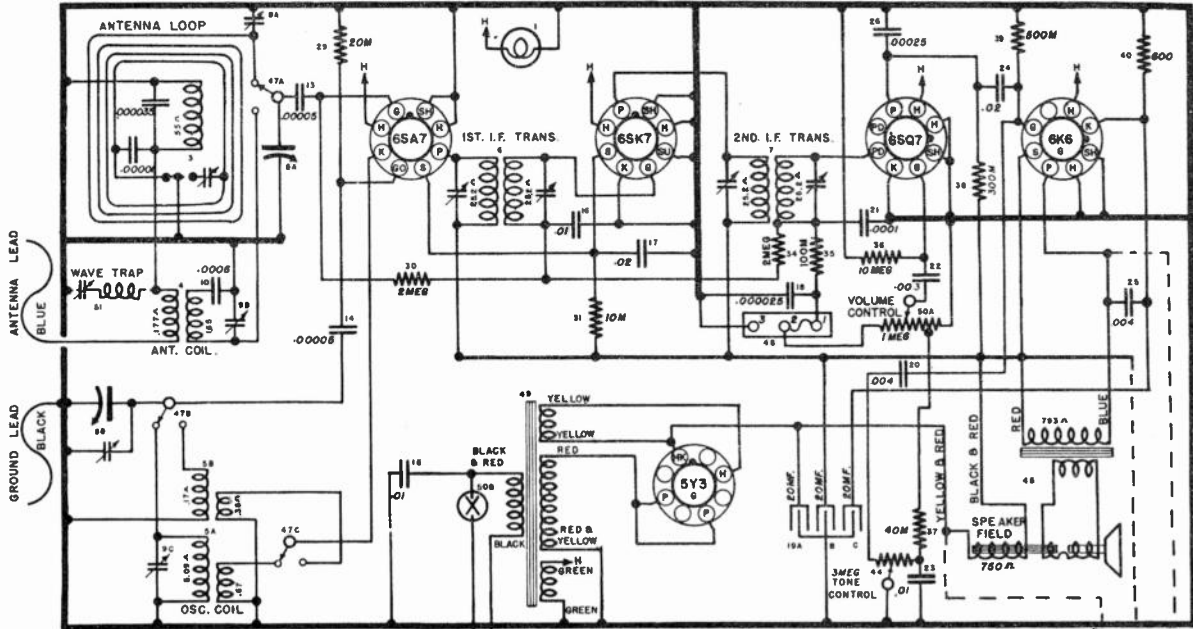
- (a) Set signal generator to 1650 kilocycles.
- (b) Adjust the B. C. "OSC" trimmer for maximum output (front trimmer, right end of chassis).
- (c) Set signal generator to 1400 kilocycles.
- (d) Tune-in 1400 kc. signal with tuning condenser, (should be approximately 14 on the dial), then adjust the B. C. "ANT" trimmer (rear trimmer, right end of chassis) for maximum output.
- (e) Repeat (a) to (d) for more accurate adjustments.
- (3.) Using same dummy antenna (.0001 mf.) align the Special Police Band antenna trimmer (there is no oscillator adjustment for this band).
- (a) Set signal generator to 2.5 kilocycles.
- (b) Push switch on loop antenna to Pol. position and then tune-in the generator signal with gang, approx. 2.5 on the dial.
- (c) Adjust trimmer on loop antenna for maximum output.

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0002 mfd. condenser into the antenna lead of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 in the dial, and the volume control full on, adjust the wave trap trimmer condenser for MINIMUM output.

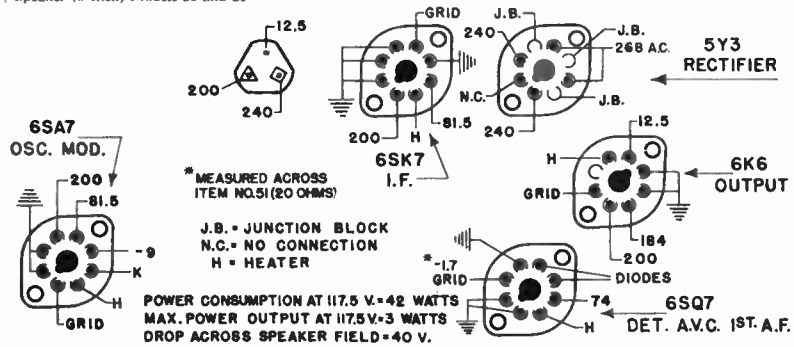




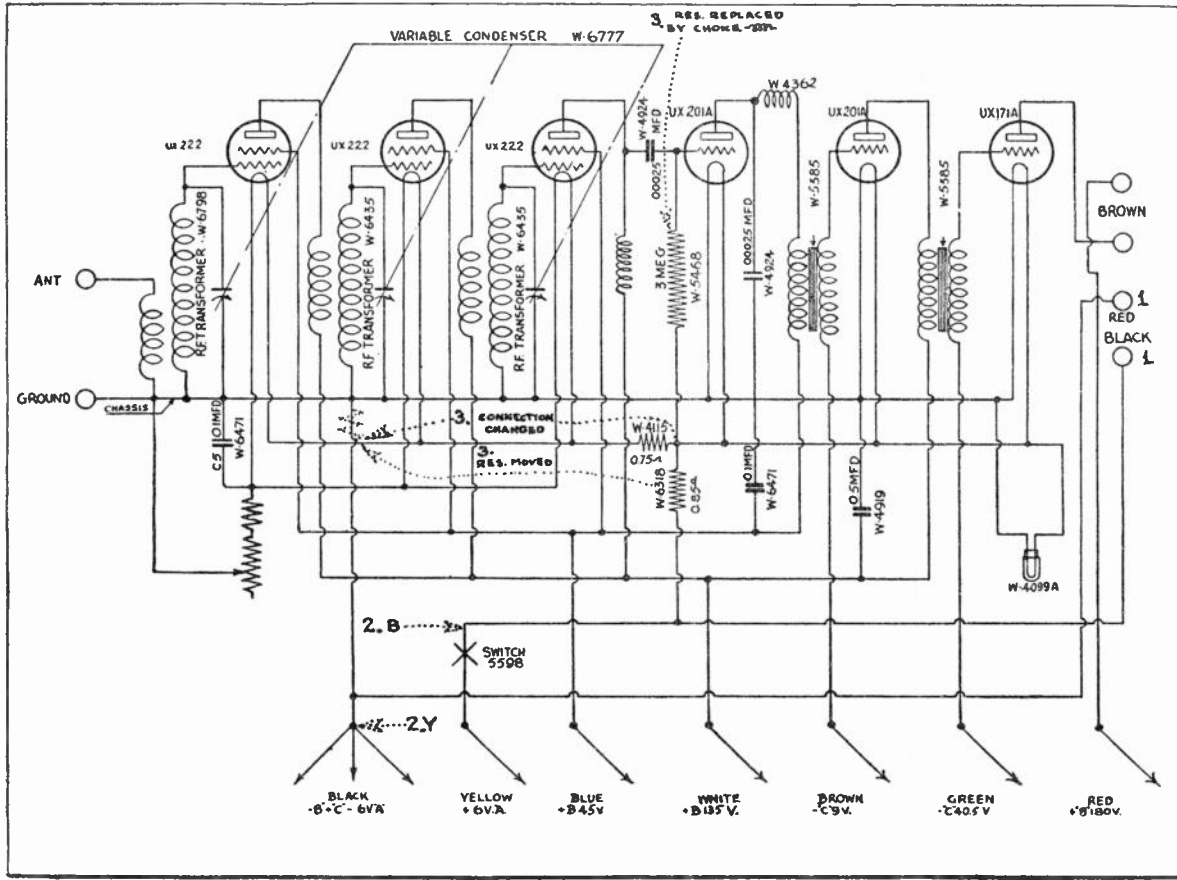
- 1 —43567 Dial Light
- 2 —49637 Socket Assy.—Dial Light—Model 20
- 3 —49637 Socket Assy.—Dial Light—Model 21 and 23
- 4 —45769 Power Cord and Plug
- 5 —32008 Loop Antenna Assy.
- 6 —49810 Bracket—Loop Mfg.
- 7 —130084 Thumb Screw—Loop Mtg.
- 8 —37953 Flat Washer—Loop Mtg.
- 9 —49732 Trimmer Condenser—Ant. Padder
- 10 —46159 B. C.—Pol. Switch—On Loop
- 11 G221—32000 S. W. Antenna Coil
- 12 G271—32002 Dual Oscillator Coil
- 13 A—B. C. Oscillator
- 14 H—S. W. Oscillator
- 15 G240—32004 1st I-F. Assy.—455 Kc.
- 16 G249—32004 2nd I-F. Assy.—455 Kc.
- 17 —49879 2 Section Gang Cond.—Model 20 only
- 18 —130266 Gang Condenser and Push Button Assy.—Models 21 and 23 only
- 19 —49722 3 Section Shunt Trimmer Assy.
- 20 A—B. C. Antenna Trimmer
- 21 B—S. W. Antenna Trimmer
- 22 C—B. C. Oscillator Trimmer
- 23 G21—34002 Condenser, .0006 Mf. Mica
- 24 None
- 25 None
- 26 G5—34002 Condenser, .0005 Mf. Mica
- 27 —31002 Condenser, .01 Mf. 400 V.
- 28 —30805 Condenser, .01 Mf. 160 V.
- 29 —48667 Condenser, .02 Mf. 400 V.
- 30 —30488 Condenser, .00025 Mf. Mica
- 31 G6—34002 Condenser—3 Section Electrolytic
- 32 Section A—20 Mf.—250 V.
- 33 Section B—20 Mf.—250 V.
- 34 Section C—20 Mf.—25 V.
- 35 —28904 Condenser, .004 Mf. 200 V.
- 36 Used on Models 21 and 23 only
- 37 G2—34002 Condenser, .0001 Mf. Mica
- 38 —50084 Condenser, .003 Mf. 160 V.
- 39 —48667 Condenser, .01 Mf. 160 V.
- 40 —30488 Condenser, .02 Mf. 400 V.
- 41 —35139 Condenser, .004 Mf. 400 V.
- 42 G1—34002 Condenser, .00025 Mf. Mica
- 43 None
- 44 None
- 45 —36760 Resistor, 20,000 Ohms 1/4 W.
- 35927 Resistor, 2 Megohms 1/4 W.
- 47100 Resistor, 10,000 Ohms 2W.
- None
- None
- 35927 Resistor, 2 Megohms 1/4 W.
- 35600 Resistor, 100,000 Ohms 1/4 W.
- 50956 Resistor, 10 Megohms 1/4 W.
- 36761 Resistor, 40,000 Ohms 1/4 W.
- 35601 Resistor, 300,000 Ohms 1/4 W.
- 36322 Resistor, 500,000 Ohms 1/4 W.
- 38918 Resistor, 600 Ohms 1/2 W.
- None
- None
- None
- 130263 3 Meg. Tone Control—Models 21 and 23 only
- G3 —49729 Speaker (6 Inch) Models 20 and 21

MODEL ---20-21-23  
455 KC. I.F.

- 45580 Grommet—Gang and Speaker Mtg.
- 45620 Headed Bushing—Gang Mtg.—Model 20
- G2 —130145 Speaker—8 Inch—Model 23
- 45580 Rubber Grommet—Spkr. Mtg.
- 49796 Headed Bushing—Spkr. Mtg.
- 2309 Flat Washer—Spkr. Mtg. (FS-58)
- 49927 Spkr. Cable and Plug—Model 23 only
- 49809 Band Change Sw.—Model 20 only
- 49849 Band Change Sw.—Models 21 and 23
- G56 —26719 Phono Terminal Board
- 49881 Jumper Strip—Phono Terminals
- 49838 Power Trans.—117.5 Volt—60 Cycle
- 49817 Brace—Power Trans. Mtg.
- 130044 1 Meg. Vol. Cont. & Sw.—Model 20
- 130262 1 Meg. Vol. Cont. & Sw.—Mod. 21 & 23
- G193 —32001 Wave Trap—155 Kc.
- MISCELLANEOUS PARTS
- MODELS 21 AND 23 ONLY
- MG12 —49822 Dial Face Assy.
- GW —130280 Pointer Pulley and Shaft Assy.
- 51709 "C" Washer—Pointer Shaft Retaining
- 130277 Pointer—Dial Hand
- 130393 Trimmount Studs—Dial Face Mtg. (FS-58)
- G11 —41582 Drive Cord—Pointer Shaft (15" Long)
- G41 —11582 Drive Cord—Cond. Gang (18 1/4" Long)
- 130275 Manual Drive Shaft
- 130274 Pulley—Manual Drive Shaft
- 4523 No. 8—32 x 3/8" Headless Set Screw—Drive Shaft Pulley
- G26 —43564 Pulley & Hub Assy.—On Gang (Large)
- MG10 —49822 Bracket Assy.—Tuning Unit Mtg.
- 49762 Wood Pulley—Dr. Cord Idler (1 Req.)
- 46087 Spring—Drive Cord Tension
- 130480 Wood Pulley—Pointer Cord Idler (2 Req.)
- 130481 Pin—Idler Pulley Shaft
- 130479 Spring—Pointer Drive Cord Takeup
- 130472 Ball Bearing—Rocker Bar & Gang Rotor
- 130473 Screw—Rocker Bar & Gang Rotor Bearing
- Cabinet—Model 23
- MISCELLANEOUS PARTS
- MODEL 20 ONLY
- 49878 Hole Plug (3 Req.) (FS-58)
- 49880 Dial Face (Self Supporting)
- 49846 Pointer—Dial Hand
- 49665 Bearing—Dr. Shaft—Staked to Chassis
- 49847 Drive Shaft
- 28032 Spring—Drive Shaft Retaining
- G39 —41582 Drive Cord (23" Long)
- 50607 Spring—Drive Cord Tension
- AP Cabinet
- 130483 Screw—P. B. Station Setting
- 130476 Push Button (5 Req.)
- 130475 Rod—Push Button Mtg.



# MODELS 20, 21, 22



Qty.	Part No.	Description	Qty.	Part No.	Description
<b>CHASSIS ASSEMBLY</b>					
1	D-6437-C	Chassis .....	2	W-3547	Spacer .....
5	W-5538	Socket .....	1	W-4562	Shakeproof Lug .....
1	W-5344	Socket .....	1	W-0818	Terminal Board Assembly (Speaker) .....
1	M-19	.120x3-16 Tubular Rivet ....	1	B-4107-B	Cable .....
2	W-6435	R. F. Transformer Assembly .....	1	W-4681	Grommet (3-8") .....
1	W-6798	R. F. Transformer Assembly .....	1	W-4751-A	Cable Clamp .....
1	W-6084-B	Tube Terminal Assembly ....	1	W-6318	Fixed Resistance (Long) .....
3	W-6436	Shield Assembly .....	2	W-3547	Spacer .....
3	B-6473	Shield Cover .....	1	W-4924	Grid Condenser (.00025MF.) .....
3	W-6474	Shield Cover Nut .....	1	W-4562	Shakeproof Lug .....
1	W-5371	Terminal Board Assembly (A. and G.) .....	1	W-4362	Plate Choke .....
1	W-6254	Volume Control Rheostat .....	1	W-635-C	Spacer .....
1	W-6777	Complete 3 Gang Variable Condenser .....	1	W-5713	Terminal Strip .....
5	W-4681	Grommet (3-8") .....	2	W-5051	Spacer .....
1	B-4879	Frame Cover .....	1	W-5468	Resistance (3 megohms) .....
1	W-4894	6-32 Acorn Nut .....	1	W-5382	Bypass Cond. (.00025 M. F.) .....
1	W-4891	Dial Spdler .....	1	C-5888-B	Bottom .....
1	W-3544	Set Screw .....	6	W-5718-A	Bottom Double Nut .....
1	W-5353	Dial Gear with W-5354-B Indicator .....	6	6819	Eyelet .....
1	W-5354-B	Indicator Only .....	<b>MODEL 21</b>		
1	W-4899	Pinion .....	1	D-6361	Cabinet Shell with four B-6366 Corners Assembled .....
1	W-4907	Pinion Washer .....	4	W-6376	Felt Foot .....
1	W-2326	6-32x5-16 Set Screw .....	1	6374-A	Cabinet Cover .....
1	W-4892	Pinion Stirrup .....	1	W-6328	Escutcheon .....
1	W-4883-C	Dial Light Assembly (without lamp) .....	2	W-6379	Escutcheon Mfg. Screw .....
1	W-4893	Rheostat Bracket .....	1	W-6300	Main Tuning Knob .....
1	5598	Switch .....	2	W-6389	Knob .....
2	W-4534-B	Switch Nut .....	<b>MODEL 22</b>		
2	W-5385	Audio Transformer .....	1	D-6513-A	C24 B Wood Cabinet .....
2	W-5654	Grommet (3-4") .....	4	W-6134-A	Square Head Bolt .....
<b>PARTS UNDER CHASSIS</b>					
2	W-6471	Condenser (.1 M. F. 2 Paper) .....	4	W-6849	Washer .....
2	W-4562	Shakeproof Lug .....	4	W-6260-A	Square Nut .....
1	W-6862	R. F. Choke Assembly .....	1	W-6333	Main Tuning Knob .....
1	W-4476	Spacer .....	1	W-5836	Pinion Shaft .....
1	W-4919	Condenser (.5 M. F. 3 paper) .....	2	W-6332	Knob .....
1	W-4562	Shakeproof Lug .....	2	W-5837	Shaft Extension .....
1	W-4115	Fixed Resistance (Short) ....	2	W-2326	Set Screw .....
			1	W-6328	Escutcheon .....
			1	W-5815	Model 227 Type E Dynacone Speaker .....



# MODEL 22AS

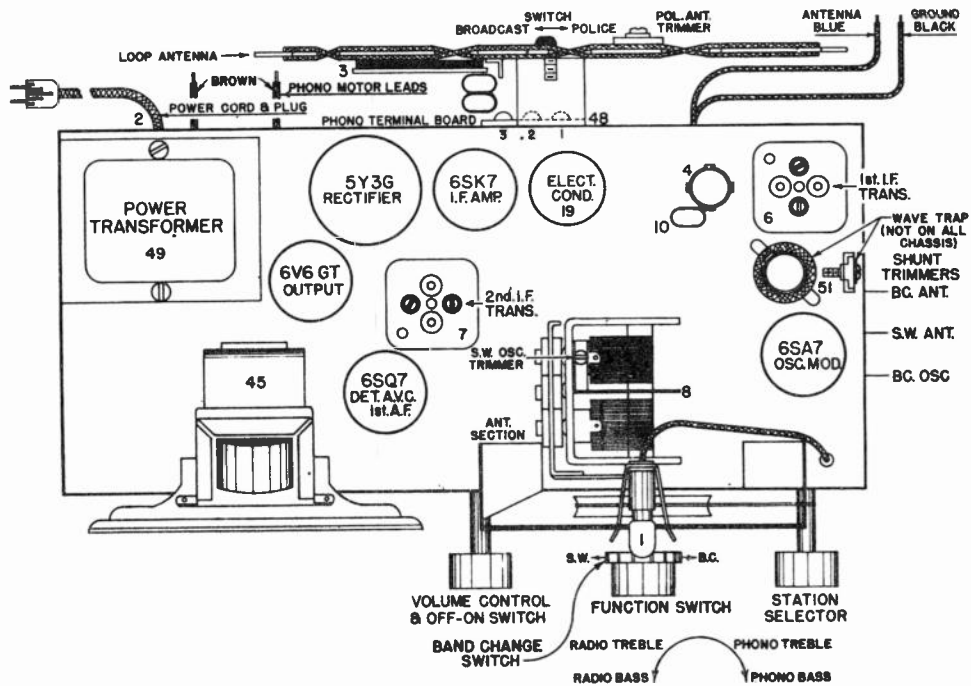
## ALIGNMENT PROCEDURE

### PRELIMINARY

Output Meter Connections.....Plate to Screen of 6V6GT  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol.	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.

Adjust wave trap for minimum output with 455 kc. input.



TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.-Mod. ....	0	0	225	74	0	0	6.3 A.C.	0
6SK7—I. F. Amp.....	0	0	0	0	0	74	6.3 A.C.	225
6SQ7—Det. A.V.C.—1st A.F.....	0	0	0	0	0	100	6.3 A.C.	0
6V6GT—Output .....	0	0	209	225	0	0	6.3 A.C.	10.5
5Y3G—Rectifier .....	0	5.0 A.C.	0	316 A.C.	0	316 A.C.	0	283

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

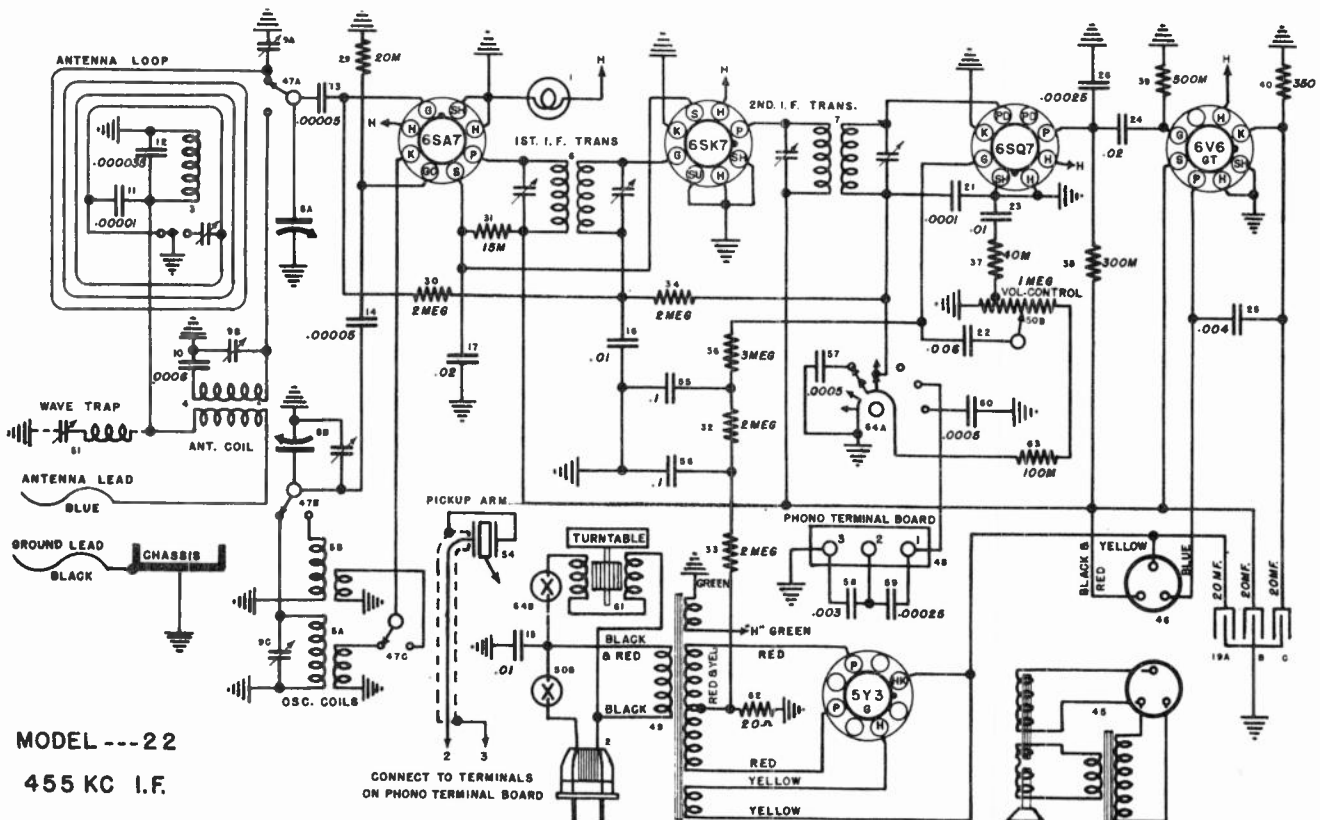
DROP ACROSS SPEAKER FIELD..... 58 Volts  
 MAXIMUM POWER OUTPUT @ 130 V. LINE..... 6.5 Watts  
 MAXIMUM POWER CONSUMPTION @ 130 V. LINE.....\*60 Watts

\*Phono Motor 40 Watts additional.

**PARTS LIST — MODEL 22**

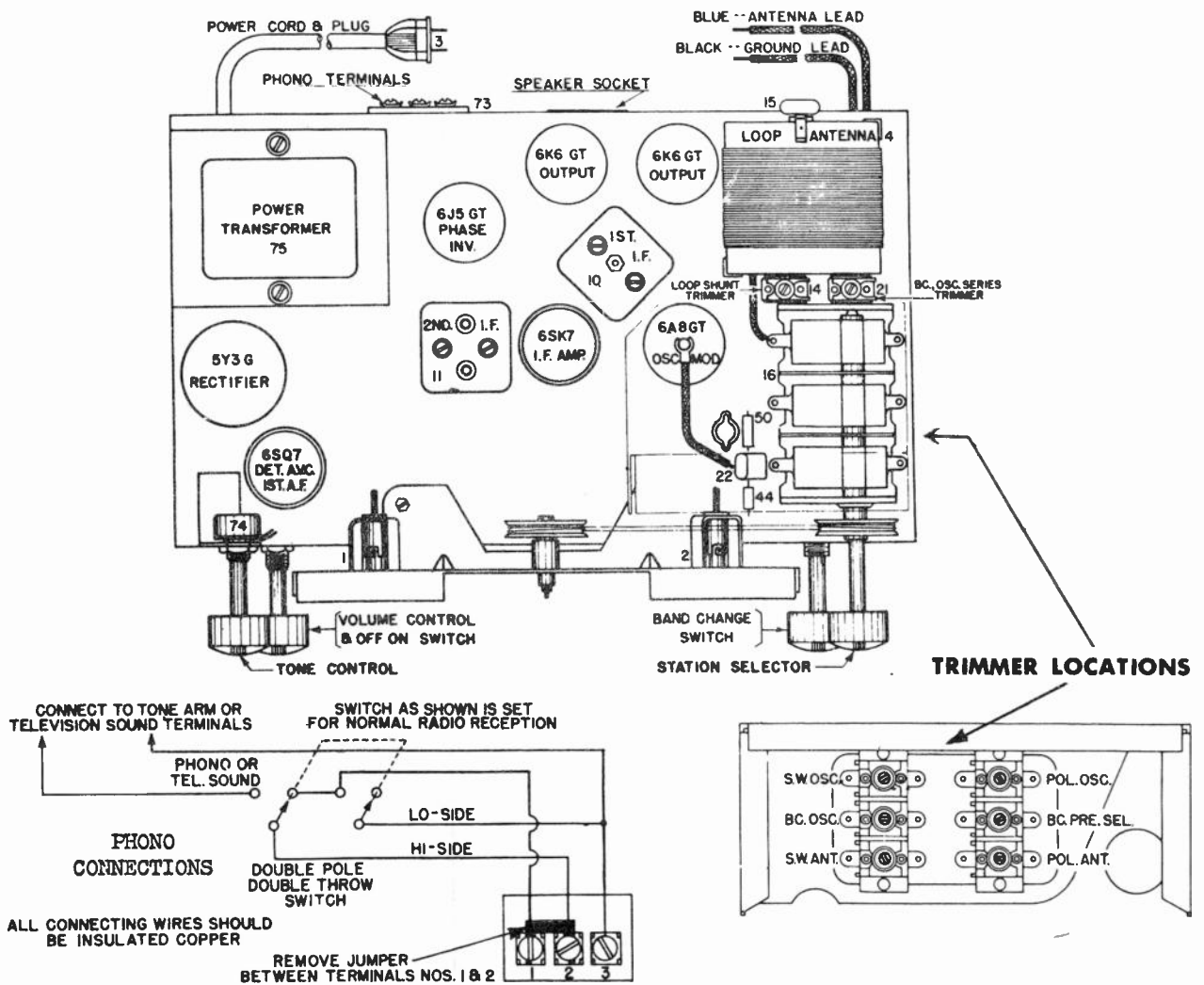
Item	Part No.	DESCRIPTION	Item	Part No.	DESCRIPTION	Item	Part No.	DESCRIPTION
1	43567	Dial Light	29	36760	Resist. 20,000 Ohm ¼ W.	59	G1-34002	Cond. 250 MMF.—Mica
	G9-49637	Socket Assy.—Dial Light	30	35927	Resistor 2 Megohm ¼ W.	60	G3-34002	Cond. 500 MMF.—Mica
2	45769	Power Cord and Plug	31	130593	Resistor 15,000 Ohm 2W.	61	130582	Phono Motor—110V. 60Cy.
3	G4-32008	Loop Antenna Assy.	32	35927	Resistor 2 Megohm ¼ W.		130862	Phono Motor—110V. 60Cy.
	49810	Bracket—Loop Mtg.	33	35927	Resistor 2 Megohm ¼ W.	62	49702	Resistor 20 Ohm ¼ W.
	130084	Thumb Screw—Loop Mtg.	34	35927	Resistor 2 Megohm ¼ W.	63	35600	Resist. 100,000 Ohm ¼ W.
	37953	Flat Washer—Loop Mtg.	35	None		64	130752	T. C.—Phono Radio Sw.
	49732	Trimmer Condenser—	36	36688			130755	Insulator—T. C. Sw.
		Ant. Padder	37	36761	Resistor 3 Megohm ¼ W.		G2-130264	Toggle & Bearing Assy.
	46159	B. C.—Pol. Switch—On	38	35601	Resist. 40,000 Ohm ¼ W.		G1-130264	Toggle & Hub. Assy.
		Loop	39	36322	Resist. 300,000 Ohm ¼ W.		23877	Set Screw—Hub Fasten.
4	G221-32000	S. W. Antenna Coil	40	38916	Resist. 500,000 Ohm ¼ W.		49836	Link—Toggle Connecting
5	G231-32002	Dual Oscillator Coil	41	None	Resistor, 350 Ohm ¼ W.		49770	Trimount Stud—Link
		A—B. C. Oscillator	42	None				Retaining
		B—S. W. Oscillator	43	None				Bracket—Dial Mounting
6	G240-32004	1st I-F. Assy.—455 Kc.	45	G5-130145	Speaker—8-inch			(L. H.)
7	G249-32004	2nd I-F. Assy.—455 Kc.	46	49927	Rubber Grommet—			Bracket—Dial Mounting
8	130587	2 Section Gang Cond.—			Spkr. Mtg.			(R. H.)
					Headed Bushing—			Drive Cord (23")
9	49722	3 Sec. Shunt Trim. Assy.			Spkr. Mtg.		G39-41582	Spring—Drive Cord Ten.
		A—B. C. Antenna Trim.			Flat Washer—Spkr. Mtg.		50607	Bearing—Drive Shaft
		B—S. W. Antenna Trim.			(FS-58)		130586	Drive Shaft
		C—B. C. Oscillator			Spkr. Cable and Plug—		28032	Spring—Shaft Retainer
		Trimmer					49846	Pointer—Dial Hand
10	G21-34002	Cond. .0006 MF.—Mica					130071	Escutcheon and Lens
11	G8-34002	Cond. .00001 MF.—Mica	47	49849	Band Change Switch		AS	Cabinet
12	G13-34002	Cond. .000035 MF.—Mica	48	G50-26719	Phono Terminal Board		130296	Ship. Carton (AS Cabt.)
13	G5-34002	Cond. .00005 MF.—Mica	49	130592	Power Trans.—110 Volt—		130313	Knob—V. C. and Tuning
14	G5-34002	Cond. .00005 MF.—Mica			60 Cycle		130540	Knob—Function Switch
15	30805	Cond. .01 MF.—400V.	50	49817	Brace—Pow. Trans. Mtg.		130339	Knob—Lever Type
16	48667	Cond. .01 MF.—160V.			1 Meg. Vol. Cont. & Sw.			(Bd. Sw.)
17	30488	Cond. .02 MF.—400V.	51	G193-32004	Wave Trap—455 Kc.		130376	Cloth Protector & Pol.
18	None				Tube Socket—8 Prong.		130490	Screw—Chassis Mtg. (4)
19	130577	Cond. 3 Sec. Electrolytic			Lock Plate—Power Cord		15020	Washer—Chass. Mtg. (4)
		Sec. A—20 MF.—350V.			Brkt.—Trim. Front Mtg.		130760	Plate—Phono Motor Mtg.
		Sec. B—20 MF.—350V.			Bracket—Coil and Trimmer		130625	No. 10—32x3" Screw—
		Sec. C—20 MF.—25V.			Rear Mtg.			Plate Mtg. (4)
20	28904	Cond. .004 MF.—200V.			R. H. Chassis End Cover		38085	No. 10—32 Wing Nut—
					(Trim. Holes) (FS-8)			Plate Mtg. (4)
					L. H. Chassis End Cover			Screw—Needle Clamp
21	G2-34002	Cond. .0001 MF.—Mica			(FS-8)		47324	Bracket—Tone Arm Rest
22	84713	Cond. .006 MF.—160V.	52	None			47333	Ring—Rest Lock
23	23191	Cond. .01 MF.—400V.	53	None			47328	Nut—Tone Arm Mtg.
24	30488	Cond. .02 MF.—400V.	54	130776			47327	S. P. Washer—Tone Arm
25	35139	Cond. .004 MF.—400V.	55	50105	Tone Arm Assy.			Mtg.
26	G1-34002	Cond. .00025 MF.—Mica	56	50105	Cond. .1 MF.—160V.		47791	Needle Cup
27	None		57	G3-34002	Cond. .1 MF.—160V.		47790	Lid—Needle Cup
28	None		58	50084	Cond. 500 MMF.—Mica		46364	Needle—Chrome Tipped
					Cond. .003 MF.—160V.			

**WIRING DIAGRAM**

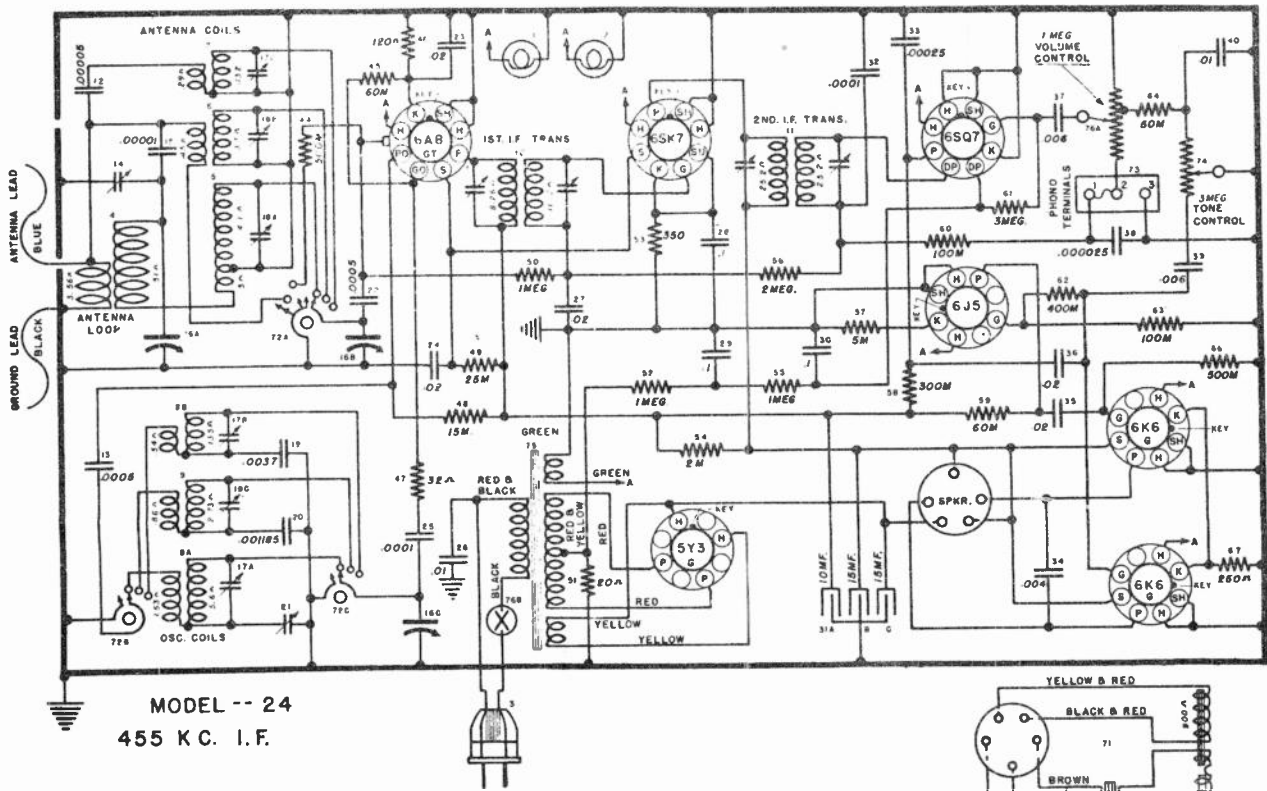


# MODEL 24 CHASSIS ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

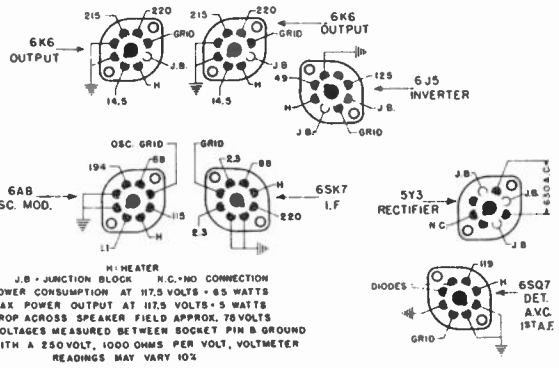
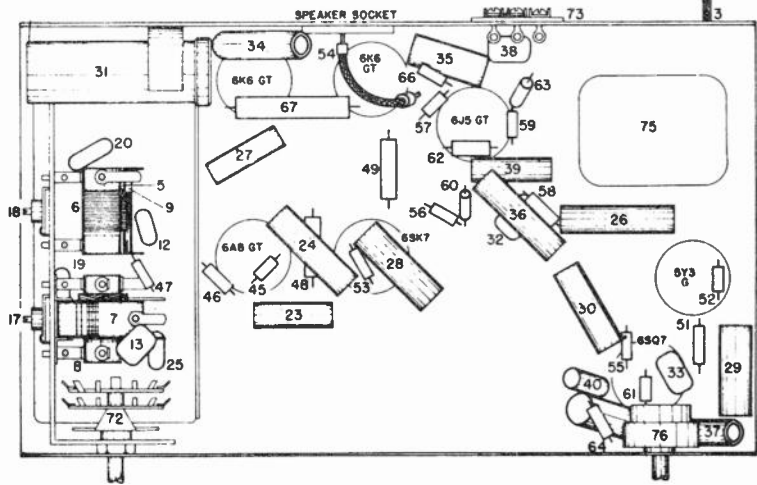


# MODEL 24 CHASSIS



MODEL -- 24  
455 K.C. I.F.

Item No.	Part No.	Description
2-1	43567	Dial Light
3	45769	Pr. Cord & Plug
4	130131	Loop Ant.
5	G112-32001	B. C. Preselector Coil
6	G222-32000	Pol. Ant. Coil
7	G223-32000	S. W. Ant. Coil
8	G232-32002	S. W. B. C. Osc. Coil
9	G233-32002	Pol. Osc. Coil
10	G246-32004	1st I. F. Trans.
11	G240-32004	2nd I. F. Trans.
12	G5-34002	.00005 Mf. Mica
12-13	G3-34002	.0005 Mf. Mica
14	130107	Loop Trimmer
15	G8-34002	.00001 Mf. Mica
16	49929	Tuning Cond. Assem.
18-17	35951	3 Section Trimmer
19	G17-34005	.0037 Mf. Mica
20	G14-34005	.001185 Mf. Mica
21	130108	Osc. Series Padder
36-35-27-24	30488	.02 Mf. 400 V.
32-25	G2-34002	.0001 Mf. Mica
40-26	30805	.01 Mf. 400 V.
30-29-28	50105	.1 Mf. 160 V.
31	49773	Filter Cond.
		15-15 @ 450
33	G1-34002	.00025 Mf. Mica
34	35139	.004 Mf. 400 V.
39-37	34713	.006 Mf. 160 V.
38	G6-34002	.000025 Mf. Mica
66-44	36322	½ Meg. ¼ W.
59-45	35928	60,000 ohm ¼ W.
46	130311	120 ohm ½ W.
47	45981	32 ohm ½ W.
48	47819	15,000 ohm 1 W.
49	130318	25,000 ohm 1 W.
50	35602	1 Meg. ¼ W.
55-52-51	49702	20 ohm ½ W.
53	38916	350 ohm ½ W.
54	23013	2000 ohm 1 ¼ W.
56	35927	2 Meg. ¼ W.
57	49945	5 Meg. ¼ W.
58	35601	300,000 ohm ¼ W.
63-80	35600	100,000 ohm ¼ W.
81	36688	3 Meg. ¼ W.
82	38321	400,000 ohm ¼ W.
84	40757	50,000 ohm ¼ W.
87	49703	250 ohm 2 W.
71	G1-130145	Speaker
72	49041	Band Switch
73	G56-28719	Phono Terminal
74	130207	Tone Control
75	49789	Pr. Trans.
76	47783	Vol. Cont. & Sw. (1 Meg.)
	130125	Pointer (Dial Hand)
	130260	Dial Face
	130261	Escutcheon
	130153	Knob (Tuning)
	130154	Knob (Vol. Control)
	130155	Knob (Tone Control)
	130156	Knob (Band Sw.)



# MODEL 25 CHASSIS

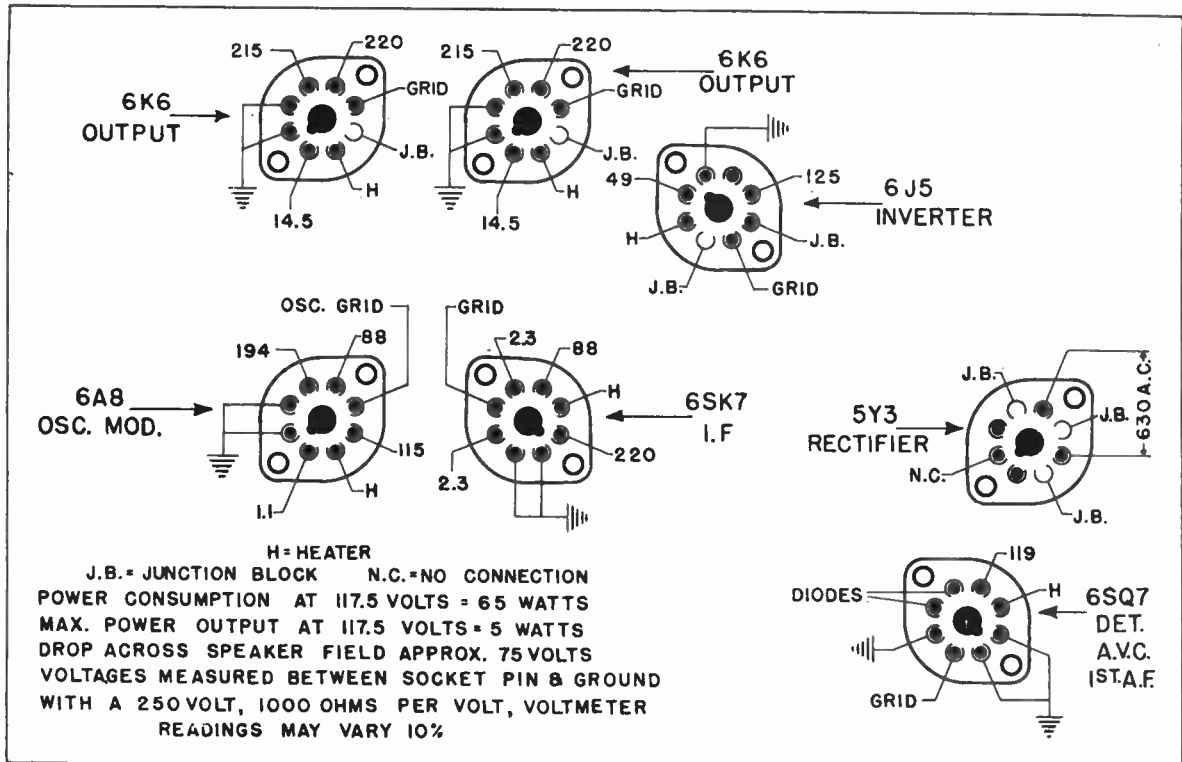
## ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections ..... Plate to Plate of 6K6's  
 Generator Ground Connection..... To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

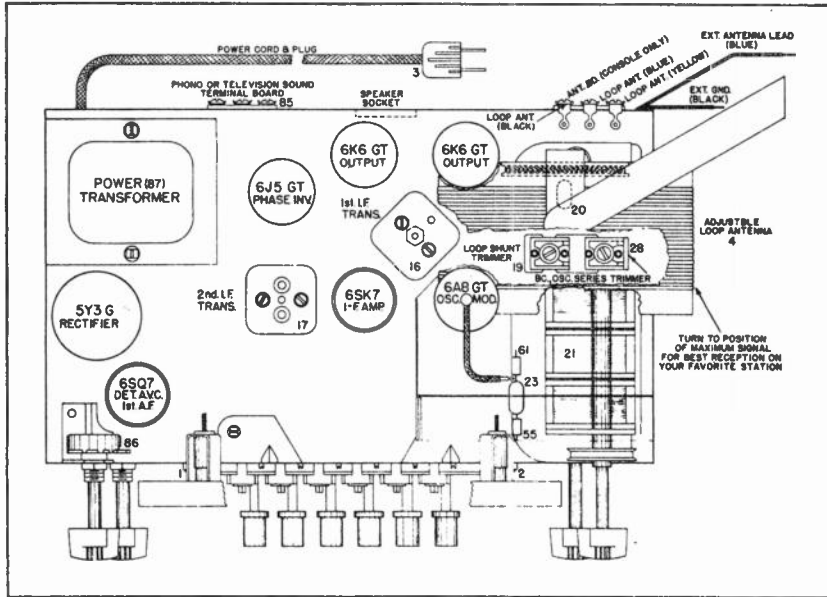
Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. Pre. Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

### SOCKET VOLTAGE CHART

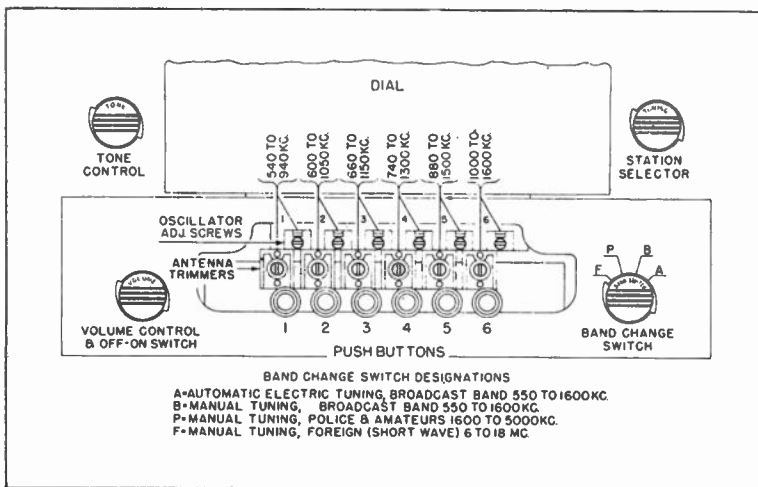
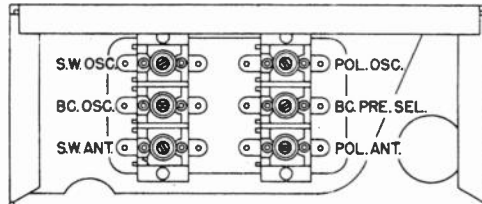


# MODEL 25AW

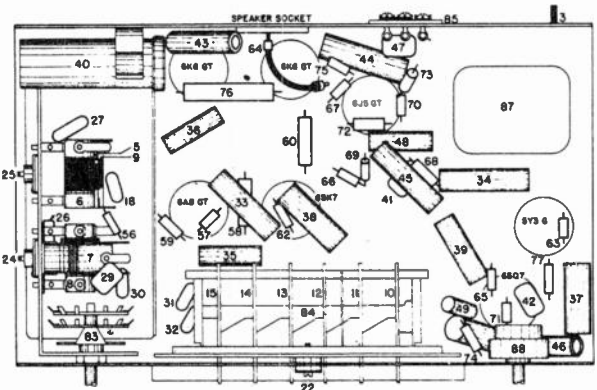
## DIAGRAM OF CONNECTIONS



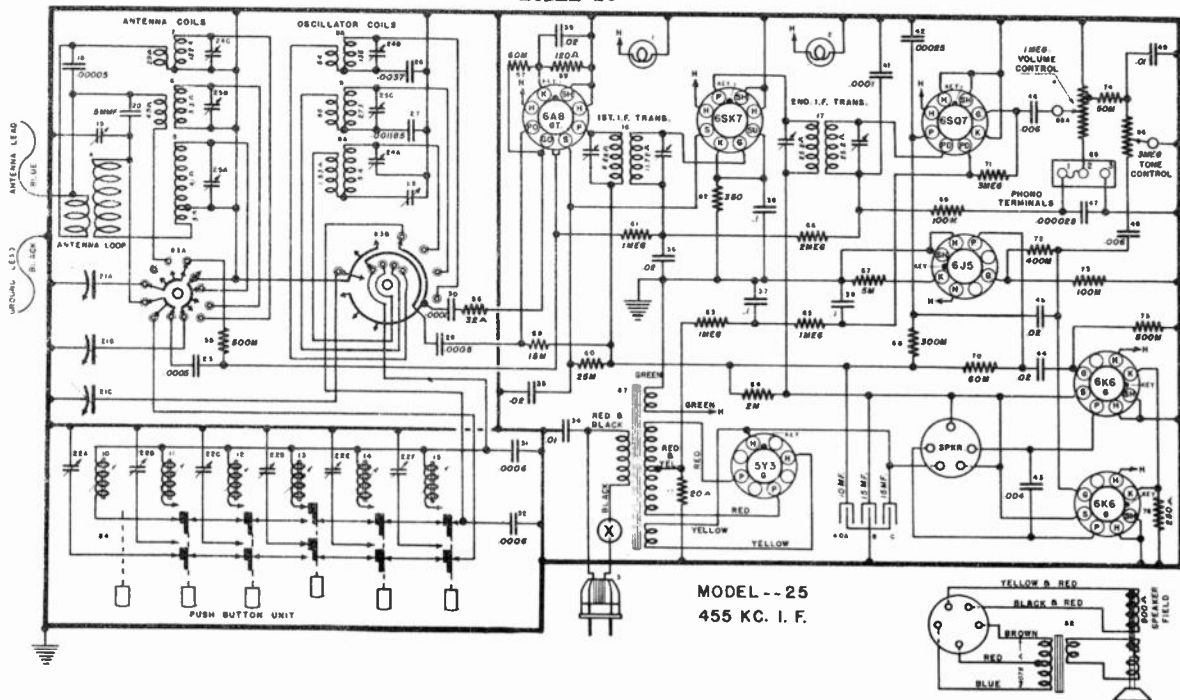
## TRIMMER LOCATIONS



## BOTTOM VIEW OF CHASSIS



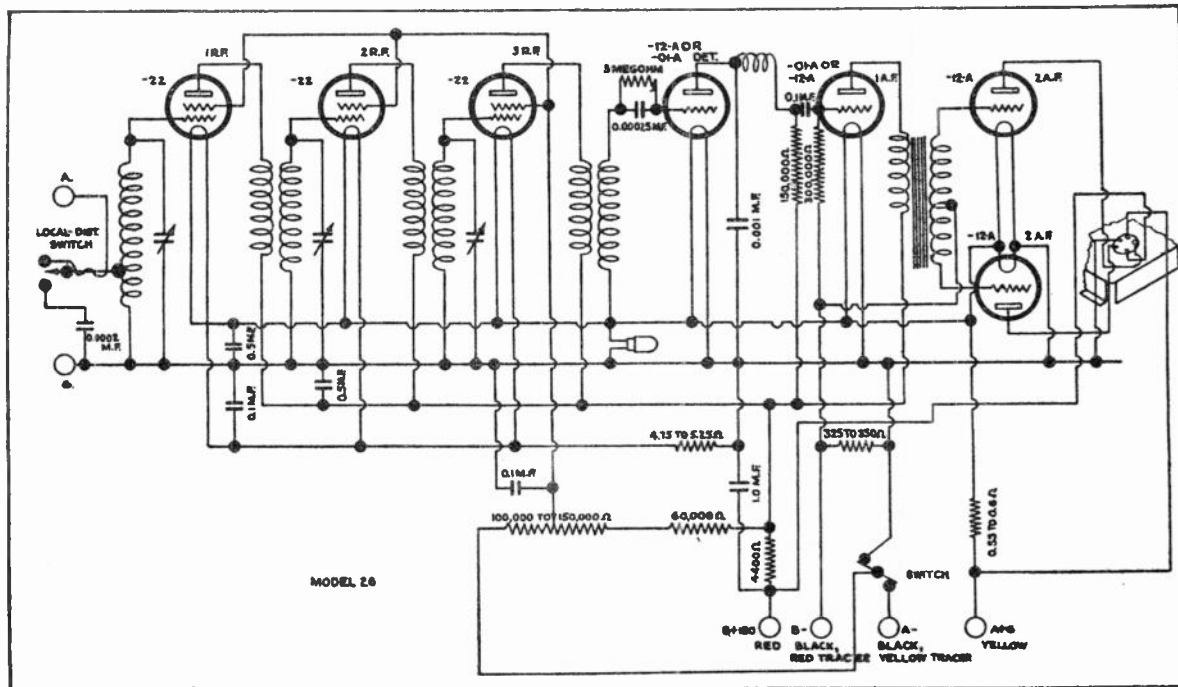
MODEL 25



MODEL -- 25  
455 KC. I. F.

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1-2	43567	Dial Light--6.3V.	46	W-34713	Cond. .006 MF--160V	MG3-19812		Push Button Assembly (Complete)
3	G7-49637	Socket Assy.--Dial Light	47	G6-34002	Cond. .00025 MF--Mica	W-15390-A		Rubber Grommet--Push Button Assy. Mtg.
4	45769	Power Cord & Plug	48	W-45210-B	Cond. .001 MF--160V.	49796		Headed Bushing--Push Button Assy. Mtg.
5	GC-130234	Loop Antenna Assy. (AY Cabt.)	49	W-130171	Cond. .01 MF--160V.	130165		No. 8-32x 1/2" Screw--Push But. Assy. Mtg.
6	CB-130205-A	Loop Antenna Assy. (AW & AX Cabt.)	50	NONE		130661	AV	Carton--Ship. AW Cabt. Cabinet--Small Console (Carton--Ship. AX Cabt. Cabinet--Large Console (Carton--Ship. AY Cabt. Foucaulton & Dial Part--Asy.)
7	G112-32001	Preselector Coil--550-1600 Kc.	51	NONE		130280		Dial Face only (Excitition only)
8	G222-32000	Ant. Coil--1.6-5.0 Mc.	52	36322	Resis. 500 000 Ohm 1/2 W.	130259		No. 2-3, Screw--Dial Face Foucaulton Mtg. (4 reqd.)
9	G223-32000	Ant. Coil--6.0-18.0 Mc.	53	45881	Resistor 60 000 Ohm 1/2 W.	130167		Excitition--Push But. No. 2-3, Screw--P. But. Assy. Mtg. (2 reqd.)
10	G232-32002	Dual Oscillator Coil Sec. A--B.C.--550-1600 Kc.	54	130318	Resistor 25 000 Ohm 1/2 W.	130168		Push Button
11	G233-32002	Osc. Coil--Pol.--1.6-5.0 Mc.	55	35602	Resistor 1 Megohm 1/2 W.	130169		Knob--Tuning (AW & AX Cabt.)
12	G234-32002	Push Button--Osc. Coil--540-940 Kc.	56	35603	Resistor 2 000 Ohm 1/2 W.	130170		Knob--Volume Control (AW & AX Cabts.)
13	G235-32002	Push Button--Osc. Coil--600-1050 Kc.	57	35604	Resistor 1 Megohm 1/2 W.	130171		Knob--Tone Control (AW & AX Cabts.)
14	G236-32002	Push Button--Osc. Coil--660-1150 Kc.	58	47819	Resistor 15 000 Ohm 1/2 W.	130172		Knob--A, Cabt. (4 req.)
15	G237-32002	Push Button--Osc. Coil--740-1200 Kc.	59	130319	Resistor 25 000 Ohm 1/2 W.	130234 (FS-77)		Antenna Loop Bracket--AY Cabt. (2 reqd.)
16	G238-32002	Push Button--Osc. Coil--880-1550 Kc.	60	35605	Resistor 1 Megohm 1/2 W.	130173		Antenna Loop Bracket--AW & AX Cabt.
17	G239-32002	Push Button--Osc. Coil--1000-1600 Kc.	61	35606	Resistor 350 Ohm 1/2 W.	130174		No. 8-32x 1/2" Round Head Wood Screw--Loop Brkt. Mtg.--AY Cabt. No. 6-32x 1/2" Rd. Hd. Wd. Scr.--Loop Brkt. Mtg. AW & AX Cabts.
18	G246-32004	1st I-F Transformer Assy.--455 Kc.	62	35607	Resistor 1 Megohm 1/2 W.	130175		Chassis Mtg. (4 reqd.)
19	G240-32004	2nd I-F Transformer Assy.--455 Kc.	63	35608	Resistor 2 000 Ohm 1/2 W.	130176		Speaker Mtg. (4 reqd.)
20	G5-34002	Cond. .00025 MF--Mica	64	W-23013	Resistor 2 000 Ohm 1/2 W.	130177		Flat Washer--AW Cabt. Flat Washer--AX & AY Cabts.
21	130107	Cond. .00118 MF--Mica	65	35609	Resistor 1 Megohm 1/2 W.	130178		No. 8-32x 3/4" Screw--Chassis Mtg.
22	G8-50640	Cond. 5 MMF.--Twisted Wire	66	35610	Resistor 2 Megohm 1/2 W.	130179		Speaker--Mtg. Bracket (1 reqd.)
23	49929	Cond. 3 Sect. Var. Tuning Gang	67	49945	Resistor 5 000 Ohm 1/2 W.	130180		Flat Washer--AW Cabt. Flat Washer--AX & AY Cabts.
24	130553	Push Button Arm. Assy. Cond.--P. B. Trimmer--740-1200 Kc.	68	35611	Resistor 300 000 Ohm 1/2 W.	130181		No. 8-32x 3/4" Screw--Chassis Mtg.
25	49934	Cond.--P. B. Trimmer--600-1050 Kc.	69	35612	Resistor 2 Megohm 1/2 W.	130182		Speaker Mtg. Bracket (1 reqd.)
26	49934	Cond.--P. B. Trimmer--740-1200 Kc.	70	35613	Resistor 80 000 Ohm 1/2 W.	130183		No. 8-32x 3/4" Screw--Chassis Mtg.
27	49934	Cond.--P. B. Trimmer--880-1550 Kc.	71	35614	Resistor 100 000 Ohm 1/2 W.	130184		Flat Washer--AW Cabt. Flat Washer--AX & AY Cabts.
28	49934	Cond.--P. B. Trimmer--1000-1600 Kc.	72	35615	Resistor 80 000 Ohm 1/2 W.	130185		No. 8-32x 3/4" Screw--Chassis Mtg.
29	G3-34002	Cond. .0005 MF--Mica	73	35616	Resistor 2 Megohm 1/2 W.	130186		Speaker Mtg. Bracket (1 reqd.)
30	G2-34002	Cond.--3 Sect. Shunt Trimmer Assy.	74	47737	Resistor 50 000 Ohm 1/2 W.	130187		No. 8-32 Hex. Nut--Spkr. Mtg. Brkt.
31	G17-34005	Cond. .0037 MF--Mica--S. W. Osc. Series	75	35617	Resistor 100 000 Ohm 1/2 W.	130188		Rubber Grommet--Speaker Mtg.
32	G14-34005	Cond. .00118 MF--Mica--Pol. Osc. Series	76	35618	Resistor 250 Ohm 2 W.	130189		Headed Bushing--Speaker Mtg.
33	130108	Cond.--B.C. Osc. Series Padder	77	49702	Resistor 250 Ohm 1/2 W.	130190		Flat Washer--Speaker Mtg.
34	G3-34002	Cond. .0005 MF--Mica	78	NONE		130191		No. 8-32 Hex. Nut--Speaker Mtg.
35	G2-34002	Cond. .001 MF--Mica	79	NONE		130192		No. 8-32 Hex. Nut--Speaker Mtg.
36	G21-34002	Cond. .0008 MF--Mica	80	NONE		130193		No. 8 Shakeproof Washer--Spkr. Mtg. Brkt.
37	W-30458	Cond. .02 MF--400V.	81	NONE		130194		Rubber Grommet--Speaker Mtg.
38	W-45780-B	Cond. .01 MF--400V.	82	G1-130146	Speaker--AY Cabt. Speaker--AW & AX Cabts.	130195		Headed Bushing--Speaker Mtg.
39	W-50105	Cond. .02 MF--160V.	83	G8-130145	Speaker--AW & AX Cabts.	130196		Flat Washer--Speaker Mtg.
40	W-50105	Cond. .01 MF--160V.	84	49943	Band Change Switch Section "A" Antenna Section "B" Oscillator Push Button Switch	130197		Flat Washer--Speaker Mtg.
41	W-50105	Cond. .02 MF--160V.	85	G56-26719	Phono Terminal Board	130198		Flat Washer--Speaker Mtg.
42	W-50105	Cond. .01 MF--160V.	86	130207	Tone Control (3 Meg.) & Switch	130199		Flat Washer--Speaker Mtg.
43	W-50105	Cond. .1 MF--160V.	87	47783-A	Volume Control (1 Meg.) & Switch	130200		Flat Washer--Speaker Mtg.
44	W-30488	Cond. .02 MF--400V.	88	MG2-49912	Band Sw. Coils & Trim. Assy. Complete	130201		Flat Washer--Speaker Mtg.
45	W-30488	Cond. .02 MF--400V.	89	MG9-49911	Dial Back Plate (Shadow Box)	130202		Flat Washer--Speaker Mtg.
46	W-30488	Cond. .02 MF--400V.	90	130125	Pointer (Dial Hand)	130203		Flat Washer--Speaker Mtg.
47	W-30488	Cond. .02 MF--400V.	91	GW-130138	Shaft & Pulley Assy.--Pointer	130204		Flat Washer--Speaker Mtg.
48	W-30488	Cond. .02 MF--400V.	92	2118	Internal Shakeproof Washer--Pointer Mtg. No. 6-32x 1/2" Screw--Pointer Mtg.	130205		Flat Washer--Speaker Mtg.
49	W-30488	Cond. .02 MF--400V.	93	130092	Bearing--Pointer Shaft--Riveted to Plate Retaining	130206		Flat Washer--Speaker Mtg.
50	W-30488	Cond. .02 MF--400V.	94	W-49829-A	Spring--Pointer Shaft Retaining	130207		Flat Washer--Speaker Mtg.
51	W-30488	Cond. .02 MF--400V.	95	G40-41582	Drive Cord (25 1/4" Long)	130208		Flat Washer--Speaker Mtg.
52	W-30488	Cond. .02 MF--400V.	96	W-130196	Spring--Drive Cord Ten. Condenser & Tube Shield (FS-17)	130209		Flat Washer--Speaker Mtg.
53	W-30488	Cond. .02 MF--400V.	97	W-22880-B	Thumb Screw--Shield Mtg. (FS-58)	130210		Flat Washer--Speaker Mtg.
54	W-30488	Cond. .02 MF--400V.	98	W-49674	Clamp--Electrolytic Cond. Mtg.	130211		Flat Washer--Speaker Mtg.
55	W-30488	Cond. .02 MF--400V.	99	G103-28807	Socket--3 Prong Octal Socket--5 Prong "Spkr." Shielded Lead Assy.--V.C. to Phono Term.	130212		Flat Washer--Speaker Mtg.
56	W-30488	Cond. .02 MF--400V.	100	G247-34403	Rubber Grommet--Tuning Unit Mtg. Headed Bushing--Tuning Unit Mtg.	130213		Flat Washer--Speaker Mtg.
57	W-30488	Cond. .02 MF--400V.	101	W-45580-A	Headed Bushing--Tuning Unit Mtg.	130214		Flat Washer--Speaker Mtg.
58	W-30488	Cond. .02 MF--400V.	102	49796	Headed Bushing--Tuning Unit Mtg.	130215		Flat Washer--Speaker Mtg.
59	W-30488	Cond. .02 MF--400V.	103	130165	8-32x 1/2" Screw--Tuning Unit Mtg.	130216		Flat Washer--Speaker Mtg.
60	W-30488	Cond. .02 MF--400V.	104	G36-35964	Junction Block Assy.--(8 Lug & Brkt.)	130217		Flat Washer--Speaker Mtg.
61	W-30488	Cond. .02 MF--400V.	105			130218		Flat Washer--Speaker Mtg.

## Model 26



Qty.	Part No.	Description
1	D-20119-A	Chassis .....
7	W-7871	Socket .....
7	W-7872	Socket Guide .....
1	W-7873	Socket (5 prong speaker) ....
1	W-7874	Socket Guide .....
2	W-20111	R. F. Transformer .....
1	W-20112	R. F. Transformer (antenna) .....
3	W-7272	Screen Grid Connectors.....
3	W-6436	R. F. Shield .....
3	W-6473	R. F. Shield Cover .....
3	W-6474	R. F. Shield Cover Nut ....
1	W-20148	Toggle Switch (local-dist.) .....
1	W-20114	Volume Control .....
1	W-20204	Terminal Board (A & G) .....
1	W-20115	Variable Condenser Gang (complete) .....
	W-4883	Dial Light Bracket .....
	W-5352	Dial & Spider .....
	W-5354	Dial Indicator .....
	W-4880	Pinion .....
	W-4907	Pinion Spring .....
	W-20123	Pinion Stirrup .....
	B-21057	Gang Cover .....
	W-6474	Gang Cover Nuts .....
1	W-20130	Power Switch .....
1	W-20125	Detector Shield Base .....
1	W-20124	Detector Shield .....
1	W-20380	Push Pull A. F. Trans.....
<b>PARTS UNDER CHASSIS</b>		
1	W-20260	Fixed Resistance (4.75 to 5.25) .....
1	W-20103	.0002 Mfd. Fixed Condenser

Qty.	Part No.	Description
1	W-4068	.5 Mfd. Fixed Condenser (2 paper) .....
1	W-6614	R. F. Choke .....
1	W-7753	.1 - .5 - .1 Mfd. Fixed Cond. ....
1	W-4013	.1 Mfd. Fixed Condenser ....
1	W-20820	Mounting Strip .....
1	W-4924	.00025 Mfd. Fixed Condenser .....
1	W-5408	3 Meg. (Grid Leak) Resistor .....
1	W-4923	00000 Ohm Resistor (Blue, Orange Spot) .....
1	W-6754	.001 Mfd. Fixed Condenser....
1	W-20820	Mounting Strip .....
1	W-7159	4400 Ohm Resistor (Yellow, Red Spot) .....
1	W-5735	150000 Ohm Resistor (Brown, Green, Yellow Spot) .....
1	W-4362	Plate Choke .....
1	W-6471	.1 Mfd. Fixed Condenser (2 paper) .....
1	W-5713	Mounting Strip .....
1	W-6704	300000 Ohm Resistor, (Brown, Blk., Yellow Spot) .....
1	W-20090	.55 to .6 Ohm Resistor .....
1	W-20100	350 Ohm Resistor .....
1	B-20118	Cable (4 wire) .....
1	W-4751	Cable Clamp .....
5	W-4681	Grommets (3-8") .....
1	W-5655	Grommets (1") .....
1	C-5888	Bottom .....
6	W-5718	Bottom Double Nut .....
1	W-6161	Knob (large) .....
2	W-6162	Knob (small) .....
1	W-6328	Escutcheon .....
1	B-7030	Front Panel (Wood Cabinet Chassis) .....



# MODEL 26 CHASSIS

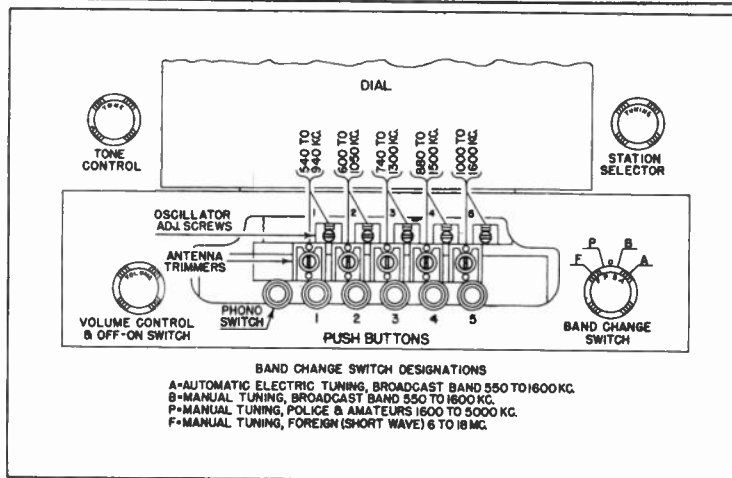
## ALIGNMENT PROCEDURE

Preliminary

- Output Meter Connections.....Plate to Plate of 6F6's
- Generator Ground Connection.....To chassis or Ground Lead
- Dummy Antenna to be in series with generator output.....See Chart Below
- Position of Volume Control.....Fully On
- Position of Tone Control.....Treble or Speech

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.



TUBE FUNCTION	1	2	3	4	5	6	7	8
6K7GT—R. F. Amp.....	0	0	187	75	0	J.B.	*6.3	2
6A8GT—Osc.-Mod. ....	0	0	187	75	0	130	*6.3	1
6SK7—I. F. Amp.....	0	0	2.3	0	2.3	78	*6.3	228
6SQ7—Det. A.V.C.-A. F.....	0	0	0	0	0	110	*6.3	0
6J5GT—Phase Invert. ....	0	0	120	0	0	J.B.	*6.3	5.5
6F6G—Output .....	0	0	220	230	0	J.B.	*6.3	14.5
6F6G—Output .....	0	0	220	230	0	J.B.	*6.3	14.5
5Y3G—Rectifier .....	NC	329.0	J.B.	*358.0	J.B.	*358	J.B.	329.0

\*Measure with A. C. Voltmeter.

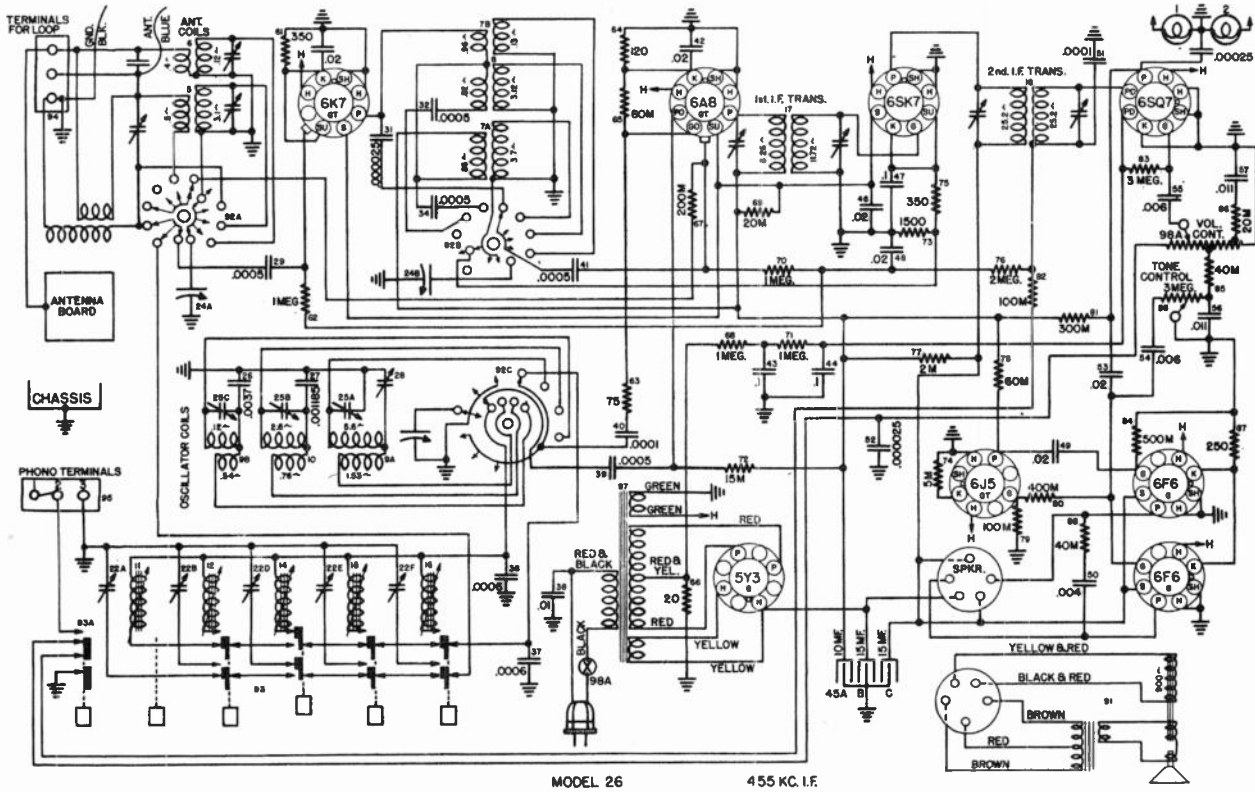
Max. POWER OUTPUT @ 117.5 V. LINE..... 8.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE.....85 Watts  
 DROP ACROSS SPEAKER FIELD.....95.0 Volts

J.B.—JUNCTION BLOCK.

Voltages may vary 10% of values given.

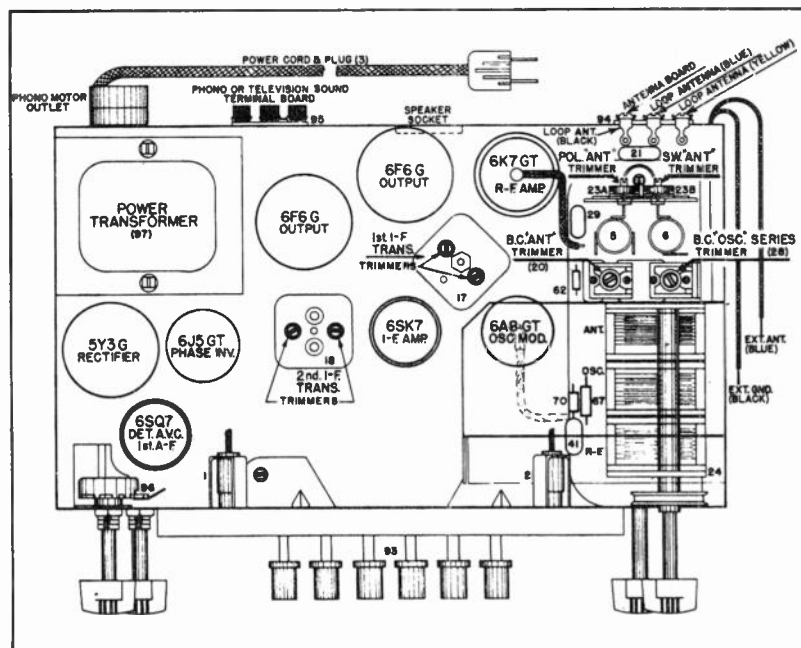
N.C.—NO CONNECTION.

**MODEL 26  
WIRING DIAGRAM**



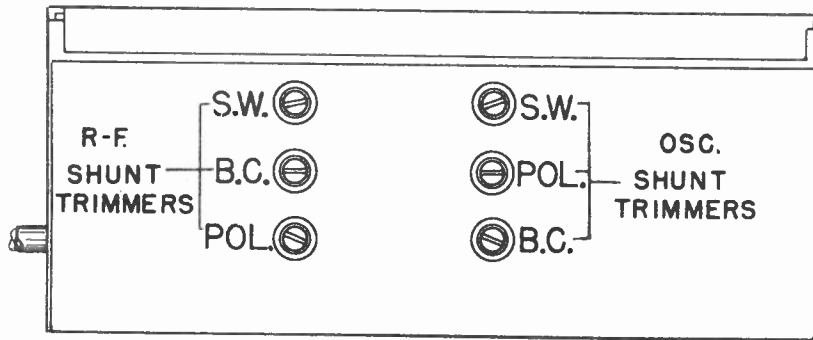
The Crosley Corporation was one of the very earliest radio parts manufacturers. As early as 1920, parts were distributed on a nation-wide basis. We are still anxious to serve you with radio service parts through the Crosley distributor in your area.

**DIAGRAM OF CONNECTIONS**



# MODEL 26

## TRIMMER LOCATIONS



## PARTS LIST — MODEL 26

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb, Dial Light	57	—48993	Cond. .011 Mf. 160 V. Paper
2	—43567	Bulb, Dial Light	58	G1 —34002	Cond. 250 Mmf. Mica
3	G7 —49337	Socket Assy.—Dial Light	59		
4	—45769—H	Cable & Plug Power	60		
5	G2 —130234	Coil, Antenna Loop	61	—38916	Res. 350 Ohm 1/2 W. Ins.
6	G225—32000	Coil, Pol. Ant.	62	—35602	Res. 1 Meg. 1/4 W. Ins.
7A	G224—32000	Coil, H.F. Ant.	63	—47699	Res. 75 Ohm 1/2 W. Ins.
7B	G114—32001	Coil, H.F. R.F.	64	—130311	Res. 120 Ohm 1/2 W. Ins.
8	G115—32001	Coil, Pol. R.F.	65	—35928	Res. 60,000 Ohm 1/4 W. Ins.
9A	G241—32002	Coil, B.C. Osc.	66	—49702	Res. 20 Ohm 1/2 W. Ins.
9B		Coil S.W. Osc.	67	—35930	Res. 200,000 M Ohm 1/4 W. Ins.
10	G242—32002	Coil, Pol. Osc.	68	—35602	Res. 1 Meg. 1/4 Ins.
11	G234—32002	Coil, P.B. Osc. 540-940 Kc.	69	—37377	Res. 20,000 1 Ohm Ins.
12	G235—32002	Coil, P.B. Osc. 600-1050 Kc.	70	—35602	Res. 1 Meg. 1/4 W. Ins.
13			71	—35602	Res. 1 Meg. 1/4 W. Ins.
14	G237—32002	Coil, P.B. Osc. 740-1300 Kc.	72	—47819	Res. 15,000 Ohm 1 W. Ins.
15	G238—32002	Coil, P.B. Osc. 880-1550 Kc.	73	—130488	Res. 1500 Ohm 1/4 W. Ins.
16	G239—32002	Coil, P.B. Osc. 1000-1600 Kc.	74	—49945	Res. 5000 Ohm 1/4 W. Ins.
17	G246—32004	1st I-F Trans.	75	—38916	Res. 350 Ohm 1/2 W. Ins.
18	G240—32004	2nd I-F Trans.	76	—35927	Res. 2 Meg. 1/4 W. Ins.
19			77	—23013	Res. 2000 Ohm 1 1/4 W. Flex.
20	—49859	Iron Core	78	—35928	Res. 60,000 Ohm 1/4 W. Ins.
21	—49932	Cond. Trimmer	79	—85600	Res. 100,000 Ohm 1/4 W. Ins.
22	—45580	Rubber Grommet—P.B. Mtg. Unit	80	—86321	Res. 400,000 Ohm 1/4 W. Ins.
	G5 —34002	Cond. 50 Mmf. Mica	81	—35601	Res. 300,000 Ohm 1/4 W. Ins.
			82	—35600	Res. 100,000 Ohm 1/4 W. Ins.
22A	—49769	Headed Bushing—P.B. Unit Mtg.	83	—36688	Res. 3 Meg. 1/4 W. Ins.
22B	—49933	Cond. P.B. Trim. 540-940 Kc.	84	—36322	Res. 500,000 Ohm 1/4 W. Ins.
22C	—49934	Cond. P.B. Trim. 600-1050 Kc.	85	—36761	Res. 40,000 Ohm 1/4 W. Ins.
22D	—49936	Cond. P.B. Trim. 740-1300 Kc.	86	—36760	Res. 20,000 Ohm 1/4 W. Ins.
22E	—49937	Cond. P.B. Trim. 880-1550 Kc.	87	—49703	Res. 250 Ohm 2 W. Ins.
22F	—49938	Cond. P.B. Trim. 1000-1600 Kc.	88	—36761	Res. 40,000 Ohm 1/4 W. Ins.
23A	—37986—A	Cond. Pol. Ant. Trim.	89		
23B		Cond. Sw. Ant. Trim.	90		
24A	—49929	Var. Cond. Ant. Sect.		—49853	Grommet—Spkr. Mtg. (4)
24B		Var. Cond. R.F. Sect.	91	G1 —190328	Brkt.—Spkr. Mtg. (4)
24C		Var. Cond. Osc. Sect.		—47219	Speaker (12 inch)
25A	—35951—A	Cond. B.C. Osc. Trim.	92A	—130487	Headed Bushing—Spkr. Mtg. (4)
25B		Cond. Pol. Osc. Trim.	92E		Switch, Band Change (Ant. Sect.)
25C		Cond. H.F. Osc. Trim.	92C		Switch, Band Change (R.F. Sect.)
26	G17 —34005	Cond. 3700 Mmf. Mica	93	—130016	Switch, Band Change (Osc. Sect.)
27	G14 —34005	Cond. 1185 Mmf. Mica	93A		Switch, Push Button
28	—130108	Cond. B.C. Osc. Series Trim.	94	G58 —26719	Switch, Push Button Phono
29	G3 —34002	Cond. 500 Mmf. Mica	95	G56 —26719	Terminal Board (Loop)
30	—45780—B	Cond. .02 Mf. 160 V. Paper	96	—180741—A	Terminal Board (Phono)
31	G6 —34002	Cond. 25 Mmf. Mica		—49986	Tone Control (3 Meg.)
32	G8 —34002	Cond. 500 Mmf. Mica	97	—130191	Brkt.—T.C. Mtg. (4)
33			98A	—130192	Transformer (Power)
34	G8 —34002	Cond. 500 Mmf. Mica	98B	—130192	Vol. Con. (1 Meg.)
35A	—35951—A	Cond. B.C. R.F. Trim.		—130160—A	Switch (Power)
35B		Cond. Pol. R.F. Trim.		—49176	Push Button (6)
35C		Cond. H.F. R.F. Trim.		—130158	Clamp—Elect. Cond. Mtg.
36	G21 —34002	Cond. 600 Mmf. Mica	MG34—130111	Screws—Dial & Escutcheon Mtg. (6)	
37	G21 —34002	Cond. 600 Mmf. Mica	G40 —41582	Dial Back Plate	
38	—30805	Cond. .01 Mf. 400 V. B.C.		Drive Cord	
39	G3 —32002	Cond. 500 Mmf. Mica		Pointer Shaft Assy.	
40	G2 —34002	Cond. 100 Mmf. Mica		Spring—Pointer Shaft Retaining	
41	G8 —34002	Cond. 500 Mmf. Mica		Dial Pointer	
42	—45780—B	Cond. .02 Mf. 160 V. Paper		Shield—Cond. Gang	
43	—60105	Cond. .1 Mf. 160 V. Paper		Thumb Screw—Shield Mtg.	
44	—60105	Cond. .1 Mf. 160 V. Paper	—130218—D	BB Cabinet	
45A	—130246	Cond. 10 Mf. 250 V. Elect.	—130219	Carton	
45B		Cond. 15 Mf. 450 V. Elect.	—130444	Protector Cloth	
45C		Cond. 15 Mf. 450 V. Elect.	—130221	Dial Face & Escutcheon (6)	
46	—80488	Cond. .02 Mf. 400 V. Paper	—130147	F.B. Escutcheon	
47	—60105	Cond. .1 Mf. 160 V. Paper	—130324	Screws—P.B. Escutcheon	
48	—45780—B	Cond. .02 Mf. 160 V. Paper	—130383	Cab. Back	
49	—80488	Cond. .02 Mf. 400 V. Paper	—48797	Antenna Board	
50	—85189	Cond. .004 Mf. 400 V. Paper	—45579	Flat Washers—Chassis Mtg.	
51	G2 —34002	Cond. 100 Mmf. Mica	—130179	Screw—Chassis Mtg.	
52	G6 —34002	Cond. 25 Mmf. Mica	—45056	Rubber Grommet—Chassis Support	
53	—80488	Cond. .02 Mf. 400 V. Paper	—130197	Knob (4)	
54	—45810—B	Cond. .006 Mf. 160 V. Paper	—130992	Chassis End Plate (L. 4)	
55	—34713	Cond. .006 Mf. 160 V. Paper	—130991	Chassis End Plate (R. 4)	
56	—48993	Cond. .011 Mf. 160 V. Paper	—130186—B	Call Letters	
			—130187—A	Celluloid Covers	

# SERVICE INFORMATION MODEL 27 CHASSIS

## WIRING DIAGRAM

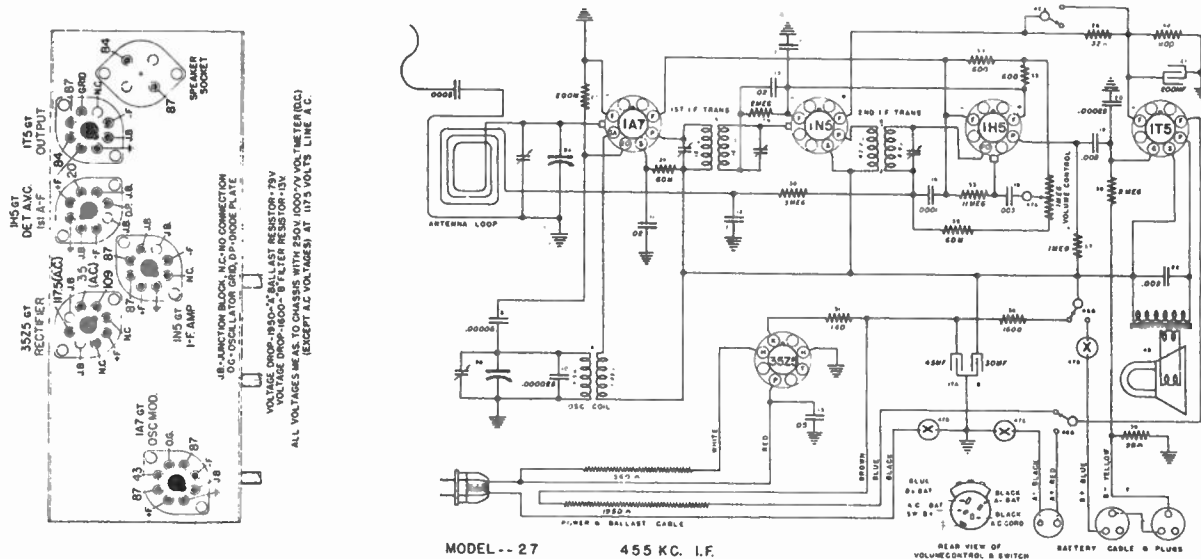


Fig. 2

### PARTS LIST

Diagram Part No.	Diagram Part No.	DESCRIPTION	Diagram Part No.	DESCRIPTION	Diagram Part No.	DESCRIPTION
1	130340	Power Cord & Plug (dual resistance in cord)	18	50084	42	
2	130050	A & B Bat. Cable complete	19	50084	43	
3	G1-130368	Loop Antenna Assy.—Model 27 BD	20	G1-34002	44	
	G2-130368	Loop Antenna Assy.—Model 27 BE	21	130404	45	G1-130446
4	G240-32002	Oscillator Coil	22	130462	46	130075
5	G244-32004	1st 1-F. Trans. Assy.	23		47	49974
6	G248-32004	2nd 1-F. Trans. Assy.	24			
7			25			
8	G5-34002	Cond. 50 MMF.—Mica	26	37631		CR-658
9	49737	Cond.—Variable Tuning	27	33930		46447
10	G6-34002	Cond. 25 MMF.—Mica	28	35928		130400
11	45780	Cond. .02 MF.—160V. Tub.	29	35927		49780
12	45780	Cond. .02 MF.—160V. Tub.	30	36688		130392
13	45780	Cond. .02 MF.—160V. Tub.	31	130073		130349
14	50105	Cond. .1 MF.—160V. Tub.	32	35928		50590
15	45782	Cond. .05 MF.—120V. Tubular (A.C.)	33	48693		G27-43564
			34	38918		49832
16	G2-34002	Cond. 100 MMF.—Mica	35	38918		BD
17	49995	Cond.—Dual Electrolytic	36	130374		BE
			37	35602		130416
			38	35927		130417
			39	42401		
			40	21452		
			41			

### ALIGNMENT PROCEDURE

Volume Control on full

Output meter connected to Plate and Screen of 1T5GT

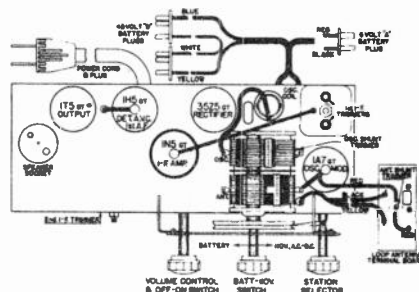
SIGNAL GENERATOR		DUMMY ANTENNA		TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO					
455 Kc	Grid 1A7GT	.02 MF		Fully open	2nd 1-F (1) located on front	Adjust for maximum signal.
455 Kc	Grid 1A7GT	.02 MF		Fully open	chassis flange 1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF		Approx. 140	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF		on dial	"ANT" shunt on loop ant. through hole in right side of cabinet	Adjust for maximum output.

Repeat above for more accurate adjustments

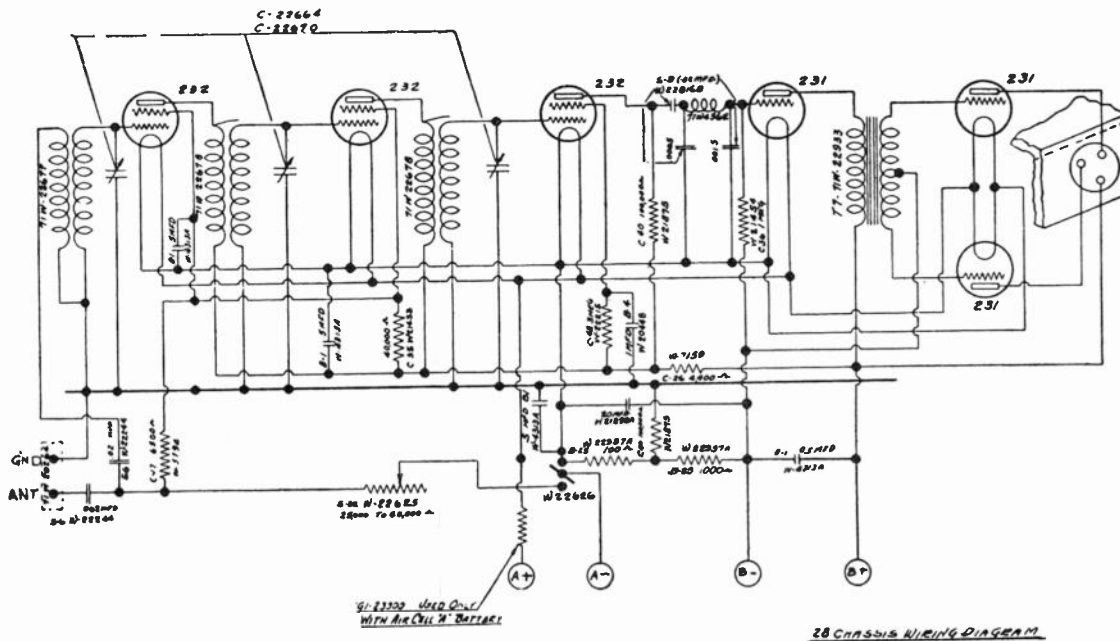
Maximum power output @ 75 V. "B"—approx. 200 M. W.  
 Maximum power output @ 90 V. "B"—approx. 340 M. W.  
 Maximum power output @ 90 V. "B"—approx. 200 M. W. undistorted

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ 90 V., 12 M. A.  
 Power consumption @ 117.5 volts line—30 Watts

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



# MODELS 27 and 28



## Parts List—Model 27

## —Model 28

Qty.	Part No.	Description	Qty.	Part No.	Description
1	C-24647	Chassis .....	1	D-22669	Chassis .....
3	G-11-23800	Four Prong Socket 232 .....	6	W-7871	Four Prong Socket .....
3	G-15-23800	Four Prong Socket 231 .....	6	W-7874	Four Prong Socket Guide...
1	G1-24065	Terminal Board (Speaker)..	1	W-20264	Terminal Board (A. & G.)..
1	LW-20264D	Terminal Board (A & G) ....	1	W-21518A	Terminal Board (Speaker)..
1	G1-24398	Junction Block .....	1	W-22682	Idler Bracket Assy. (Upper)
1	LB-24648	R. F. Coil Unit Assy. ....	1	G2-22658	R. F. Coil Unit Assy. ....
2	G1-22678A	Interstage Coil Assy. ....	1	G2-22677B	Antenna Coil .....
1	W-24656	Mounting Plate .....	2	G1-22678	Interstage Coil .....
2	B-7558A	R. F. Coil Shield .....	3	B-7558A	Coil Shield .....
1	G2-22677B	Antenna Coil Assy. ....	1	W-22663	Mounting Plate .....
1	B-7558A	R. F. Coil Shield .....	1	W-4362	Plate Choke .....
1	C-24682	Variable Condenser .....	1	W-22683	Idler Bracket Assy. (Lower)
1	G2-22686	Dial Drive .....	1	W-22679	Dial Strip .....
1	W-24676	Dial Pointer .....	1	W-22681	Idler Bracket Assy. (Tension)
2	G6-22628	Tube Connector Assy. ....	3	W-21973	Tube Connector .....
1	G7-22623	Tube Connector Assy. ....	1	B-22929	Tube Shield .....
1	W-24642	Volume Control .....	1	L-23215	Variable Tuning Condenser Assy.
1	W-24643	Switch .....	1	G2-22933A	A. F. Transformer .....
1	Ga-22933A	A. F. Transformer Assy. ....	1	W-22625	Volume Control .....
1	W-24673	Condenser Clamp .....	1	B-22627A	Battery Cable .....
1	B-22627A	Battery Cable .....	1	W-22460A	Drive Pulley Bracket .....
1	W-4751B	Cable Clamp .....	1	W-22463	Stop Washer .....
1	G1-24284	R. F. Choke .....	1	W-22628A	Stop Washer .....
1	G1-24684	Shield Assembly .....	1	W-22402	Support Bracket .....
1	W-24763	Shield .....	1	W-22644	Pointer .....
2	G2-24684	Shield Assembly .....	1	W-22626	Switch .....
		<b>Condensers</b>	1	W-22627A	Drive Shaft .....
1	W-20449	(.5 - .1) Mfd. ....	1	W-22334	Drive Rope (39" Long) .....
1	W-6428	(.5 - .5) Mfd. ....	1	G1-24398	Junction Block .....
1	W-4313A	(.5) Mfd. ....	4	W-4313A	(.5) Mfd. ....
1	W-22244	(.02 - .002) Mfd. ....	1	W-20448	(.1) Mfd. ....
1	W-22816B	(.0015 - .02 - .0005) Mfd. ....	1	W-22244	(.02-.002) Mfd. ....
1	W-24282	(20) Mfd. (Filter Cond.) ....	1	W-22816B	(.0015-.02-.0005) Mfd. ....
		<b>Resistances</b>	1	W-24282	Filter Condenser .....
1	W-21875	100,000-ohm (Brown Body, Black Tip, Yellow Dot.)....	1	W-22967A	Fixed Resistance, 1000 ohm-100 Ohm .....
1	W-21454	1 - Meg. (Brown Body, Black Tip, Green Dot.)....	1	W-21453	40,000 ohms (Yellow body, black tip, orange dot.)....
1	W-5794	6,500-ohm (Blue Body, Green Tip, Red Dot.)....	1	W-21454	1 megohm (Brown body, black tip, green dot.)....
1	W-21453	40,000-ohm (Yellow Body, Black Tip, Orange Dot.)..	2	W-21875	100,000 ohms (Brown body, black tip, yellow dot.)....
1	W-22215	3 - Meg. (Orange Body, Black Tip, Green Dot.)....	1	W-7159	4,400 -ohms (Yellow body, yellow tip, red dot.)....
1	W-7159	4,400 (Yellow Body, Yellow Tip, Red Dot.) .....	1	W-22215	3 megohms (Orange body, black tip, green dot.)....
1	G1-23300	.22-ohm .....	1	W-5794	6,500 .ohms (Blue body, green tip, red dot.)....
1	W-24691	(100-1,100) ohm .....	1	W-21964	165 ohms, flexible (Brown body, blue tip, green dot.)
		<b>Shipping List</b>	3	G1-23472	Knob .....
3	W-24675	Tube Shield Cap .....	1	G1-23300	Fixed Resistance "A" Bat.
3	G1-23472	Knob .....	1	B-22926	Tube Shield Cover .....
1	L-23834	No. 234 U Speaker .....	1	L-23204	Ornament & Shadow Box...
	L-24127	(1N) Cabinet Assy. ....	1	W-23424	Shadow Box .....
	L-24670	(1RC) Cabinet Assy. ....	1	L-23834	234 U Speaker .....
			1	L-23856	1 P Cabinet .....
			1	L-24294	1 RB Cabinet .....

# MODEL 28

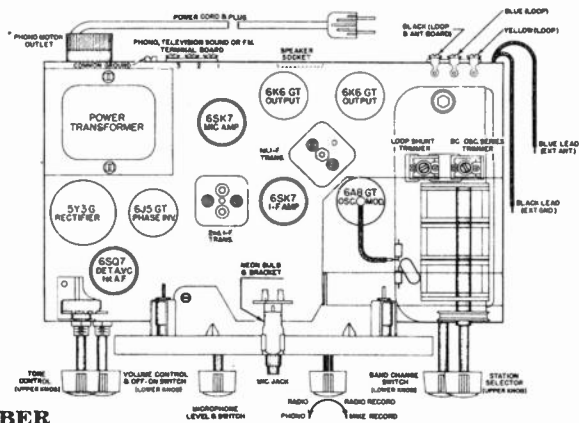
## RADIO RECEIVER ALIGNMENT PROCEDURE

### PRELIMINARY

Output Meter Connections.....	Plate to Plate of 6K6G's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Tone Control.....	Treble or Speech
Position of Function Switch.....	Radio
Position of Mike Level Control.....	All the Way to Left (Off)

### ALIGNMENT PROCEDURE CHART

Signal Generator		Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.			Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.			Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.			Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment								
5.	.0002 MF.	1400 Kc.			Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.			Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.			Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.			Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.			Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.



TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6SK7—Pre-Amp.....	0	0	.....	.....	0	J. B.	*6.3	52
6A8GT—Osc.-Mod.....	0	0	198	76.5	0	132	*6.3	1
6SK7—I. F. Amp.....	0	0	2.4	0	2.3	76.5	*6.3	226
6SQ7—Det. A. V.C.-A. F.....	0	0	0	0	0	98	*6.3	0
6J5GT—Phase Invert.....	0	0	118.5	0	0	J. B.	*6.3	6.0
6K6G—Output.....	0	0	226	236	0	J. B.	*6.3	15.5
6K6G—Output.....	0	0	226	236	0	J. B.	*6.3	15.5
5Y3G—Rectifier.....	NC	310	J. B.	*300	J. B.	*300	J. B.	310

\*Measure with A. C. Voltmeter.

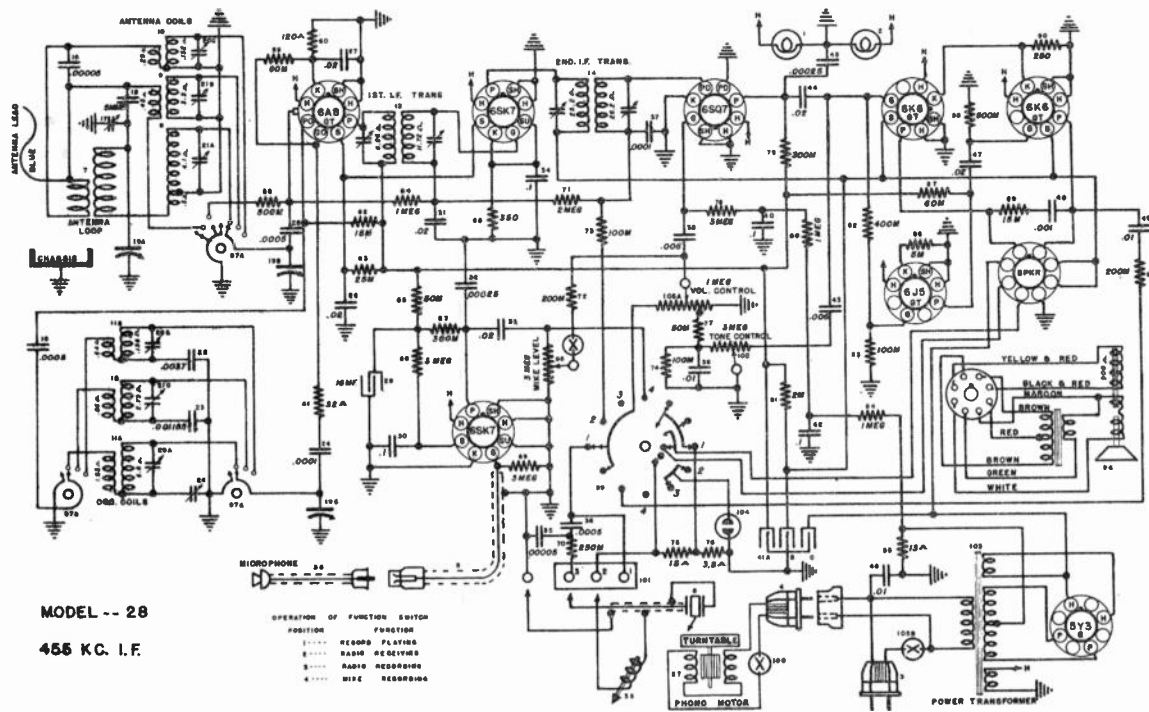
MAX. POWER OUTPUT @ 117.5 V. LINE.....	5.0 Watts
POWER CONSUMPTION @ 117.5 V. LINE.....	66 Watts (Radio Only)
TOTAL POWER CONSUMPTION @ 117.5 V. LINE.....	110 Watts (Including Phono Motor)
DROP ACROSS SPEAKER FIELD.....	74 Volts

Voltagages may vary 10% of values given.

J. B.—JUNCTION BLOCK

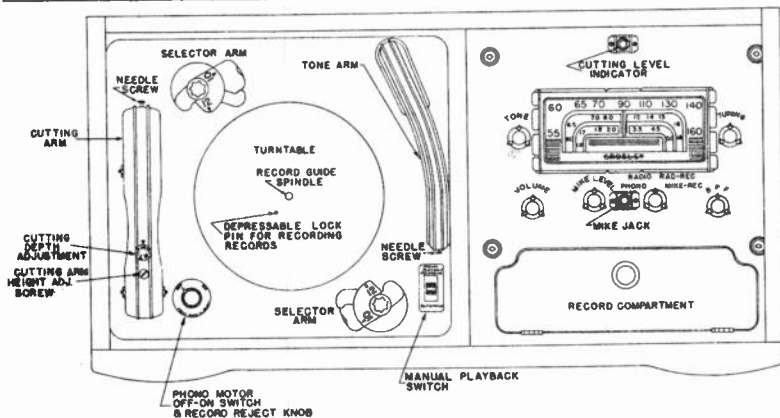
N. C.—NO CONNECTION

MODEL 28



MODEL -- 28  
455 KC. I.F.

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43587	Dial Lamp	50	NONE		105	47783	Vol. Cont. (3 Meg.) & Sw.
2	43587	Dial Lamp	51	NONE			130094	Dial Face & Escutcheon
3	G7-4267	Dial Light Socket Assy.	52	NONE			130259	Escutcheon Only
	46785	Power Cord & Plug (Radio)	53	NONE			130260	Dial Face Only
4	190857	Power Cord & Plug (Motor)	54	NONE			MG3-130554	Dial Back Plate Assy.
5	G23-34408	Cable & Socket for Mike	55	NONE	Cutting Head (Magnetic)		GW-130138	Pointer Shaft Assy.
6	130618	Crystal Cartridge (Tone Arm)	56	130648	Microphone		130125	Pointer (Dial Hand)
			57	130655	Phono Motor—110V.—60 Cycle		G40-41552	Drive Cord (2 1/2"-In.)
7	G1-130234	Loop Antenna Assy.	58	36322	Resistor 500,000 Ohm 1/4 W.		180195	Spring-Cord Tension
8	G12-32001	Prescaler Coil (5. C.)	59	35228	Resistor 50,000 Ohm 1/4 W.		130012	Gang & Tube Shield
9	G22-32000	Antenna Coil—1.6-5.0 Mc	60	130111	Resistor 150 Ohm 1/4 W.		23630	Neon Tube Clamp
10	G23-32000	Antenna Coil—6.0-18 Mc	61	45881	Resistor 32 Ohm 1/4 W.		130813	Lockplate—Wall Tap
11	G23-32005	Dual Oscillator Coil—Dual A—650-1800 Kc. 6.0-18.0 Mc.	62	47819	Resistor 15,000 Ohm 1/4 W.		130252	Wall Tap—Phono Plug
			63	47819	Resistor 25,000 Ohm 1/4 W.		AW	Cabinet Shipping Carton
			64	35402	Resistor 1 Megohm 1/4 W.		130699	Escutcheon—Neon Indic. & Mike Jack
			65	40757	Resistor 50,000 Ohm 1/4 W.		130824	No. 2x1/2 Screw—Escut. (Neon, Dial Ect.) Mtg.
			66	36638	Resistor 3 Megohm 1/4 W.		180197	Knob (4 Req.)
			67	35601	Resis. 300,000 Ohm 1/4 W.		130426	R. H. Chassis Mtg. Strap
			68	35816	Resistor 250 Ohm 1/4 W.		130423	L. H. Chassis Mtg. Strap
			69	36638	Resistor 3 Megohm 1/4 W.		130425	Bracket Chassis Mtg.
			70	38976	Resis. 250,000 Ohm 1/4 W.		45580	Rubber Grommet, Chassis Mtg. (6)
			71	35270	Resistor 200,000 Ohm 1/4 W.		49796	Headed Bushing Chassis Mtg. (6)
			72	35270	Resistor 200,000 Ohm 1/4 W.		47728	Dec. Washer (F3-88) Chassis Mtg. (6)
			73	35400	Resistor 100,000 Ohm 1/4 W.		47761	OV. Hd. Screw (F3-18) Chassis Mtg. (6)
			74	35400	Resistor 100,000 Ohm 1/4 W.		23880	Thumb Screw—Chassis Mtg.
			75	130655	Resistor 15 Ohm 2W.		49985	L. H. Chassis End Plate
			76	130654	Resistor 3.5 Ohm 1/4 W.		49984	R. H. Chassis End Plate
			77	40757	Resistor 50,000 Ohm 1/4 W.		130312	Chassis Bottom
			78	35688	Resistor 3 Megohm 1/4 W.		49674	Socket—3 Prong
			79	35601	Resistor 300,000 Ohm 1/4 W.		47781	Base Tube Shield
			80	35622	Resistor 1 Megohm 1/4 W.		130594	Shield Tube Socket
			81	23013	Resistor 2,000 Ohm 1/4 W.		130222	Bracket—Loop Mtg. (2)
			82	36321	Resistor 400,000 Ohm 1/4 W.		49176	Clamp—Elect. Cond. Mtg.
			83	35620	Resistor 100,000 Ohm 1/4 W.		48797	Antenna Board
			84	35602	Resistor 1 Ohm 2W.		130563	Recorder—Automatic Changer Unit—110V.—60 Cycle
			85	130841	Resistor 13 Ohm 1/4 W.		130884	Recorder—Automatic Changer Unit—220V.—60 Cycle
			86	49945	Resistor 5,000 Ohm 1/4 W.		130885	Recorder—Automatic Changer Unit—110V.—60 Cycle
			87	35323	Resistor 60,000 Ohm 1/4 W.		47329	Play Back Needles (10)
			88	36322	Resistor 50,000 Ohm 1/4 W.		MG28-130610	Cutting Stylus (Needle)
			89	36118	Resistor 15,000 Ohm 1/4 W.		130647	Screw—Cutting Needle Clamp
			90	49708	Resistor 250 Ohm 2W.		130648	Screw—Tone Arm Needle Clamp
			91	35990	Resistor 200,000 1/4 W.		130460	Protector & Polishing Cloth
			92	NONE			130829	Needle Package Holder
			93	NONE			MG28-130644	Plate Assy.—Mike Socket
			94	NONE				
			95	NONE				
			96	G2-130146	Speaker & Plug			
			97	48219	Bracket—Spkr. Mtg. (4) Bskr. Mtg. (4)			
			98	130689	Band Change Switch			
			99	130646	Function Change Switch			
			100	130856	Phono Motor Switch			
			101	G60-26719	Terminal Board (Phono Connect.)			
			102	130741	Tone Control (3 Meg.)			
			103	49986	Bracket—Tone Cont. Mtg.			
			104	130740	Power Trans.—110V.—60 Cycle.			
				130804	Neon cutting Level Indicator			



# MODEL 29 CHASSIS

## ALIGNMENT PROCEDURE

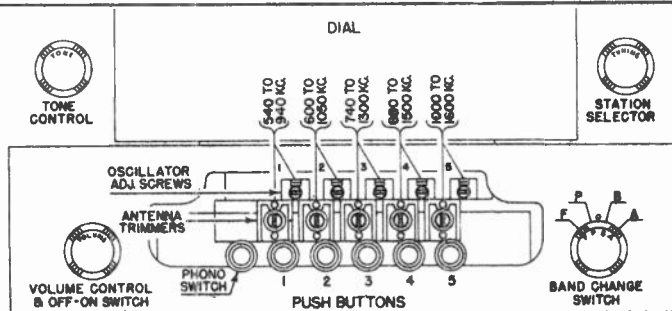
### Preliminary

- Output Meter Connections.....Plate to Plate of 6F6's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. R-F Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and R-F Trimners	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and R-F Trimners	Adjust for maximum output while rocking gang thru signal.

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



**BAND CHANGE SWITCH DESIGNATIONS**  
 A-AUTOMATIC ELECTRIC TUNING, BROADCAST BAND 550 TO 1600 KC.  
 B-MANUAL TUNING, BROADCAST BAND 550 TO 1600 KC.  
 P-MANUAL TUNING, POLICE & AMATEURS 1600 TO 3000 KC.  
 F-MANUAL TUNING, FOREIGN (SHORT WAVE) 3 TO 18 MC.

### SOCKET VOLTAGES MEASURED @ 117 WITH 1000 OHM PER VC

TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6K7GT—R. F. Amp.....	0	0	187	75	0	J. B.	*6.3	2
6A8GT—Osc.-Mod. ....	0	0	187	75	0	130	*6.3	1
6SK7—I. F. Amp. ....	0	0	2.3	0	2.3	78	*6.3	228
6SQ7—Det. A.V.C.-A. F. ....	0	0	0	0	0	110	*6.3	0
6J5GT—Phase Invert. ....	0	0	120	0	0	J. B.	*6.3	5.5
6F6G—Output .....	0	0	220	230	0	J. B.	*6.3	14.5
6F6G—Output .....	0	0	220	230	0	J. B.	*6.3	14.5
5Y3G—Rectifier .....	NC	329.0	J. B.	*358.0	J. B.	*358	J. B.	329.0

\*Measure with A. C. Voltmeter.

MAX. POWER OUTPUT @ 117.5 V. LINE..... 8.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE.....85 Watts  
 DROP ACROSS SPEAKER FIELD.....95.0 Volts

Voltagcs may vary 10% of values given.

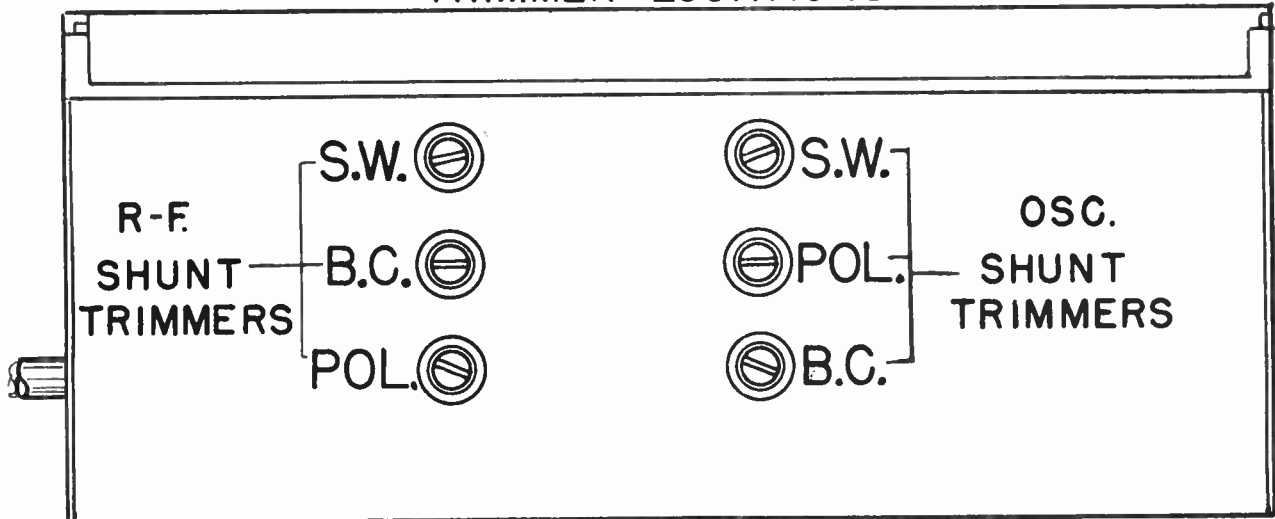
J. B.—JUNCTION BLOCK

N. C.—NO CONNECTION





# MODEL 29 TRIMMER LOCATIONS



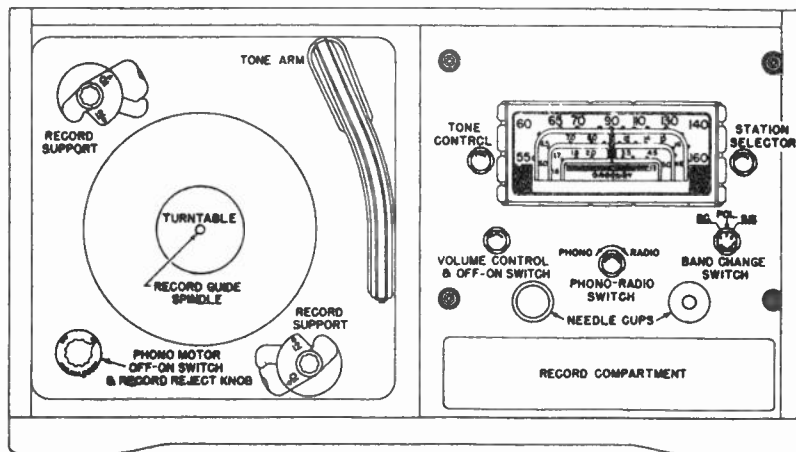
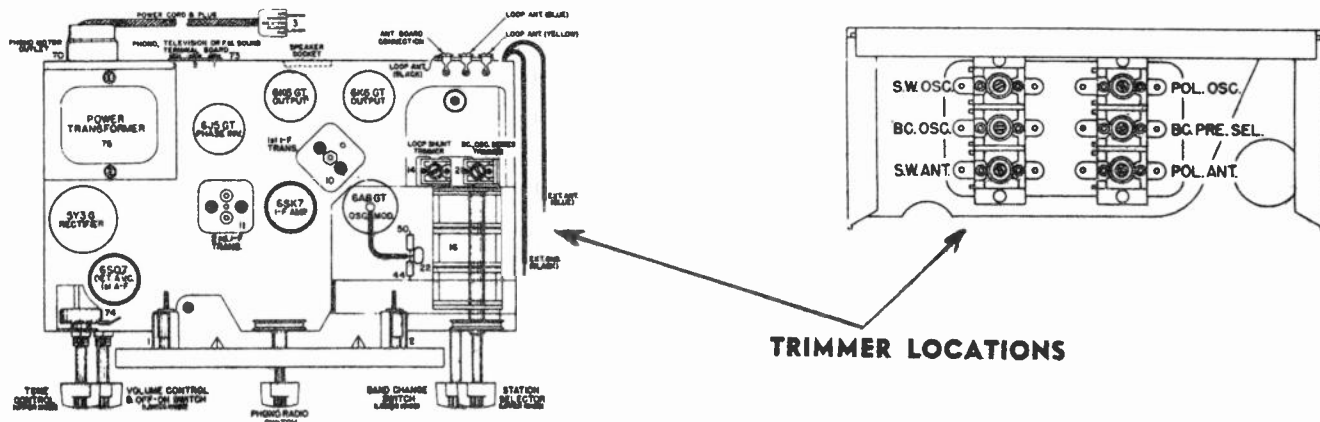
## PARTS LIST — MODEL 29

Diagram No.	Part No.	DESCRIPTION	Diagram No.	Part No.	DESCRIPTION	Diagram No.	Part No.	DESCRIPTION
1	43567	Dial Light Bulb	36	G21-34002	Cond. 600 MMF.—Mica	95	G50-26719	Terminal Board (Phono)
2	43567	Dial Light Bulb	37	G21-34002	Cond. 600 MMF.—Mica	96	49881	Shorting Jumper
	G7-49637	Socket Assy.—Dial Light	38	30805	Cond. .01 MF.—400V.—Tubular	96	130741	Tone Control (3 Meg.)
3	45769	Power Cord and Plug				97	49986	Tone Control Mtg. Brkt.
4	G2-130234	Loop Antenna Assy.—550-1600 Kc.	39	G3-34002	Cond. 500 MMF.—Mica	97	130191	Power Trans.—117 Volt—60 Cycle
5	G225-32000	Ant. Coil—1.6-5.0 Mc.	40	G2-34002	Cond. 100 MMF.—Mica	98	130192	Vol. Control (1 Meg.) & Switch
6	G224-32000	Ant. Coil—6.0-18.0 Mc.	41	G3-34002	Cond. 500 MMF.—Mica	99	None	
7A	G114-32001	R-F Coil—550-1600 Kc.	42	45780	Cond. .02 MF.—160V.	100	41461	Cond. .0014 MF.—200V.
7B		R-F Coil—6.0-18.0 Mc.	43	50105	Cond. .1 MF.—160V.	101	G17-34002	Cond. 300 MMF.—Mica
8	G115-32001	R-F Coil—1.6-5.0 Mc.	44	50105	Cond. .1 MF.—160V.	102	G11-34002	Cond. 175 MMF.—Mica
9A	G241-32002	Osc. Coil—550-1600 Kc.	45	130246	Cond.—3 sec. electrolytic	103	45780	Cond. .02 MF.—160V.
9B		Osc. Coil—6.0-18.0 Mc.				104	36322	Resist. 500,000 Ohm 1/2 W.
10	G242-32002	Osc. Coil—1.6-5.0 Mc.	46	30488	Cond. .02 MF.—400V.	105	35928	Resistor 60,000 Ohm 1/2 W.
11	G234-32002	Osc. Coil—P.B.—540-940 Kc.	47	50105	Cond. .1 MF.—160V.	106	130818	Crystal Cartridge
12	G235-32002	Osc. Coil—P.B.—600-1050 Kc.	48	45780	Cond. .02 MF.—160V.	107	130819	Phono Motor—110V-60Cy Cabinet
13	None		49	30488	Cond. .02 MF.—400V.		BA	Ship. Carton—BA Cabt. Cabinet (Double Front)
14	G237-32002	Osc. Coil—P.B.—740-1300 Kc.	50	30270	Cond. .001 MF.—400V.		AT	Ship. Carton—AT Cabt. Cabinet, Protector & Polishing Cloth
15	G238-32002	Osc. Coil—P.B.—880-1500 Kc.	51	G2-34002	Cond. 100 MMF.—Mica		130642	Dial Face & Escutcheon
16	G239-32002	Osc. Coil—P.B.—1000-1600 Kc.	52	G6-34002	Cond. 25 MMF.—Mica		47728	Deco. Washer—Chassis Brkt. Mtg. (FS-18)
	49859	Iron Core Slug—P.B. Osc. (6)	53	30488	Cond. .02 MF.—400V.		47761	210—32x3/4" Phil. Hd. Screw—Chassis Brkt. Mtg. (FS-18)
17	G246-32004	1st I-F Assy. 455 Kc.	54	45810	Cond. .006 MF.—160V.		130423	R. H. Brkt. Assy. Chassis Mtg.
18	G240-32004	2nd I-F Assy. 455 Kc.	55	34713	Con. .011 MF.—160V.		130426	L. H. Brkt. Assy. Chassis Mtg.
19	None		56	48993	Con. .011 MF.—160V.		45560	Rubber Grommet—Chassis Mtg. (6 req.)
20	49932	Cond. B.C. Ant. (for loop) Trimmer	57	48993	Con. .011 MF.—160V.		49796	Headed Bushing—Chassis Mtg. (6 req.)
21	G5-34002	Cond. 50 Mmf.—Mica	58	G1-34002	Cond. 250 MMF.—Mica		130519	Automatic Record Changer Instructions
22			59	None			130839	Holder—Needle Package
22A	49933	Cond.—P.B.—Padder—540-940 Kc.	60	None			130158	Screw—Holder Mtg.
22B	49934	Cond.—P.B.—Padder—600-1050 Kc.	61	38916	Resistor 350 Ohm 1/2 W.		130312	Chassis Bottom
22C	None		62	35602	Resistor 1 Megohm 1/2 W.		35066	Screw—Bottom Mtg.
22D	49936	Cond.—P.B.—Padder—740-1300 Kc.	63	45981	Resistor 32 Ohm 1/2 W.		0-8	Washer—Bottom Mtg.
22E	49937	Cond.—P.B.—Padder—880-1500 Kc.	64	130311	Resistor 120 Ohm 1/2 W.		47791	Needle Cup (FS88)
22F	49938	Cond.—P.B.—Padder—1000-1600 Kc.	65	35928	Resistor 60,000 Ohm 1/2 W.		47790	Needle Cup Lid (FS88)
	45580	Rubber Grommet—Tuning and P.B. Unit Mtg.	66	49702	Resistor 20 Ohm 1/2 W.		47339	Package of 10 Needles
	49796	Headed Bushing—Tuning and P.B. Unit Mtg.	67	35930	Resis. 200,000 Ohm 1/2 W.		130186	Station Call Tab Sheets
23A	37986-A	Cond.—Pol. Ant. Trim.	68	35602	Resistor 1 Megohm 1/2 W.		130187	Cellu. Cover—Call Tab
23B		Cond.—S.W. Ant. Trim.	69	37377	Resistor 20,000 Ohm 1 W.		130160	Push Button (6 req.)
24	49929	Var. Tuning Gang Cond.	70	35602	Resistor 1 Megohm 1/2 W.		49176	Clamp Elect. Cond. Mtg.
25A	35951	Cond.—B.C. Osc. Trim.	71	35602	Resistor 1 Megohm 1/2 W.		MG9-130242	Dial Back Plate (Shadow Box)
25B		Cond.—Pol. Osc. Trim.	72	47819	Resistor 15,000 Ohm 1 W.		130138	Pointer Shaft Assy.
25C		Cond.—S.W. Osc. Trim.	73	130488	Resistor 1500 Ohm 1/2 W.		49829	Spring—Pointer Shaft Retaining
26	G17-34005	Cond. 3700 MMF.—Mica	74	49945	Resistor 5,000 Ohm 1/2 W.		130125	Dial Pointer
27	G14-34005	Cond. 1185 MMF.—Mica	75	38916	Resistor 350 Ohm 1/2 W.		130012	Shield—Cond. Gang
28	130108	Cond.—B.C. Osc. Series Trimmer	76	35927	Resistor 2 Megohm 1/2 W.		23880	Thumb Screw—Shield Mtg.
29	G3-34002	Cond. 500 MMF.—Mica	77	23013	Resistor 2,000 Ohm 1/2 W.		130147	Push Button Escutcheon
30	45780	Cond. .02 MF.—160V.—Tubular	78	35928	Resistor 60,000 Ohm 1/2 W.		130324 (FS-77)	Screws—P.B. Escut. Mtg. (4 req.)
31	G6-34002	Cond. 25 MMF.—Mica	79	35930	Resis. 200,000 Ohm 1/2 W.		130158 (FS-77)	Screws—Dial & Escut. Mtg. (6 req.)
32	G3-34002	Cond. 500 MMF.—Mica	80	36321	Resis. 400,000 Ohm 1/2 W.		48797	Antenna Board
33	None		81	35601	Resis. 300,000 Ohm 1/2 W.		130197	Knob—(4 req.)
34	G3-34002	Cond. 500 MMF.—Mica	82	35600	Resis. 100,000 Ohm 1/2 W.			
35A		Cond. R-F Trim.—B.C.	83	36688	Resistor 3 Megohm 1/2 W.			
35B	35951	Cond.—R-F Trim.—Pol.	84	36322	Resis. 500,000 Ohm 1/2 W.			
35C		Cond.—R-F Trim.—S.W.	85	36761	Resistor 40,000 Ohm 1/2 W.			
			86	36760	Resistor 20,000 Ohm 1/2 W.			
			87	49703	Resistor 250 Ohm 2 W.			
			88	None				
			89	None				
			90	None				
			91	G3-130328	Speaker			
				49219	Bracket—Spkr. Mtg. (4 req.)			
				49853	Rubber Grommet—Spkr. Mtg. (4 req.)			
				47219	Headed Bushing—Spkr. Mtg. (4 req.)			
			92	130487	Band Selector Switch			
			93	130428	Push Button Switch only			
			94	G58-26719	Terminal Board (Loop Connections)			

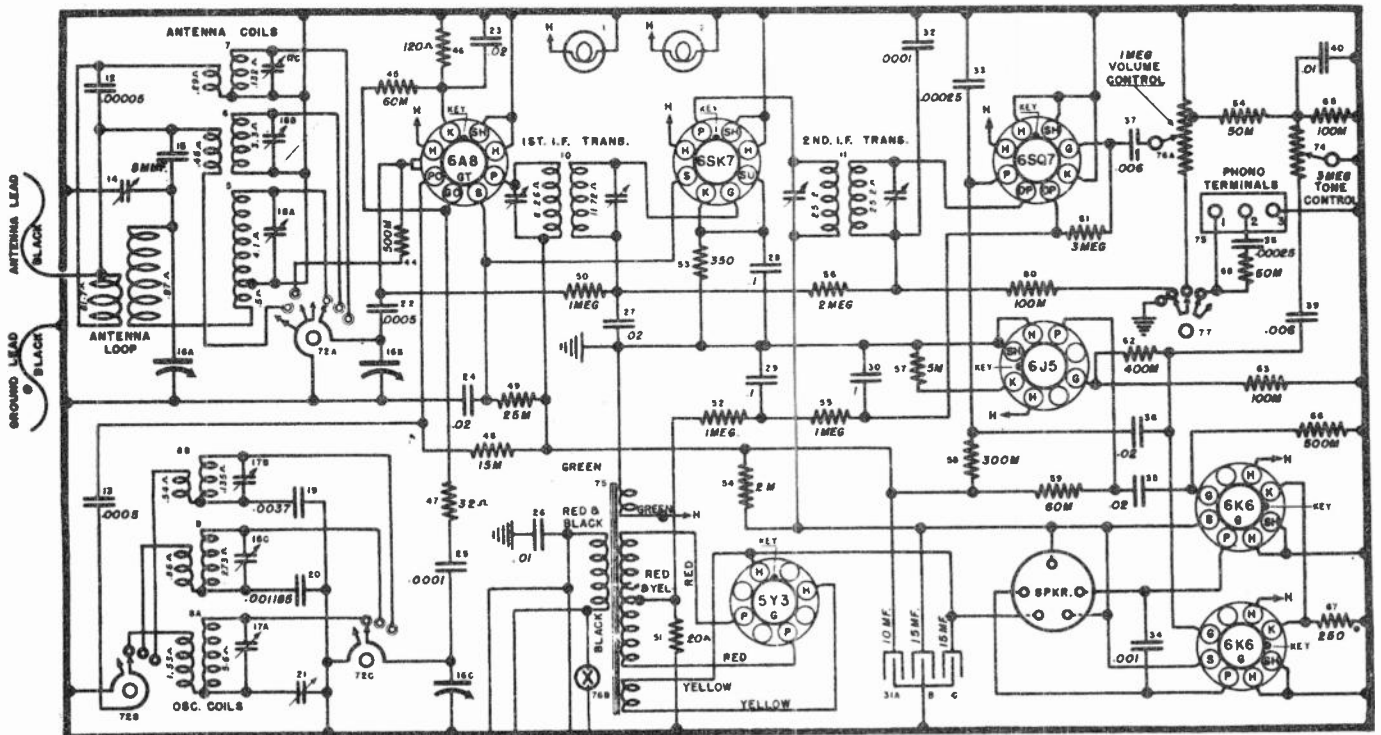
# MODEL J30BC

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output; do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

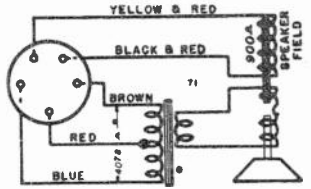


# MODEL J30BC

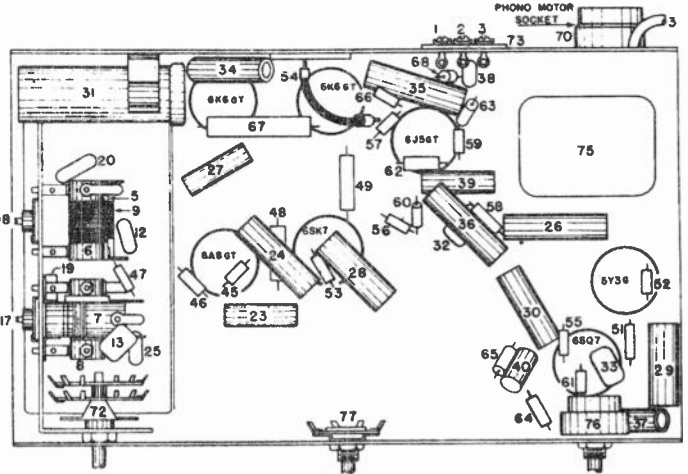


## WIRING DIAGRAM 455 K.C. I.F.

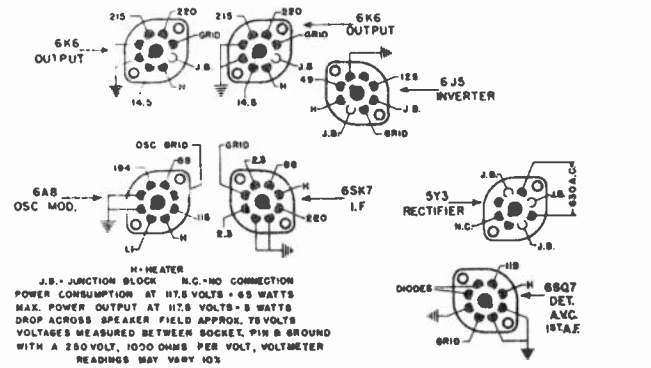
FOR TELEVISION SOUND OR F.M. SOUND  
USE TERMINALS NO. 1 & 3 OF PHONO  
TERMINAL BOARD, WITH PHONO-RADIO  
SWITCH IN PHONO POSITION



Item No.	Part No.	Description
2-1	43587	Dial Light
3	48769	Pr. Cord & Plug
4	MG-23-130243	Loop Ant.
5	G112-32001	B. C. Preselector Coil
6	G222-32000	Pol. Ant. Coil
7	G223-32000	S. W. Ant. Coil
8	G232-32002	S. W.-B. C. Osc. Coil
9	G233-32002	Pol. Osc. Coil
10	G246-32004	1st I. F. Trans.
11	G240-32004	2nd I. F. Trans.
12	G5-34002	.00005 Mf. Mica
22-13	G3-34002	.0005 Mf. Mica
14	130107	Loop Trimmer
15	G8-34002	.00001 Mf. Mica
16	49929	Tuning Cond. Assem.
18-17	35851	3 Section Trimmer
19	G17-34005	.0037 Mf. Mica
20	G14-34005	.001185 Mf. Mica
21	130108	Osc. Series Padder
36-35-27-24-23	30488	.02 Mf. 400 V.
32-25	G2-34002	.0001 Mf. Mica
40-26	30805	.01 Mf. 400 V.
30-29-28	50105	.1 Mf. 160 V.
31	49773	Filter Cond.
		15-15 @ 450 10 @ 250
33	G1-34002	.00025 Mf. Mica
34	30270	.001 Mf. 400 V.
39-37	34713	.008 Mf. 100 V.
38	G1-34002	.00025 Mf. Mica
66-44	36322	1/2 Meg. 1/2 W.
59-45	35928	60,000 ohm 1/2 W.
46	130311	120 ohm 1/2 W.
47	45981	32 ohm 1/2 W.
48	47819	15,000 ohm 1 W.
49	130318	25,000 ohm 1 W.
55-52-50	35602	1 Meg. 1/2 W.
51	49702	20 ohm 1/2 W.
53	38916	350 ohm 1/2 W.
54	23013	2000 ohm 1/2 W.
56	35927	2 Meg. 1/2 W.
57	49945	5 Meg. 1/2 W.
58	35501	300,000 ohm 1/2 W.
65-63-60	35500	100,000 ohm 1/2 W.
61	36688	3 Meg. 1/2 W.
62	36321	400,000 ohm 1/2 W.
68-64	40757	50,000 ohm 1/2 W.
67	49703	250 ohm 2 W.
70	130252	A. C. Outlet
71	130146	Speaker
72	49941	Band Switch
73	G58-26719	Phone Terminal
74	130741	Tone Control
75	49789	Pr. Trans.
76	47783	Vol. Cont. & Sw. (1 Meg.)
	130125	Pointer (Dial Hand)
	130260	Dial Face
	130259	Escutcheon
	130153	Knob (Tuning)
	130154	Knob (Vol. Control)
	130155	Knob (Tone Control)
	130253	Knob (Band Sw.)
	130254	Knob (Phono-radio)



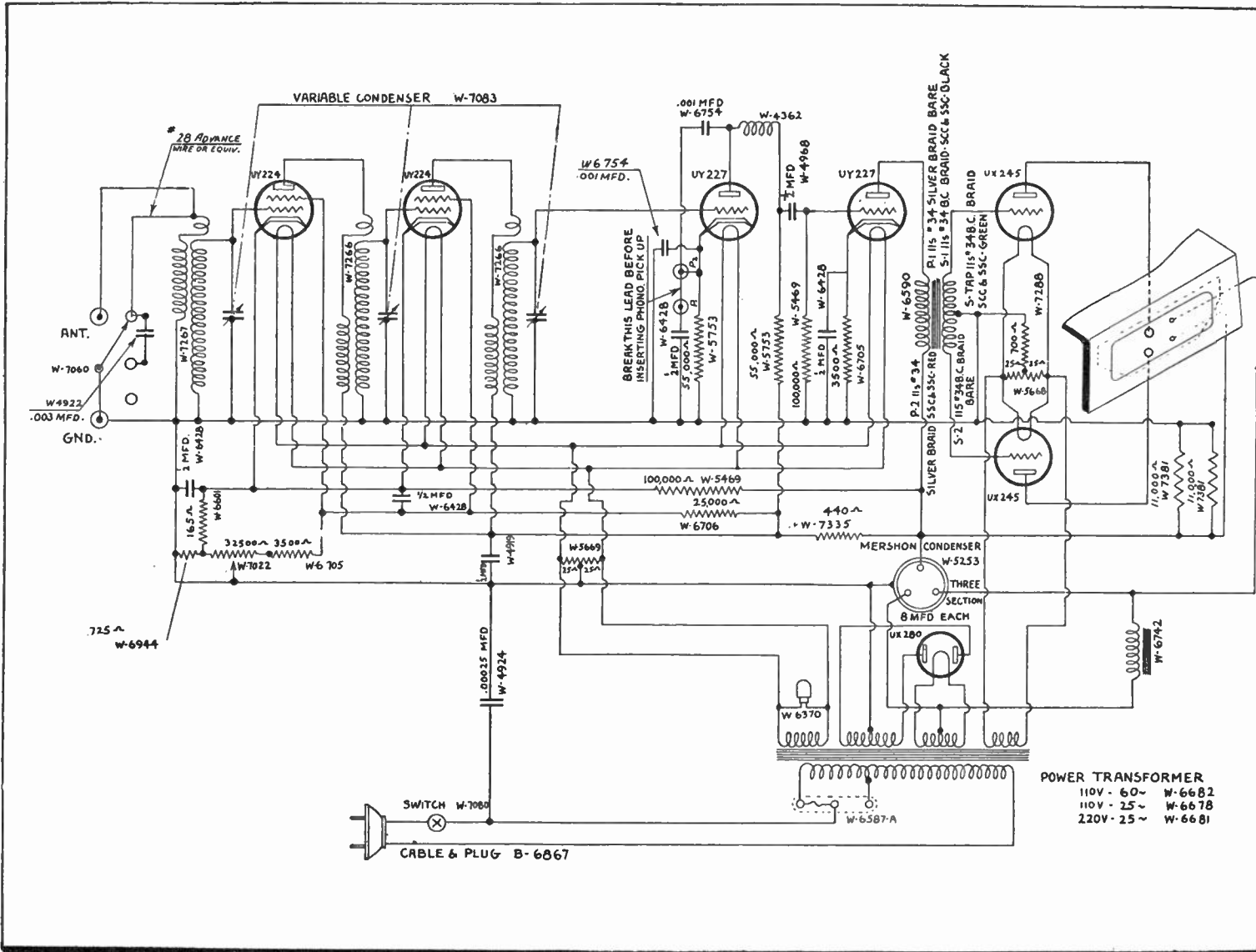
## BOTTOM VIEW OF CHASSIS



61

# Models 30-S, 31-S, 33-S and 34-S

For Operation from Alternating Current House-Lighting Circuits



**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**

# MODELS 31BF

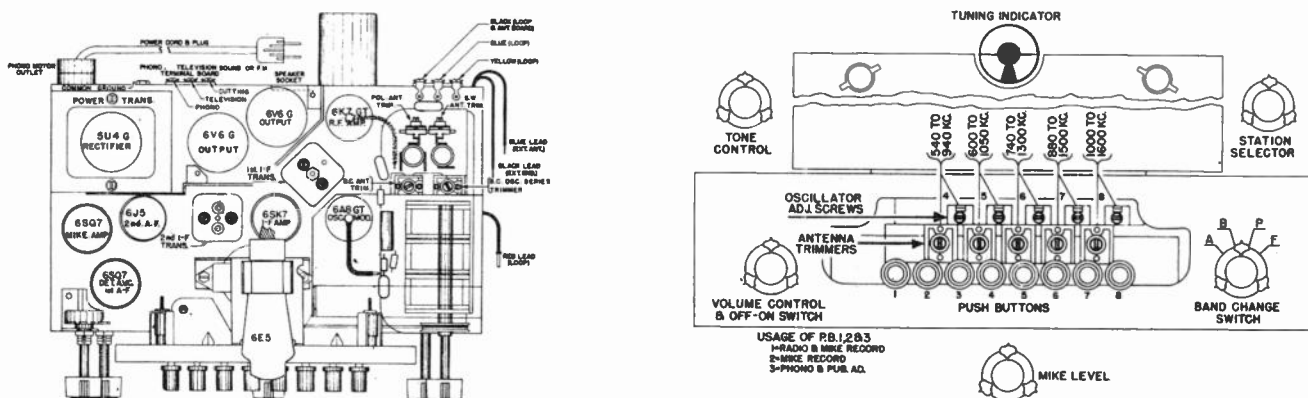
## RADIO RECEIVER ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections.....Plate to Plate of 6V6G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Mike Level Control.....All the Way to Left (Off)

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output. Do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.

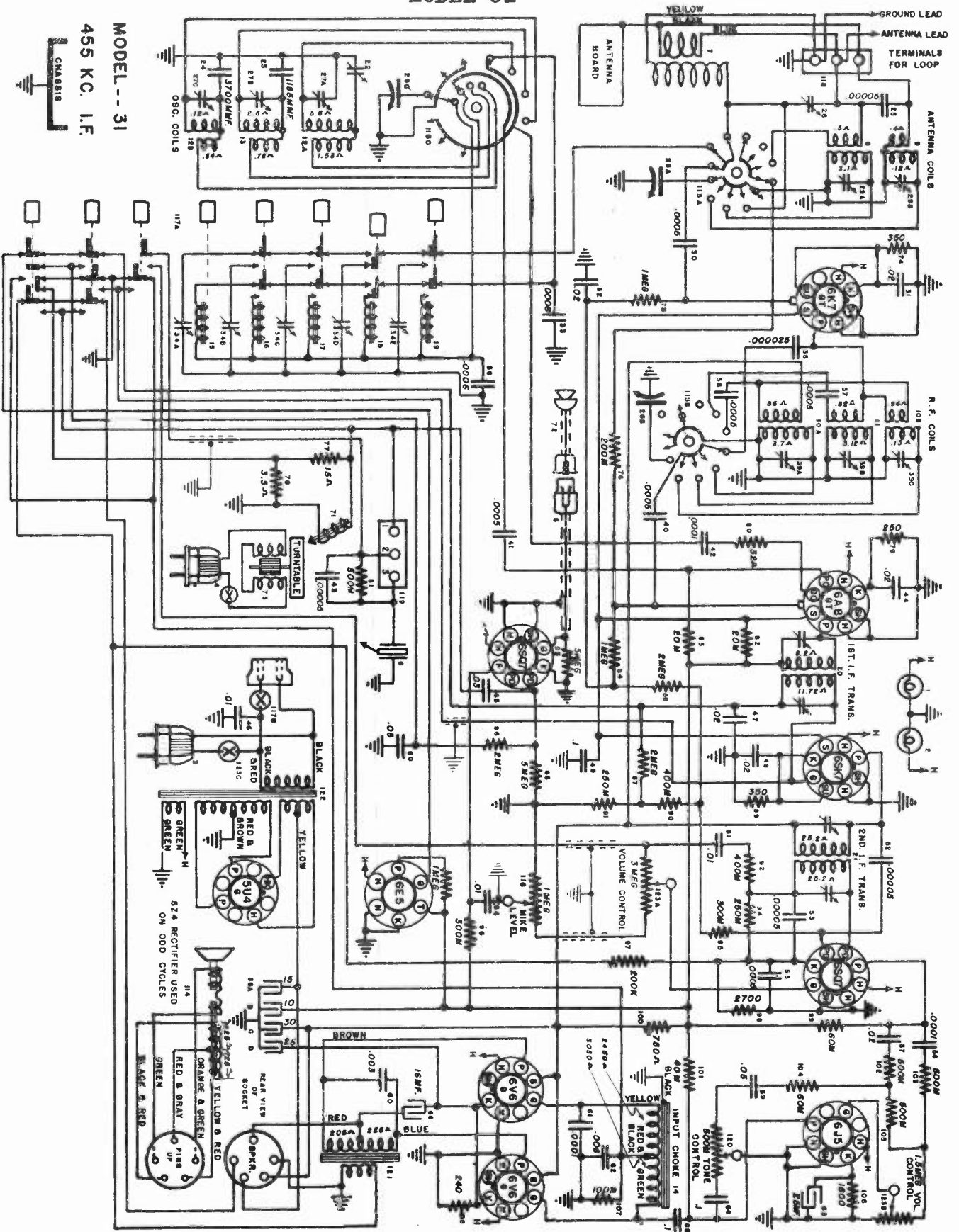


TUBE	FUNCTION	1	2	3	4	5	6	7	8
6K7GT	R.F. Amplifier.....	GND.	GND.	280	110	3.25	J.B.	*6.5	3.25
6A8GT	Osc.-Mod.....	GND.	GND.	260	110	—NEG.	135	*6.5	3.00
6SK7	I-F Amplifier.....	GND.	GND.	GND.	GRID	3.6	110	*6.5	280
6SQ7	Det.-A.V.C.-1st A-F.....	GND.	GND.	1.75	A.V.C. DIODE	AUDIO DIODE	220	*6.5	GND.
6J5	Driver.....	GND.	6.5	145	J.B. 265	GRID	J.B. A.V.C.	GND.	4.85
6V6G	Output.....	GND.	GND.	300	280	GRID	J.B.	*6.5	18.5
6V6G	Output.....	GND.	GND.	300	280	GRID	J.B.	*6.5	18.5
6SQ7	Mic. Amp. & Ind. Rect...	GND.	GND.	GND.	LEVEL DIODE	N.C.	85	*6.5	GND.
6E5	Indicator—(Tun.-Level)								
5U4G	Rectifier.....								

\*Measured with A.C. Voltmeter. N.C.=No Connection. GND.=Ground. J.B.=Junction Block.  
 MAXIMUM POWER OUTPUT @ 117.5 V. Line=20 Watts @ Voice Coil.  
 POWER CONSUMPTION @ 117.5 V. Line = Radio 115 Watts + Phono Motor 35 Watts = 150 Watts, Total.  
 DROP ACROSS SPEAKER FIELD: Red/Black to Red/Gray = 25 Volts.  
 Red/Gray to Red/Yellow = 45 Volts.

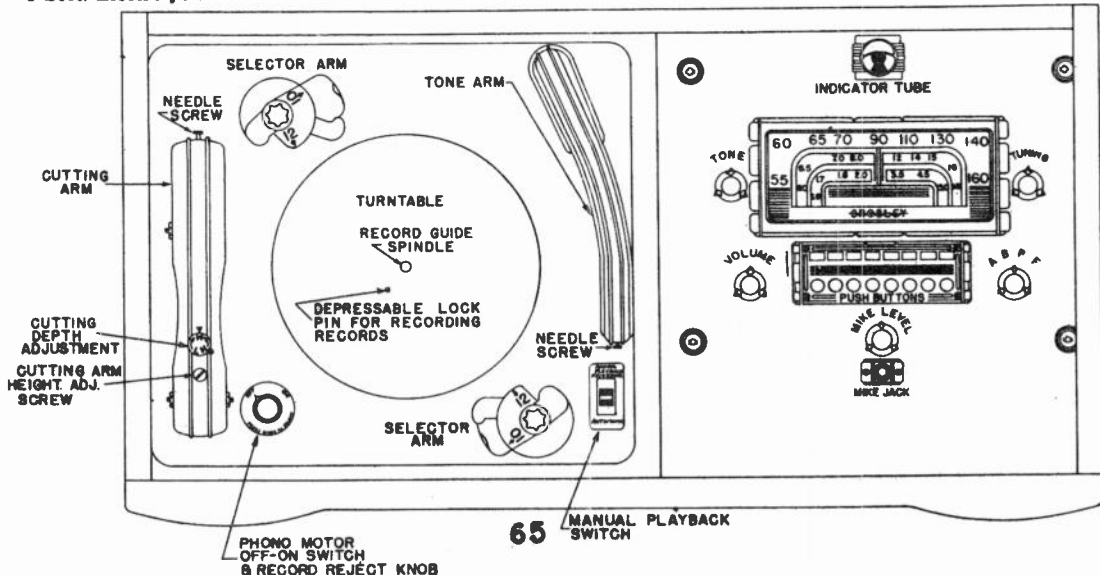
# WIRING DIAGRAM MODEL 31

MODEL-- 31  
455 KC. I.F.  
CHASSIS



PARTS LIST — MODEL 31

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light			Sect. A—15 MF.—450 V.	130125		Pointer (Dial Hand)
2	43567	Dial Light			Sect. B—10 MF.—300 V.	G40-41582		Drive Cord (25½ in.)
3	G7-49637	D. L. Socket Assy.			Sect. C—30 MF.—450 V.	130195		Spring (Cord Tension)
	45769	Power Cord & Plug			Sect. D—25 MF.—25 V.	130012		Gang & Tube Shield
		(Radio)	57	45780	Cond. .02 MF.—160 V.	23880		Thumb Screw
4	130857	Power Cord & Plug	58	G2-34002	Cond. 100 MMF.—Mica	130252		Lockplate—Wall Tap
		(Motor)	59	45817	Cond. .05 MF.—160 V.	BF		Cabinet
5	G294-34403	Shielded Lead & Socket	60	25435	Cond. .003 MF.—400 V.	130759		Shipping Carton
		(Mike)	61	G2-34002	Cond. 100 MMF.—Mica	130624		Escutcheon—Mike Jack
6	130818	Crystal Cart. (Tone Arm	62	45810	Cond. .006 MF.—160 V.	130158		2x½ Screw
7	G2-130234	Ant. Loop (550-1600 Kc)	63	130900	Cond. 25 MF.—10 V. Elec.	130197		Knob (5)
8	G225-32000	Ant. Coil (1.6 to 5.0 Mc.)	64	24049	Cond. .1 MF.—200 V.	130424		R. H. Chassis Mtg. Strap
9	G224-32000	Ant. Coil (6.0 to 18.0 Mc.)	65	24049	Cond. .1 MF.—200 V.	130427		L. H. Chassis Mtg. Strap
10	G114-32001	Dual R-F Coil	66			130425		Bracket Chassis Mtg.
		Sect. A—550 to 1600 Kc.	67			45580		Rubber Grommet
		Sect. B—6.0 to 18.0 Mc.	68					Chassis Mtg. (6)
11	G115-32001	R-F Coil (1.6 to 5.0 Mc.)	69			47728		Dec. Washer FS-88
12	G241-32002	Dual Osc. Coil	70					Chassis Mtg. (6)
		Sect. A—550 to 1600 Kc.	71	130854	Cartridge Cutter—Mag.	47761		Ov. Hd. Screw FS-18
		Sect. B—6.0 to 18.0 Mc.	72	130764	Microphone Crystal			Chassis Mtg. (6)
13	G242-32002	Osc. Coil (1.6 to 5.0 Mc.)	73	130870	Motor Phono (60-110 V.)	23880		Thumb Screw Chas. Mtg.
14	G1-130432	Input Trans. Choke	74	38916	Resistor 350 Ohm ½ W.	49984		R. H. End Plate
15	G234-32002	Osc. Coil P.B. (540-940 Kc.)	75	35602	Resistor 1 Megohm ¼ W.	49985		L. H. End Plate
			76	35930	Resist. 200,000 Ohm ¼ W.	130821		Chassis Bottom
16	G235-32002	Osc. Coil P.B. (600-1050 Kc.)	77	31264	Resistor 15 Ohm 3 W.	35066		Hex. Hd. M. Scr. (4)
			78	40378	Resistor 3½ Ohm 1 W.	O-8		Flat Washer FS-58 (4)
17	G237-32002	Osc. Coil P.B. (740-1300 Kc.)	79	51085	Resistor 250 Ohm ½ W.	L-8		Lockwasher (4)
			80	45981	Resistor 32 Ohm ¼ W.	49674		Socket—8 Prong
18	G238-32002	Osc. Coil P.B. (880-1550 Kc.)	81	36322	Resist. 500,000 Ohm ¼ W.	27981		Base—Tube Shield
			82	37377	Resistor 20,000 Ohm 1 W.	130594		Shield—Tube
19	G239-32002	Osc. Coil P.B. (1000-1600 Kc.)	83	37377	Resistor 20,000 Ohm 1 W.	130232		Brkt.—Loop Mtg. (2)
			84	35602	Resistor 1 Megohm ¼ W.	7662		Rd. Hd. Wood Scr. FS-58 (4)
20	G246-32004	1st I-F. Trans. 455 Kc.	85	35927	Resistor 2 Megohm ¼ W.			Cable Clamp
21	G240-32004	2nd I-F. Trans. 455 Kc.	86	35927	Resistor 2 Megohm ¼ W.	50069		Clamp—Elect. Cond. Mtg.
22	130108	Cond. Bc. Osc. Series	87	35927	Resistor 2 Megohm ¼ W.	130361		Antenna Board
		Trimmer	88	47131	Resistor 5 Megohm ¼ W.	48797		Plate Assy.—Mike Socket
23	G14-34005	Cond. 1185 MMF.—Mica	89	38916	Resistor 350 Ohm ½ W.	MG32-130756		Push Button Assy.
24	G17-34005	Cond. 3700 MMF.—Mica	90	36321	Resist. 400,000 Ohm ¼ W.	MG13-130756		Push Buttons (B)
25	G5-34002	Cond. 50 MMF.—Mica	91	38976	Resist. 250,000 Ohm ¼ W.	130160		Escutcheon—P. B.
26	49932	Cond. Trimmer	92	36321	Resist. 400,000 Ohm ¼ W.	130767		Ov. Csk. Hd. Wood Scr. (4)
27	35951	3 Sect. Osc. Shunt Trimmer Assy.	93	47131	Resistor 5 Megohm ¼ W.	130324		Rubber Grommet
			94	38976	Resist. 250,000 Ohm ¼ W.			Spk. Mtg. (4)
28	49929	3 Sect. Var. Tuning Gang Assem.	95	35601	Resist. 300,000 Ohm ¼ W.	49853		Headed Bushing
			96	35601	Resist. 300,000 Ohm ¼ W.	47219		Spk. Mtg. (4)
29	37986	Dual Ant. Shunt Trimmer Assem.	97	35930	Resist. 200,000 Ohm ¼ W.	37953		Flat Washer
			98	36316	Resist. 27,000 Ohm ¼ W.			Spk. Mtg. (4)
30	G3-34002	Cond. 500 MMF.—Mica	99	35928	Resist. 60,000 Ohm ¼ W.			Spk. Mtg. (5)
31	45780	Cond. .02 MF.—160 V.	100	23907	Resistor 750 Ohm 1½ W.	N-8		Hex. Nut FS-58
32	45780	Cond. .02 MF.—160 V.	101	36761	Resist. 40,000 Ohm ¼ W.			Spk. Mtg. (4)
33	G21-34002	Cond. 600 MMF.—Mica	102	36322	Resist. 500,000 Ohm ¼ W.	L-8		Lockwasher
34		5 P. B. Trimmers	103	36322	Resist. 500,000 Ohm ¼ W.			Spk. Mtg. (4)
	49933	A=540-940 Kc.	104	35928	Resist. 60,000 Ohm ¼ W.	49219		Spk. Mtg. Brkt. (4)
	49934	B=600-1050 Kc.	105	36322	Resist. 500,000 Ohm ¼ W.	32814		Hex. Hd. M. Scr. (4)
	49936	C=740-1300 Kc.	106	22180	Resistor 1600 Ohm 1½ W.	N-5096		Hex. Nut (4)
	49937	D=880-1550 Kc.	107	35600	Resist. 100,000 Ohm ¼ W.	130359		Flat Washer (4)
	49938	E=1000-1600 Kc.	108	130353	Resistor 240 Ohm 2½ W.	130824		Cabt. Bottom
35	G6-34002	Cond. 25 MMF.—Mica	109			130850		Carton (Loop Ant)
36	G21-34002	Cond. 600 MMF.—Mica	110			130563		Recordiomatic Unit
37	G3-34002	Cond. 500 MMF.—Mica	111			130884		110 V.—60 Cycle
38	G3-34002	Cond. 500 MMF.—Mica	112			130885		Recordiomatic Unit
39	35951	3 Sect. R-F Shunt Trimmer Assy.	113	130815	Socket Assy., Indic. Tube	47399		110 V.—60 Cycle
			114	G4-130328	Speaker	130648		Playback Needles (10)
40	G3-34002	Cond. 500 MMF.—Mica	115	130487	Band Change Sw.			Screw—Tone Arm Needle
41	G3-34002	Cond. 500 MMF.—Mica	116	130794	Mike Level Cont.	MG1-130632		Clamp
42	G2-34002	Cond. 100 MMF.—Mica	117	130799	Dual Switch	130647		Cutting Stylus (Needle)
43	G5-34002	Cond. 60 MMF.—Mica			A—Push Button			Screw—Cutting Stylus
44	45780	Cond. .02 MF.—160 V.			B—Phono Motor			Clamp
45	50065	Cond. .03 MF.—160 V.	118	G58-26719	Term. Board (Loop Ant.)	130460		Prot. & Pol. Cloth
46	30805	Cond. .01 MF.—400 V. AC.	119	G50-26719	Terminal Board (Phono)	130839		Needle Package Holder
47	45780	Cond. .02 MF.—160 V.	120	130411	Tone Cont. (500,000 Ohm)	130981		Rd. Hd. M. Screw (4)
48	45780	Cond. .02 MF.—160 V.	121	G86-24628	Transformer Output			Recordiomatic Unit Mtg.
49	50105	Cond. .1 MF.—200 V.	122	130798	Transformer Power—60 Cycle, 110 V.	20199		Special Nut (4)
50	45817	Cond. .05 MF.—160 V.			Vol. Cont. (3 Meg.) & Sw.	20143		Recordiomatic Unit Mtg.
51	30823	Cond. .01 MF.—200 V.	123	130412	Dial Face & Escutcheon	20143		Top Spring (4)
52	G5-34002	Cond. 50 MMF.—Mica			Escutcheon only	20198		Recordiomatic Unit Mtg.
53	G5-34002	Cond. 50 MMF.—Mica			Dial Face only			Bottom Spring (4)
54	30823	Cond. .01 MF.—200 V.			Dial Back Plate Assem.			Recordiomatic Unit Mtg.
55	G3-34002	Cond. 500 MMF.—Mica		MG20-130611	Pointer Shaft Assem.			
56	130358	3 Sect. Electrolytic Cond.		130138				





# MODEL C33CA

## VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ 117.5 VOLT LINE

TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.-Mod.....	0	0	200	81.5	9	0	6.3	0
6SK7—I. F. Amp.....	0	0	0	0	0	81.5	6.3	200
6SQ7—Det. A.V.C.—1st A.F.....	0	0	0	0	0	74	6.3	0
6K6GT—Output.....	0	0	184	200	0	0	6.3	12.5
6SK7—Mike Amp.....	0	0	0	0	0	+	6.3	+
5Y3G—Rectifier.....	0	5.0	0	268 A.C.	0	268 A.C.	0	240

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

DROP ACROSS SPEAKER FIELD.....40 Volts

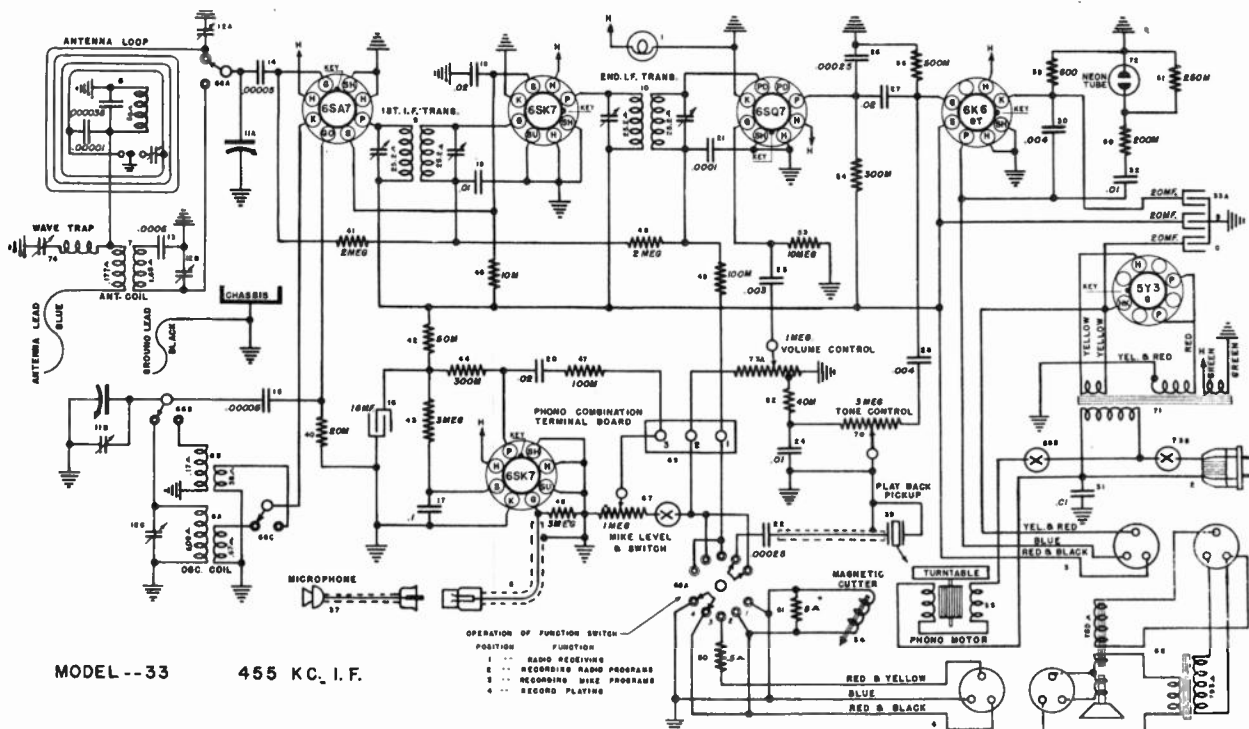
MAXIMUM POWER OUTPUT @ 130 V. LINE (approx.)..... 3 Watts

MAXIMUM POWER CONSUMPTION @ 130 V. LINE.....55 Watts

\*Phono Motor 40 Watts additional.

Adjust wave trap for minimum output with 455 kc. input.

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol.	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.



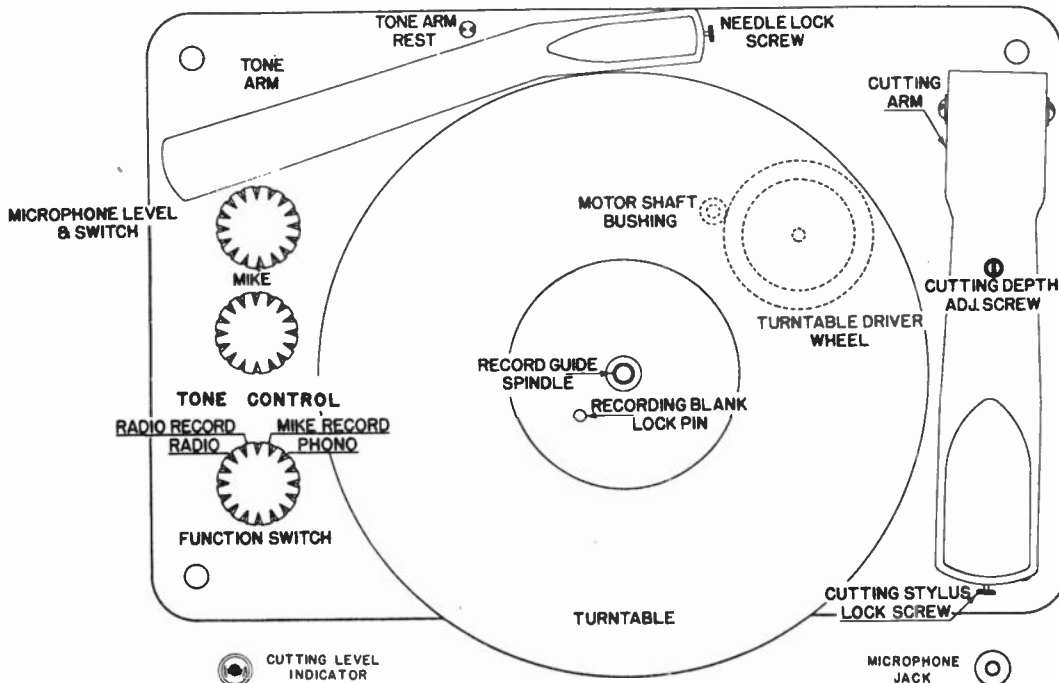
MODEL --33

455 KC. I.F.

OPERATION OF FUNCTION SWITCH  
 POSITION      FUNCTION  
 1      RADIO RECEIVER  
 2      RECORDING RADIO PROGRAMS  
 3      RECORDING MIKE PROGRAMS  
 4      RECORD PLAYING

## MODEL C33CA — PARTS LIST

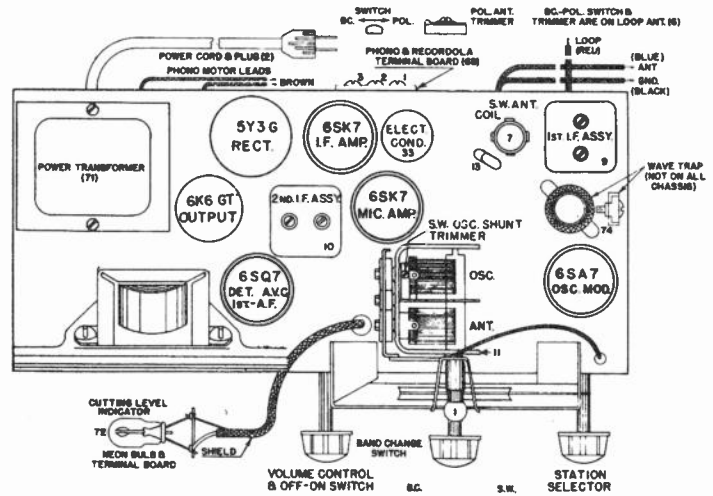
Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light Bulb	30	35139	Cond. .004 MF.—400V.—	69	G50-26719	Phono Terminal Board
	G9-49637	Wire & Socket Assy.—			Tub.			Assy.
2	45769	Dial Light	31	30805	Cond. .01 MF.—400V.—	70	130749	Tone Control (3 Meg.)
3	49928	Power Cord & Plug	32	23191	Tub.	71	49838	Trans. Power
		Speaker to Output Tube			Cond. .01 MF.—400V.—	72	130604	Neon Bulb (Level
		—Cable & Plug			Tub.			Indicator)
4	130576	Speaker to Function Sw.	33	48122	Cond. .20 MF.—25V.—	73	130262	Volume Control (1 Meg.)
		—Cable & Plug			Elect.			& Switch
5	G285-34403	Shielded Mike Lead &			Cond. .20 MF.—350V.—	74	G193-32004	455 Kc. Wave Trap
		Socket (in chassis)			Elect.		49880	Dial Face & Bracket—
6	G4-32008	Loop Antenna Assy.—			Cond. 20 MF.—350V.—			Dial Mtg.
		1650-550 Kc.—2.3-2.5 Mc.			Elect.			Pointer—Dial Hand
7	G221-32000	Antenna Coil—6-15 Mc.	34	130748	Magnetic—Cutting Head		49846	Bearing—Drive Shaft
8	G231-32002	Dual Oscillator Coil			(3 Ohm)		49665	Drive Shaft
		Sec. A—B.C. Osc.—1650-	35	NONE			49847	Spring—Drive Shaft
		550 Kc.	36	NONE			28032	Retaining
		Sec. B—S.W. Osc.—6-15	37	130620	Crystal Mike & Cable		G39-41582	Drive Cord (23" long)
		Mc.	38	130820	Phono Motor—110V. 60C.		50607	Spring—Drive Cord
9	G240-32004	1st I-F Assy.—455 Kc.	39	131024	Crystal Cartridge (Tone			Tension
10	G249-32004	2nd I-F Assy.—455 Kc.			Arm)		27981	Tube Shield Base
11	190587	2 Section Variable Tun-	40	36760	Resis. 20,000 Ohm ¼ W.		130594	Tube Socket Shield
		ing Cond.	41	35927	Resistor 2 Megohm ¼ W		130603	Neon Tube Clip Assy.
12	49722	3 Section Shunt Trim-	42	40757	Resis. 50,000 Ohm ¼ W.			& Brkt.
		mer Cond.	43	36688	Resistor 3 Megohm ¼ W.		130071	Dial Escutcheons & Lens
		A—B.C. Ant. Trimmer	44	35601	Resis. 300,000 Ohm ¼ W.		130624	Neon Bulb Escutcheon
		B—S.W. Ant. Trimmer	45	47100	Res. 10,000 Ohm 2W. Ins.		130861	Screw—Escutch. Mtg.
		C—B.C. Osc. Trimmer	46	36688	Resistor 3 Megohm ¼ W.		130817	Screw—Escutch. Mtg.
13	G21-34002	Cond. 600 MMF.—Mica	47	35600	Resis. 100,000 Ohm ¼ W.		130313-A	Knob—V.C.—T.C.&Tuning
14	G5-34002	Cond. 50 MMF.—Mica	48	35927	Resistor 2 Megohm ¼ W.		130339	Knob—Lever Type
15	G5-34002	Cond. 50 MMF.—Mica	49	35600	Resis. 100,000 Ohm ¼ W.			(Band Sw.)
16	48122	Cond. 16MF.—250V.—	50	130601	Resistor ½ Ohm 1W.		48298	Knob—Mike Level Cont.
		Elect.	51	41268	Resistor 8 Ohm 1W.		130627	Knob—Func. Cont. Sw.
17	22688	Cond. .1 MF.—400 V.—	52	38761	Resistor 40,000 Ohm ¼ W.		130628	Spring—Recorder Sup. 8
		Tub.	53	50956	Res. 10 Megohm ¼ W. Ins.		130625	No. 10—32x3" Screw—
18	30488	Cond. .02 MF.—400V.—	54	35601	Resis. 300,000 Ohm ¼ W.			Recorder Mtg. (4)
		Tub.	55	35927	Resistor 2 Megohm ¼ W.		38085	No. 10—32 Wing Nut—
19	48867	Cond. .01 MF.—160V.—	56	36322	Resis. 500,000 Ohm ¼ W.			Recorder Mtg. (4)
		Tub.	57	35927	Resistor 2 Megohm ¼ W.		47791 (FS-88)	Needle Cup
20	36541	Cond. .02 MF.—160V.—	58	49702	Resistor 20 Ohm ½ W.		47790 (FS-88)	Needle Cup Lid
		Tub.	59	38918	Resistor 600 Ohm ½ W.		47339	Play Back Needles
21	G2-34002	Cond. 100 MMF.—Mica	60	35930	Resis. 200,000 Ohm ¼ W.			(Pkg. 10)
22	G1-34002	Cond. 250 MMF.—Mica	61	38976	Resis. 250,000 Ohm ¼ W.		130634	Needle Screw—Play Back
23	50084	Cond. .003 MF.—600V.	62	NONE			130901	Cutting Stylus (Needle)
		Paper	63	NONE			130633	Stylus Screw
24	48667	Cond. .01 MF.—160V.—	64	NONE			49814	R. H. Chassis End Plate
		Tub.	65	NONE			49815	L. H. Chassis End Plate
25	50105	Cond. .10 MF.—160V.—		G7-49742	Speake--		45020	Flat Washer—Chassis
		Tub.		130310	Support Brkt.—Spkr.			Mtg. (4)
26	G1-34002	Cond. 250 MMF.—160V.		130823	Mtg.		130490	Screw Washer—Chassis
		—Mica		35066	Plate—Spkr. Mtg.			Mtg. (4)
27	30488	Cond. .02 MF.—400V.—		O-8	Screw—Spkr. Mtg.		131543	Cabinet
		Tub.		49001	Flat Washer—Spkr. Mtg.		130573	Shipping Carton
28	35139	Cond. .004 MF.—400V.—	66	49849	Screw—Spkr. Mtg.		130376	Cabt. Prot. & Pol. Cloth
		Tub.	67	130579	Band Change Switch			
29	50105	Cond. .10 MF.—160V.—	68	130578	Mike Level Control &			
		Tub.			Switch			
					Functional Con. Switch			



# MODEL 33BG

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light Bulb	31	30805	Cond. .01 MF.—400V.—Tub.	70	130749	Tone Control (3 Meg.)
	G9-49637	Wire & Socket Assy.—Dial Light	32	23191	Cond. .01 MF.—400V.—Tub.	71	130592	Power Trans. 110V., 60C.
2	45769	Power Cord & Plug				72	130604	Neon Bulb (Level Indicator)
3	49928	Speaker to Output Tube—Cable & Plug	33	130577	Cond.—3 sec. electrolytic	73	130262	Volume Control (1 Meg.) & Switch
4	130576	Speaker to Function Sw.—Cable & Plug				74	G193-32004	455 Kc. Wave Trap
5	G285-34403	Shielded Mike Lead & Socket (in chassis)	34	130748	Sec. A—20 MF.—25V.		130567	Dial Face
6	G4-32008	Loop Antenna Assy.—1650-550 Kc.—2.3-2.5 Mc.	35	NONE	Sec. B—20 MF.—350V.		130588	Bracket—Dial Mtg.
7	G221-32000	Antenna Coil—6-15 Mc.	36	NONE	Sec. C—20 MF.—350V.		49846	Pointer—Dial Hand
8	G231-32002	Dual Oscillator Coil	37	130620	Magnetic—Cutting Head (3 Ohm)		49665	Bearing—Drive Shaft
		Sec. A—B.C. Osc.—1650-550 Kc.	38	130820	Crystal Mike & Cable		130586	Drive Shaft
		Sec. B—S.W. Osc.—6-15 Mc.	39	130818	Phono Motor—110V. 60C.		49829	Spring—Drive Shaft Retaining
9	G240-32004	1st I-F Assy.—455 Kc.	40	36760	Crystal Cartridge (Tone Arm)		G39-41582	Drive Cord (23" long)
10	G249-32004	2nd I-F Assy.—455 Kc.	41	35927	Resis. 20,000 Ohm 1/4 W.		50607	Spring—Drive Cord Tension
11	130587	2 Section Variable Tuning Cond.	42	40757	Resistor 2 Megohm 1/4 W.		G2-130264	Toggle Arm (with Shaft Bearing)
12	49722	3 Section Shunt Trimmer Cond.	43	36688	Resis. 50,000 Ohm 1/4 W.		28032	Spring (Tog. Retaining)
		A—B.C. Ant. Trimmer	44	35601	Resistor 3 Megohm 1/4 W.		G1-130264	Toggle Arm (with Hub & Set Screws)
		B—S.W. Ant. Trimmer	45	130593	Resis. 300,000 Ohm 1/4 W.		49836	Link—Tog. Connecting
		C—B.C. Osc. Trimmer	46	36688	Resistor 15,000 Ohm 2W.		49770	Trimount Stud—Link Fastener
13	G21-34002	Cond. 600 MMF.—Mica	47	35600	Resistor 3 Megohm 1/4 W.		27981	Tube Shield Base
14	G5-34002	Cond. 50MMF.—Mica	48	35927	Resistor 2 Megohm 1/4 W.		130594	Tube Socket Shield
15	G5-34002	Cond. 50 MMF.—Mica	49	35600	Resistor 2 Megohm 1/4 W.		MG22-130569	Neon Tube Clip Assy.
16	48122	Cond. 16MF.—250V.—Elect.	50	130601	Resistor 1/2 Ohm 1W.		130071	Dial Escutcheons & Lens
17	22688	Cond. .1 MF.—400 V.—Tub.	51	41258	Resistor 8 Ohm 1W.		130624	Neon Bulb Escutcheon
18	30488	Cond. .02 MF.—400V.—Tub.	52	36761	Resistor 40,000 Ohm 1/4 W.		130158	Screw—Neon Escut. Mtg.
19	48667	Cond. .01 MF.—160V.—Tub.	53	36688	Resistor 3 Megohm 1/4 W.		130313	Knob—V.C.—T.C.& Tuning
20	36541	Cond. .02 MF.—160V.—Tub.	54	35601	Resis. 300,000 Ohm 1/4 W.		130339	Knob—Lever Type (Band Sw.)
21	G2-34002	Cond. 100 MMF.—Mica	55	35927	Resistor 2 Megohm 1/4 W.		48294	Knob—Mike Level Cont.
22	G1-34002	Cond. 250 MMF.—Mica	56	36322	Resistor 500,000 Ohm 1/4 W.		130627	Knob—Func. Cont. Sw.
23	34713	Cond. .006 MF.—160V.—Tub.	57	35927	Resistor 20 Ohm 1/2 W.		130628	Spring—Recorder Sup. 8
24	48667	Cond. .01 MF.—160V.—Tub.	58	49702	Resistor 350 Ohm 1/2 W.		130625	No. 10—32x3" Screw—Recorder Mtg. (4)
25	50105	Cond. .10 MF.—160V.—Tub.	59	38916	Resistor 200,000 Ohm 1/4 W.		38085	No. 10—32 Wing Nut—Recorder Mtg. (4)
26	G1-34002	Cond. 250 MMF.—160V.—Mica	60	35930	Resis. 250,000 Ohm 1/4 W.		47791 (FS-88)	Needle Cup
27	30488	Cond. .02 MF.—400V.—Tub.	61	38976	Speaker		47790 (FS-88)	Needle Cup Lid
28	35139	Cond. .004 MF.—400V.—Tub.	62	NONE	Rubber Grommet—Spkr. Mtg. (4)		47339	Play Back Needles (Pkg. 10)
29	50105	Cond. .10 MF.—160V.—Tub.	63	NONE	Headed Bushing—Spkr. Mtg. (4)		130634	Needle Screw—Play Back
30	35139	Cond. .004 MF.—400V.—Tub.	64	NONE	Flat Washer—Spkr. Mtg. (4)		130632	Cutting Stylus (Needle)
			65	G4-130145	No. 6 Nut—Spkr. Mtg. (4)		130633	Stylus Screw
				45580	Band Change Switch		49814	R. H. Chassis End Plate
				49796	Mike Level Control & Switch		49815	L. H. Chassis End Plate
				2309	Functional Con. Switch		45020	Flat Washer—Chassis Mtg. (4)
				5062	Phono Terminal Board Assy.		130490	Screw Washer—Chassis Mtg. (4)
				49849			B. C.	Cabinet
				130579			130573	Shipping Carton
				130578			130376	Cabt. Prot. & Pol. Cloth

**CROSLEY**  
Twice Tested  
**SERVICE PARTS**



# MODEL 34BH

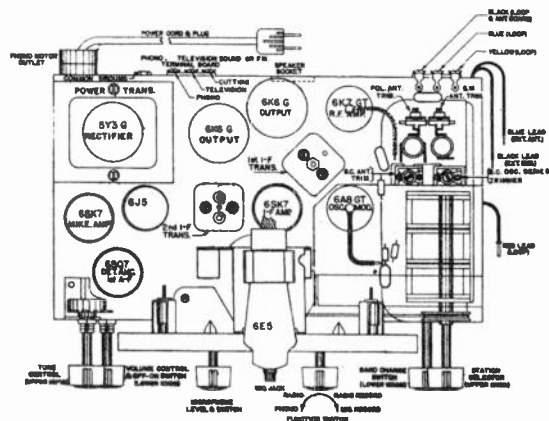
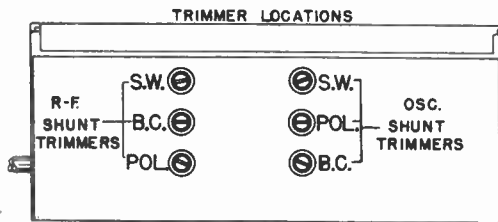
## RADIO RECEIVER ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections.....Plate to Plate of 6K6's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Function Switch.....Radio  
 Position of Mike Level Control.....All the Way to Left (Off)

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output. Do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.



TUBE	FUNCTION	1	2	3	4	5	6	7	8
6K7GT	R-F Amp.	.....	.....	195	78.6	.....	2.0	*6.3	2.0
6A8GT	Osc.-Mod.	.....	.....	195	78.6	.....	136	*6.3	1.0
6SK7	I-F Amp.	.....	.....	.....	.....	5.5 B.C. 2.6 S.W.	78.6	*6.3	234
6SQ7	Det. A.V.C. 1st A-F	.....	.....	.....	.....	.....	110	*6.3	.....
6J5GT	Phase Invert.	.....	.....	118	195	.....	110	*6.3	4.5
6K6GT	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6K6GT	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6SK7	Mike Amp.	.....	.....	.....	.....	.....	.....	*6.3	POS.
5Y3G	Rectifier	.....	305 D.C.	.....	*325	.....	*325	.....	305 D.C.
6E5	Indicator	.....	.....	.....	225	.....	*6.3	.....	.....

\*Measured with A.C. volt meter

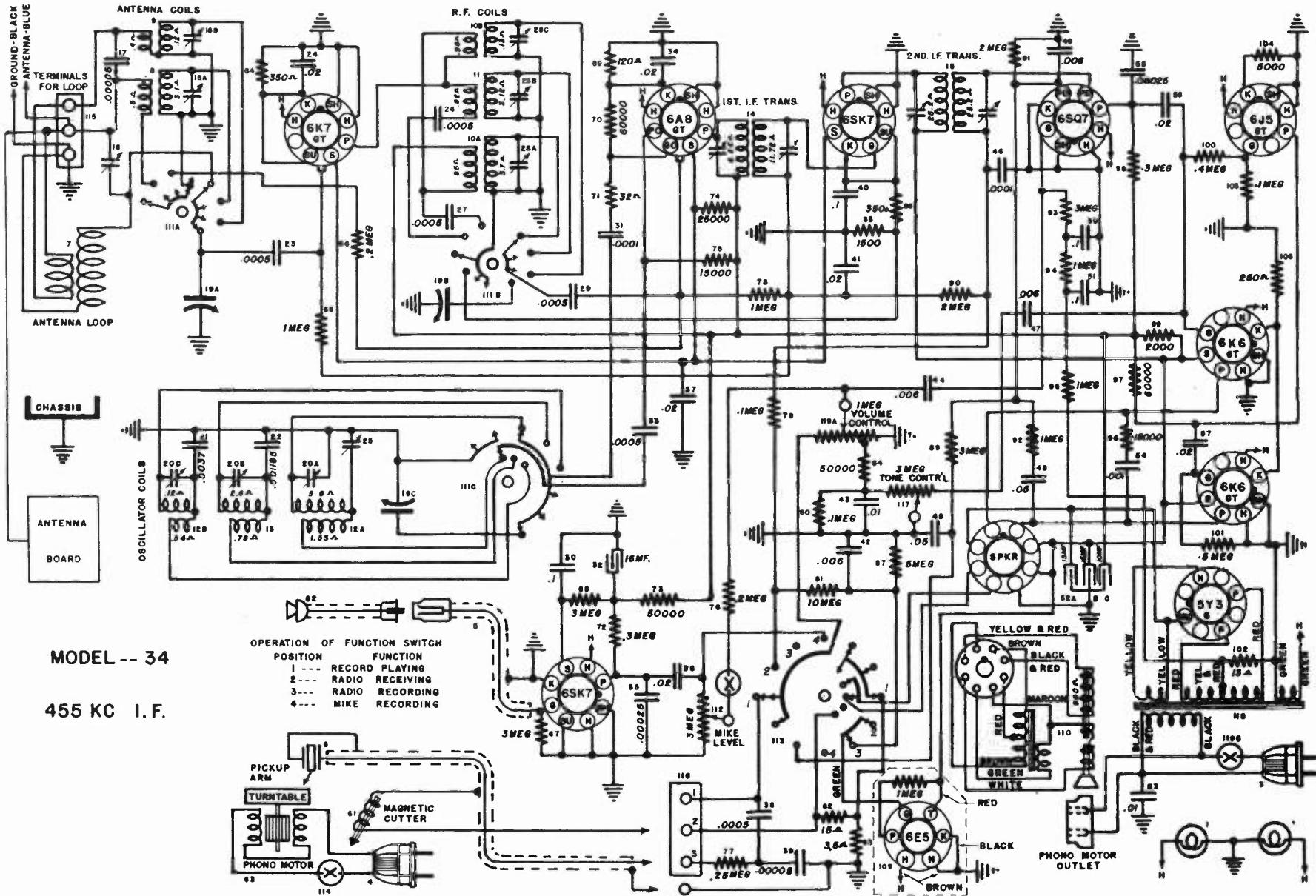
VOLTAGE DROP ACROSS SPEAKER FIELD= 77 VOLTS

MAXIMUM POWER OUTPUT @ 130 V. Line=7.5 Watts

POWER CONSUMPTION @ 117.5 V. Line=Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS

Voltagages may vary 10% of values given.

# WIRING DIAGRAM MODEL 34

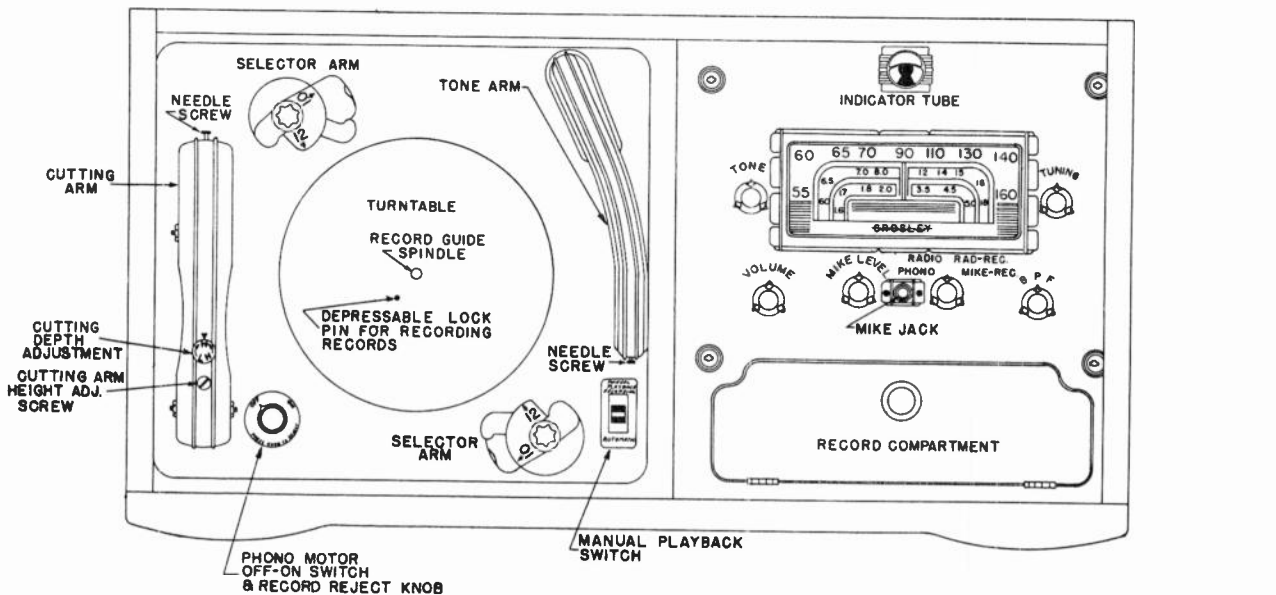


MODEL -- 34

455 KC I.F.

## MODEL 34 — PARTS LIST

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light	54	30270	Cond. .001 MF.—400 V.	115	G58-26719	Terminal Brd. (Loop Connect.)
2	43567	Dial Light	55	G1-34002	Cond. 250 MMF.—Mica	116	G50-26719	Terminal Brd. (Phono Connect.)
3	G7-49637	D. L. Socket Assy.	56	30488	Cond. .02 MF.—400 V.	117	130741	Tone Control (3 Meg.)
3	45769	Power Cord & Plug (Radio)	57	30488	Cond. .02 MF.—400 V.	118	130784	Power Trans.—110 V.-60 cycle
4	130857	Power Cord & Plug (Motor)	58			119	47783	Volume Cont. (1 Meg.)
5	G288-34403	Shielded Lead & Socket (Mike)	61	130854	Cutting Head only		49674	8 Prong Sock., no mrkg.
6	130818	Crystal Cart. (Tone Arm)	62	130764	Crystal Mike & Cable		27981	Base—Tube Shield
7	G2-130234	Ant. Loop (550-1600 Kc)	63	130855	Phono Motor only (110 V.—60 cycle)		130594	Shield—Tube Socket
8	G225-32000	Ant. Coil (1.6 to 5.0 Mc.)	64	38916	Resistor 350 Ohm 1/2 W.		49176	Clamp—Elec. Cond. Mtg.
9	G224-32000	Ant. Coil (6.0 to 18.0 Mc.)	65	35602	Resistor 1 Megohm 1/4 W.		49986	Bracket—T. C. Mtg.
10	G114-32001	Dual R-F Coil	66	35930	Resist. 200,000 Ohm 1/4 W.		130012	Shield—Tube & Gang Cover
		Sect. A—550 to 1600 Kc.	67	36688	Resistor 3 Megohm 1/4 W.		23880	Thumb Screw—Shield Mtg.
		Sect. B—6.0 to 18.0 Mc.	68	36688	Resistor 3 Megohm 1/4 W.		MG34-130611	Bracket—Ind. Tube Mtg.
11	G115-32001	R-F Coil (1.6 to 5.0 Mc.)	69	130311	Resistor 120 Ohm 1/2 W.		130252	Wall Tap—Phono Motor
12	G241-32002	Dual Osc. Coil	70	35928	Resist. 60,000 Ohm 1/4 W.		130813	Lock Plate—Wall Tap
		Sect. A—550 to 1600 Kc.	71	45981	Resistor 32 Ohm 1/2 W.		MG20-130611	Dial Back Plate
		Sect. B—6.0 to 18.0 Mc.	72	35601	Resist. 300,000 Ohm 1/4 W.		130138	Shaft Assy.—Dial Point.
13	G242-32002	Osc. Coil (1.6 to 5.0 Mc.)	73	40757	Resist. 50,000 Ohm 1/4 W.		130637	Dial Glass & Escutcheon
14	G246-32004	1st I-F Assy. 455 Kc.	74	130318	Resistor 25,000 Ohm 1 W.		130640	Dial Glass (face) only
15	G240-32004	2nd I-F Assy. 455 Kc.	75	47819	Resistor 15,000 Ohm 1 W.		130259	Escutcheon only
16	49932	Cond. Loop Shunt Trim.	76	35930	Resist. 200,000 Ohm 1/4 W.		130158	Screws—Escut. Mtg.
17	G5-34002	Cond. 50 MMF.—Mica	77	38976	Resist. 250,000 Ohm 1/4 W.		49829	Lock Spring (Shaft Ret.)
18	37986	Cond. Dual Ant. Shunt Trimmer	78	35602	Resistor 1 Megohm 1/4 W.		130125	Pointer
			79	35600	Resist. 100,000 Ohm 1/4 W.		130195	Spring—Drive Cord Tsn.
19	49929	3 Sect. Var. Tuning Gang	80	35600	Resist. 100,000 Ohm 1/4 W.		G40-41582	Drive Cord (25 1/2 inch)
20	35951	3 Sect. Osc. Shunt Trimmer Assy.	81	50956	Resist. 10 Megohm 1/4 W.		337	Cabinet
21	G17-34005	Cond. 3700 MMF.—Mica	82	130655	Resistor 15 Ohm 2 W.		130437	Shipping Carton
22	G14-34005	Cond. 1185 MMF.—Mica	83	130654	Resistor 3.5 Ohm 1/2 W.		130624	Escutcheon—Mike Jack
23	G3-34002	Cond. 500 MMF.—Mica	84	40757	Resist. 50,000 Ohm 1/4 W.		130763	Escutcheon—Indi. Tube
24	45780	Cond. .02 MF.—160 V.	85	130488	Resistor 1500 Ohm 1 W.		130423	R. H. Brkt. Assy.—Chassis Mtg.
25	130108	Cond. 600 Kc. Ser. Trim.	86	38916	Resistor 350 Ohm 1/2 W.		130426	L. H. Brkt. Assy.—Chassis Mtg.
26	G3-34002	Cond. 500 MMF.—Mica	87	47131	Resistor 5 Megohm 1/4 W.		49985	L. H. End Plate—Chas.
27	G3-34002	Cond. 500 MMF.—Mica	88	36688	Resistor 3 Megohm 1/4 W.		49984	R. H. End Plate—Chas.
28	35951	3 Sect. R-F Shunt Trimmer Assy.	89	35927	Resistor 2 Megohm 1/4 W.		45580	Rubber Grommet—Chassis Mtg. (6)
29	G3-34002	Cond. 500 MMF.—Mica	90	35927	Resistor 2 Megohm 1/4 W.		49796	Headed Bushing—Chassis Mtg. (6)
30	22688	Cond. .1 MF.—400 V.	91	35927	Resistor 2 Megohm 1/4 W.		130312	Chassis Mtg. (6)
31	G2-34002	Cond. 100 MMF.—Mica	92	35602	Resistor 1 Megohm 1/4 W.		47761 (FS-18)	Oval Phil. Mch. Screw—Bracket Mtg. (4)
32	48122	Cond. 16 MF.—250 V. Elect.	93	36688	Resistor 3 Megohm 1/4 W.		47728 (FS-88)	Decorative Washer—Bracket Mtg. (4)
			94	35602	Resistor 1 Megohm 1/4 W.		130197	Knob (6 req.)
			95	35602	Resistor 1 Megohm 1/4 W.		130563	Recording Unit Assy.—110 V.-60 Cy.
			96	36318	Resist. 15,000 Ohm 1/4 W.		47339	Needles (Tone Arm) (pkg. 10)
			97	35928	Resist. 60,000 Ohm 1/4 W.		MG35-130610	Cutting Needle (Stylus)
			98	35601	Resist. 300,000 Ohm 1/4 W.		130648	Screw—Tone Arm Ndle.
			99	23013	Resist. 2,000 Ohm 1 1/4 W.		130647	Screw—Cut. Arm Needle
			100	38321	Resist. 400,000 Ohm 1/4 W.		130460	Cloth—Cab. Protector & Polishing
			101	36322	Resist. 500,000 Ohm 1/2 W.		130232	Bracket—Loop Ant. Mtg.
			102	130841	Resistor 13 Ohm 1/2 W.		130839	Needle Package Holder
			103	35600	Resist. 100,000 Ohm 1/4 W.		130158	Screw—Holder Mtg.
			104	49945	Resistor 5000 Ohm 1/4 W.		130884	Recording Unit—220 V.-60 Cy.
			105	49703	Resistor 250 Ohm 2 W.		130885	Recording Unit—110 V.-50 Cy.
			106					
			107					
			108					
			109					
			110	130815	Socket Assy., Indic. Tube			
				G2-130328	Speaker & Plug			
				49853	Rubber Grommet—Spkr. Mtg.			
				47219	Headed Bushing—Spkr. Mtg.			
				37953	Flat Washer—Spkr. Mtg.			
			111	130753	Band Change Switch			
			112	130602	Mike Level Cont. (3 Meg.) & Sw.			
			113	130656	Function Cont. Switch			
53	30805	Cond. .01 MF.—400 V.	114	130856	Switch—Phono Motor			



## MODELS 35AK AND 38BM

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

This does not apply to the models J35 or J38 as the power supply is isolated from the chassis by a .25 mf. condenser. See Wiring Diagram.

#### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### TUNING I-F AMPLIFIER TO 455 KILOCYCLES

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers located through front chassis flange below the speaker (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on top of 1st I-F assy., item 6, (Fig. 2) for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

#### ALIGNING THE R-F AMPLIFIER

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).

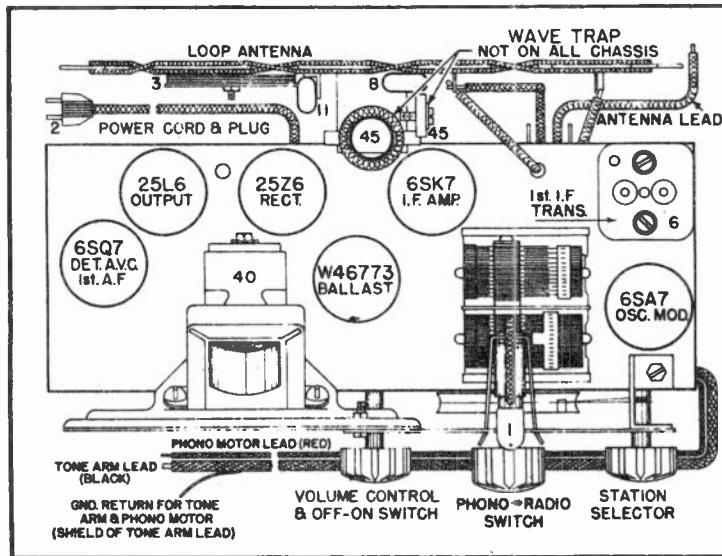
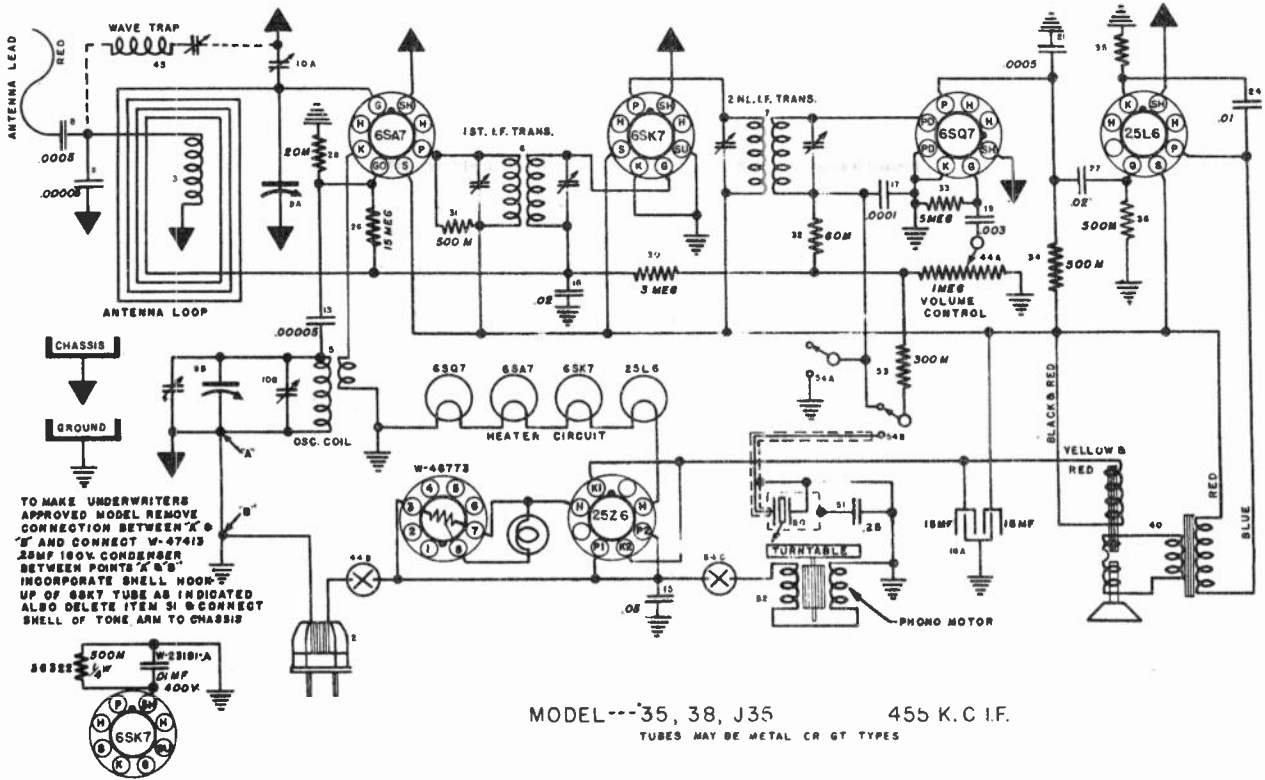
NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

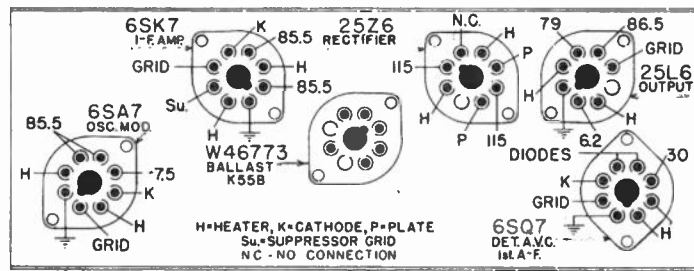
#### WAVE TRAP

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

WIRING DIAGRAM MODEL 35 OR 38







POWER CONSUMPTION AT 117.5 LINE + 50 WATTS  
 MAXIMUM POWER OUTPUT-----1.2 WATTS  
 DROP ACROSS SPEAKER FIELD-----28.5 VOLTS

Socket Voltage Chart

**PARTS LIST — MODELS 35 & 38**

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	27	None	
	G1—49637	Socket Assy.—Dial Light	28	—36768	Resistor, 20,000 Ohms ¼ W
2	—49775	Power Cord and Plug	29	None	
3	G1—32008	Loop Antenna	30	—36688	Resistor, 3 Megohms ¼ W.
	—49739	Bracket—Loop Mtg.	31	—36322	Resistor, 500,000 Ohms ¼ W.
	—20989	Fibre Washer—Loop Mtg.	32	—35928	Resistor, 60,000 Ohms ¼ W.
	—43611	No. 8—32 x ¼" Screw—Loop Mtg. (FS-58)	33	—47131	Resistor, 5 Megohms ¼ W.
4	None		34	—36322	Resistor, 500,000 Ohms ¼ W.
5	G229—32002	Oscillator Coil	35	—47512	Resistor, 140 Ohms ¾ W.
6	G240—32004	1st I-F Transformer Assy.	36	—36322	Resistor, 500,000 Ohms ¼ W.
7	G242—32004	2nd I-F. Transformer Assy.	37	None	
8	G3—34002	Condenser, .0005 Mf. Mica	38	None	
9	—49737	Condenser—2 Sect. Var. Tun. Gang	39	None	
10	MG3—49708	Condenser—Dual Shunt Trim. Assy.	40	G1—49698	Spkr. and Output Trans—Mod. 38
11	G5—34002	Condenser, .00005 Mf. Mica		G4—49698	Spkr. and Output Trans.—Mod. 35
12	None			—49697	Bracket Speaker Mtg.
13	G5—34002	Condenser, .00005 Mf. Mica	41	None	
14	None		42	None	
15	—45782	Condenser, .05 Mf. 120 V. A. C.	43	None	
16	—45780	Condenser, .02 Mf. 160 V.	44	—49774	Volume Control and Line Switch
17	G2—34002	Condenser, .0001 Mf. Mica	45	G193—32004	Wave Trap
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.	46	None	
19	—50084	Condenser, .003 Mf. 160 V.	47	None	
20	None		48	None	
21	G3—34002	Condenser, .0005 Mf. Mica	49	None	
22	—45780	Condenser, .02 Mf. 160 V.	50	—130618	Tone Arm
23	None			—47333	Rest Brkt.—Tone Arm
24	—23191	Condenser, .01 Mf. 400 V.		—47724	Rubber Rest—Rest Brkt.
25	None		51	—34712	Cond., .25 MF.—160 Volt
26	—50671	Resistor, 15 Megohms ¼ W.*	52	—130582	Phono Motor—110 V.—60 Cycle
	—47790	Lid—Needle Cup	53	—35601	Resistor—300,000 Ohm—¼ W
	—47791	Cup—Needle	54	—49808	Phono-Radio Switch
	—47324	Needle Screw (Tone Arm)		—46364	Phono. Needle
	—45979	Variable Condenser—Wave Trap		AK	Cabinet—Model 35
	—49766A	Dial Face		—130608	Back—For AK Cabinet
	—130445	Bracket—R. H. Dial Face Mtg.		—130585	Shipping Carton—AK Cabinet
	—49742	No. 6—32 x ¼" Screw—L. H. Dial Face Mtg.		—130313	Knob—(3 Req.)
	—49770	Trimount Stud—R. H. Dial Face Mtg. (FS-58)		—41742	Spring—Knob Insert
	—49780	Pointer—Dial Hand		—49770	Trimount Stud—Lens Mtg. (7 Req.)
	—49665	Bearing—Drive Shaft—Riveted to Chassis		—45020	Flat Washer (Chassis Mtg.) FS-58
	—28032	Spring—Drive Shaft Retaining		—130490	No. 8—32x¾" Screw (Chassis Mtg.) (FS-58)
	—49741	Drive Shaft		—130307	Felt Pad—Mtg. Screw Cover
G11—41582	Drive Cord		MG17—130115	Bottom Cover Assy. (Chassis)—Model J-35	
	—51752	Spring—Drive Cord Tension		—130130	Bottom Cover only—Model J-35
	—45580	Rubber Grom.—Cond. Gang Mtg.		—47413	Cond., .25 Mf. 160 V.—Model J-35
	—45620	Headed Bushing—Cond. Gang Mtg.		—23191	Cond., .01 Mf. 400 V.—Model J-35
	O—8	No. 8 Flat Washer—Cond. Gang Mtg. (FS-58)		—36322	Resistor, 500,000 Ohms ¼ W.—Model J-35
	—130166	No. 8—32 x ¼" Screw—Cond. Gang Mtg.		—49878	Hole Plug—Model J-35 (FS-58)
				—130210	¾" Hole Plug—Mod. J-35 (FS-58)
				—130127	Switch Hole Insulator—Model J-35
				BM	Cabinet—Model 38
				—130746	Shipping Carton—BM Cabt.
				—130078	Escutcheon and Lens

# MODEL C-35AK

## ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### TUNING I-F AMPLIFIER TO 455 KILOCYCLES

- (a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.
- (b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust the 2nd I-F trimmer condensers located on top 2nd I-F Assm. item 7, (Fig. 1) for maximum reading on the output meter.
- (e) Adjust the 1st I-F trimmer condensers, located on top of 1st I-F assy., item 6, (Fig. 1) for maximum output.
- (f) Repeat operations (d) and (e) for more accurate adjustments.

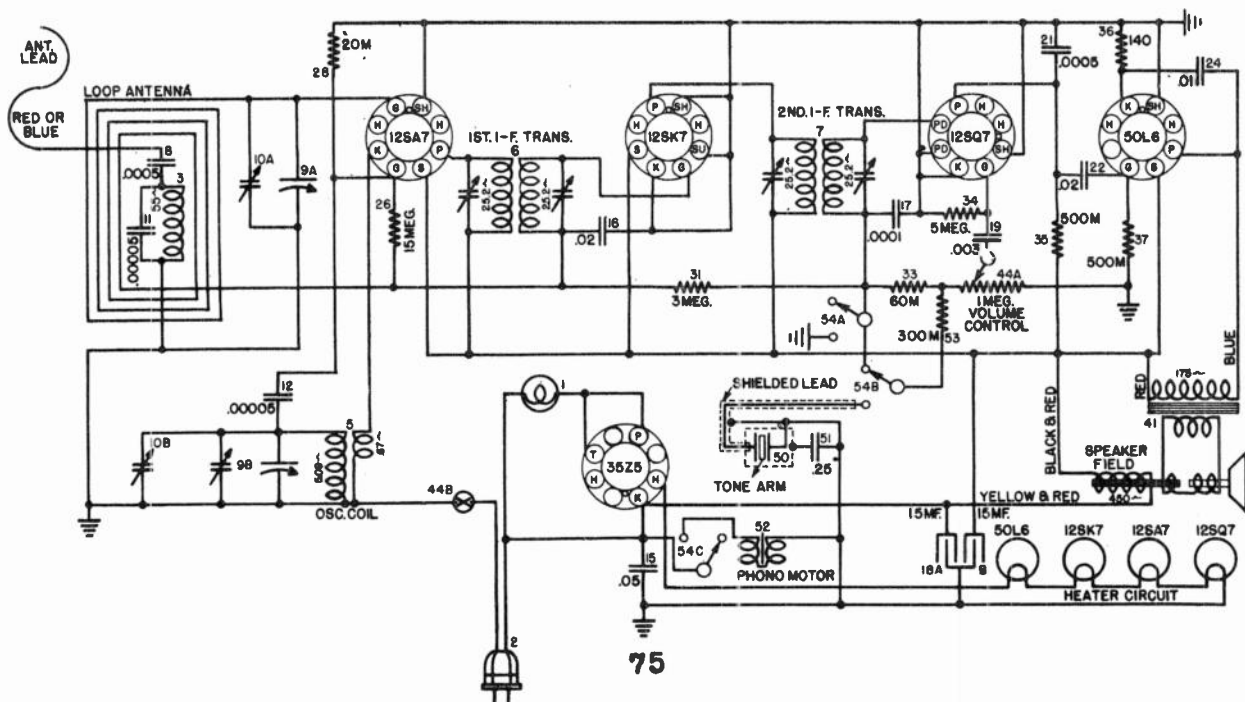
ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

### ALIGNING THE R-F AMPLIFIER

- (a) Set the signal generator to 1650 kilocycles.
- (b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.
- (c) Set the signal generator to 1400 kilocycles.
- (d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.
- (e) Adjust the trimmer condensers B. C. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

- (f) Repeat operations (d) and (e) for more accurate adjustments.

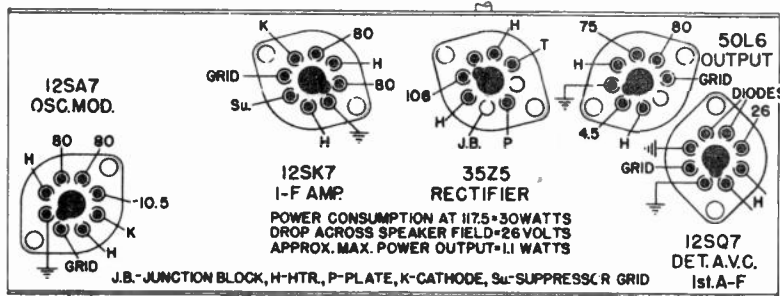


PARTS LIST — MODELS C-35 AK

Figures in first column refer to parts in Diagrams

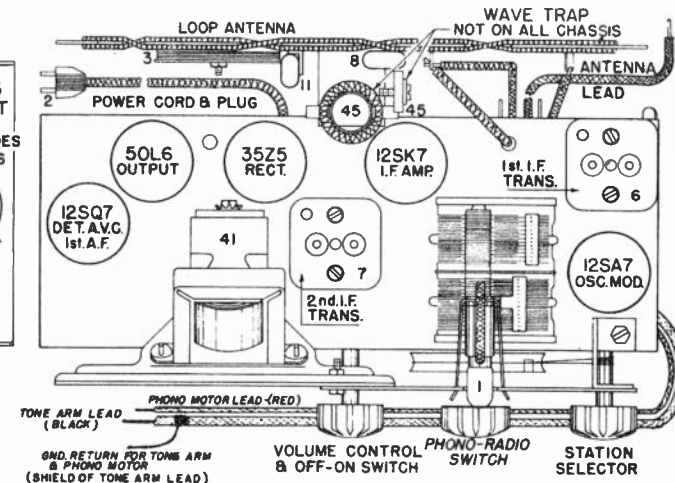
Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt
	G1—49637	Socket Assy.—Dial Light
2	—49775	Power Cord and Plug
3	G1—32008	Loop Antenna
	—49739	Bracket—Loop Mtg.
	—20989	Fibre Washer—Loop Mtg.
	—23880	Thumb Screw—Loop Mtg.
4	None	
5	G229—32002	Oscillator Coil
6	G240—32004	1st I-F Transformer Assy.
7	G241—32004	2nd I-F. Transformer Assy.
8	G3—34002	Condenser, .0005 Mf. Mica
9	—49737	Condenser—2 Sect. Var. Tun. Gang
10	MG3—49708	Condenser—Dual Shunt Trim. Assy.
11	G5—34002	Condenser, .00005 Mf. Mica
12	G5—34002	Condenser, .00005 Mf. Mica
13	None	
14	None	
15	—45782	Condenser, .05 Mf. 120 V. A. C.
16	—45780	Condenser, .02 Mf. 160 V.
17	G2—34002	Condenser, .001 Mf. Mica
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.
19	—50084	Condenser, .003 Mf. 160 V.
20	None	
21	G3—34002	Condenser, .0005 Mf. Mica
22	—45780	Condenser, .02 Mf. 160 V.
23	None	
24	—23191	Condenser, .01 Mf. 400 V.
25	None	
26	—50671	Resistor, 15 Megohms ¼ W.*
27	None	
28	—36760	Resistor, 20,000 Ohms ¼ W.
29	None	
30	None	
31	—36688	Resistor, 3 Megohms ¼ W.
32	None	
33	—35928	Resistor, 60,000 Ohms ¼ W.
34	—47131	Resistor, 5 Megohms ¼ W.
35	—36322	Resistor, 500,000 Ohms ¼ W.
36	—47512	Resistor, 140 Ohms ¾ W.
37	—36322	Resistor, 500,000 Ohms ¼ W.
38	None	
39	None	
40	None	
41	G1—49698	Spkr. and Output Trans.
	—49697	Bracket Speaker Mtg.
42	None	
43	None	
44	—49774	Volume Control and Line Switch
45	G193—32004	Wave Trap
46	None	
47	None	
48	None	
49	None	
50	—130618	Tone Arm
	—47333	Rest Brkt.—Tone Arm
	—47724	Rubber Rest—Rest Brkt.

Item No.	Part No.	Description
51	—34712	Cond., .25 MF.—160 Volt
52	—130582	Phono Motor—110 V.—60 Cycle
53	—35601	Resistor—300,000 Ohm—¼ W.
54	—49808	Phono-Radio Switch
	—47328	Shake. Washer—Tone Arm Mtg.
	—47329	Nut—Tone Arm Mtg.
	—47327	Flat Washer—Tone Arm Mtg.
	—47339	Needles (Pkg. 10)
	—46364	Chrome Tipped Needle
	—47790	Lid—Needle Cup
	—47791	Cup—Needle
	—47324	Needle Screw (Tone Arm)
	—45979	Variable Condenser—Wave Trap
	—49766A	Dial Face
	—130445	Bracket—R. H. Dial Face Mtg.
	—49742	No. 6—32 x 1/8" Screw—L. H. Dial Face Mtg.
	—49770	Trimount Stud—R. H. Dial Face Mtg. (FS-58)
	—49780	Pointer—Dial Hand
	—49665	Bearing—Drive Shaft—Riveted to Chassis
	—28032	Spring—Drive Shaft Retaining
	—49741	Drive Shaft
	G11—41582	Drive Cord
	—51752	Spring—Drive Cord Tension
	—45580	Rubber Grom.—Cond. Gang Mtg.
	—45620	Headed Bushing—Cond. Gang. Mtg.
	O—8	No. 8 Flat Washer—Cond. Gang Mtg. (FS-58)
	—130166	No. 8—32 x 1/8" Screw—Cond. Gang Mtg.
	—130584	Cabinet—AK
	—130608	Back—For AK Cabinet
	—130585	Shipping Carton—AK Cabinet
	—130313	Knob—(3 Req.)
	—41742	Spring—Knob Insert
	—49770	Trimount Stud—Lens Mtg. (7 Req.)
	—30409	Flat Washer (Chassis Mtg.) FS-58
	—130490	No. 8—32 x 1/8" Screw (Chassis Mtg.) (FS-58)
	—130334	Felt Pad—Mtg. Screw Cover
	—20881	Screw—No. 6 x 3/8 Rd. Hd. Wood Phono Mtg.
	—130385	Screw—No. 8 x 3/8 Rd. Hd. Wood Tone Arm Brkt. Mtg.
	—47335	Rubber Lock Ring Tone Arm Brkt.
	—130988	Phono Motor—25 Cycle—117 Volt
	—49995	Cond. 30-45 Mf.—100 V.—25 Cycle Kit
	—49224	Resistor—100 Ohm 5 W.—25 Cycle Kit
	MG42—131514	25 Cycle Conversion Kit
	—131126	60 to 50 Cycle Motor Bushing Ratio Spring
	—130078	Escutcheon and Lens
	—130376	Cabt. Protector & Pol. Cloth
	S—80	Screw—Back Mtg. (7 Req.) (FS-18)



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER. READINGS MAY VARY 10%

Socket Voltage Chart



# MODEL 36 AM

## TUBE SOCKET VOLTAGE READINGS (MEASURED FROM SOCKET PIN TO CHASSIS)

Tube	Function	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7-GT	Oscillator-Modulator	—	1.5	86	46	Neg.	86	—	—
1N5-GT	I-F Amplifier	—	1.5	86	86	—	J.B.	—	—
1H5-GT	Detector & 1st A-F Amp.	—	1.5	12	—	—	—	—	—
1A5-GT	Output	—	1.5	84	86	4.3*	—	—	J.B.

Power Output approximately 200 milliwatts. "A" Battery Drain approximately .20 Ampere at 1.5 Volts.  
 "B" Battery Drain approximately 9.0 Milliampers at 90 Volts. \*Measured across item 19. J.B.=Junction Block.

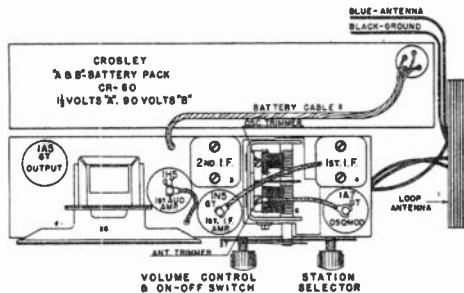


Fig. 1

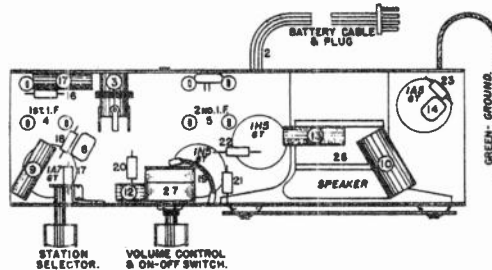


Fig. 2

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1A5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—*not* electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier to 455 Kilocycles

- Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" lead or chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust both 2nd I-F trimmers for maximum reading on the output meter.
- Adjust both trimmers on the 1st I-F transformer for maximum output.

- Check operations (d) and (e) for more accurate adjustments.

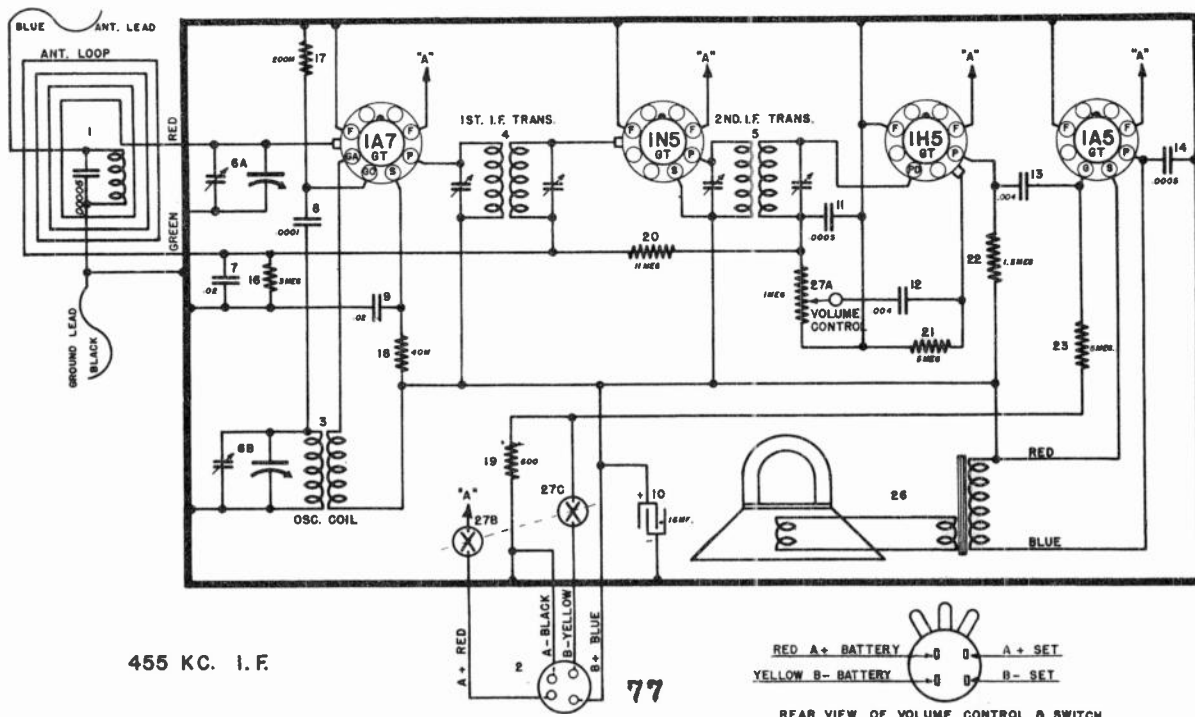
**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

#### 2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" lead (Blue). (Check dial pointer to see that it covers complete range.)

- Set the signal generator to 1500 kilocycles.
- Open the condenser gang all the way.
- Adjust the "OSC" trimmer condenser on gang for maximum output.
- Set the signal generator to 1400 kilocycles.
- Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).
- Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**
- Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

### WIRING DIAGRAM — MODEL 36AM



455 KC. I. F.

77



REAR VIEW OF VOLUME CONTROL & SWITCH

PARTS LIST — MODEL 36AM

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G3 -130368	Loop Antenna	16	-36688	Resistor, 3 Megohms 1/4 Watt Ins.
2	-130493	Battery Cable	17	-35930	Resistor, 200,000 Ohms 1/4 Watt Ins.
3	G215-32002	Oscillator Coil	18	-36761	Resistor, 40,000 Ohms 1/4 Watt Ins.
4	G194-32004	1st I-F Transformer Assembly	19	-29585	Resistor, 600 Ohms 1/2 Watt Flex.
5	G195-32004	2nd I-F Transformer Assembly	20	-48693	Resistor, 11 Megohms 1/4 Watt, Ins.
	-45513	No. 6-32 Pal Nut (I-F Trans.) (4 Req.)	21	-47131	Resistor, 5 Megohms 1/4 Watt Ins.
6A } 6B }	G88 -33001	2 Sect. Var. Cond. { Antenna Section	22	-48692	Resistor, 1 1/2 Megohms 1/4 Watt Ins.
		{ Oscillator Section	23	-47131	Resistor, 5 Megohms 1/4 Watt Ins.
	-31388	No. 8-32 x 1/8" W. Hd. Screw (Var. Cond.) (2 Req.)	26	392-PL-6-"W"	Speaker
	-48695	Drive Shaft		-48801	Output Transformer
	-44808B	Drive Shaft Bracket	27A	-48800	V. C. and Cone Assembly
	-6876	No. 6-32 x 1/4" W. Hd. Mach. Screw (Drive Shaft Bracket)	27B		Volume Control, 1 Megohm
			27C	-48709	Battery Switch, A+
	-5062	No. 6-32 Hex. Nut (Drive Shaft Brack.)		-46662	Battery Switch, B-
G19	-41582	Drive Cord, 17"		-51108A	3/4" Pal Nut (Volume Control)
	-44989	Drive Cord Spring			8 Prong Socket (No Marking)
	-46290	Drive Cord Clamp		-130470	Cabinet
	-43549	Retaining Ring (Drive Shaft)		-48605	AM
	-130534	Dial Face		-44827	Carton
	-6415	No. 8-32 x 1/4" W. Hd. Mach. Screw (Dial Face) (2 Req.)			Speaker Screen
					No. 8 x 1/4" H: H. P. K. Screw (Chassis Mtg.)
	O -8	No. 8 Flat Washer (Dial Face) (2 Req.)		-37953	Flat Washer (Chassis Mtg.)
	-49113	Dial Pointer		-130540	Knob
	-49111	No. 6-32 x 1/4" Gulmite Screw (Dial Pointer)		-48720A	Indicator Tack
	-20800	No. 6 Shakeproof Washer (Dial Pointer)		-130508	CR60 Battery Pack and Carton
7	-28621	Condenser, .02 Mf. 200 Volts Paper		-130376	Escutcheon and Lens (Dial)
8	G2 -34002	Condenser, .0001 Mf. Molded		-130376	Cabt. Protector and Polishing Cloth
9	-28621	Condenser, .02 Mf. 200 Volts Paper		CR28	CR28 Battery Pack and Carton
10	-45783	Condenser, 16 Mf. 125 Volts Elect.			
11	G3 -34002	Condenser, .0005 Mf. Molded			
12	-28904	Condenser, .004 Mf. 200 Volts Paper			
13	-28904	Condenser, .004 Mf. 200 Volts Paper			
14	G3 -34002	Condenser, .0005 Mf. Molded			

Due to the age of certain sets shown in the manual, it is necessary for the factory to make substitutions for many parts. The Crosley distributor in your area is up-to-date on all parts substitutions. It will be to your advantage to check with him regarding any Crosley parts that you may require.

PARTS LIST — MODEL B36BS

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G5 -130368	Loop Antenna	30	NONE	
2	-130493	Battery Cable	31	G2 -130446	Speaker
3	G240-32002	Oscillator Coil		-131395	Output Trans.
4	G244-32004	1st I-F Assy.			V.C. & Cone Assy. (not replaceable)
5	G248-32004	2nd I-F Coil & Trimmer		-46905	Tip-Speaker Cable-small
6	-130996	Shunt Trimmer (on loop)	32	-130076	Tip-Speaker Cable-large
7	-49737	2 Gang Var. Condenser		-130990	Volume Cont. 1 Meg. & Off-On Sw.
8	G5 -34002	Condenser 50 Mmf.-Mica		-130400	Dial Face
9	-45780	Condenser .02 Mf.-160 V.		-130445	Bracket-Dial Face Mtg.
10	-45780	Condenser .02 Mf.-160 V.		-49780	Pointer-Dial Hand
11	-45783	Condenser 16 Mf.-250 V.		-49975	Drive Shaft
12	-50105	Condenser .1 Mf.-160 V.		-49665	Bearing-Drive Shaft
13	G2 -34002	Condenser 100 Mmf.-Mica		-28032	Spring-Shaft Retainer
14	-50084	Condenser .003 Mf.-160 V.		G11 -41582	Drive Cord
15	-34002	Condenser 250 Mmf.-Mica		-51752	Spring-Drive Cord Tension
16	-50084	Condenser .003 Mf.-160 V.		-49674	8 Prong Socket
17	-130462	Condenser .002 Mf.-160 V.		-49693	Socket Insulator
18	G6 -34002	Condenser 25 Mmf.-Mica		-130389	Speaker Socket
19	NONE			-46447	Tube Shield
20	-35930	Resistor 200,000 Ohm 1/4 W.		-131090	BS. Cabinet
21	-35928	Resistor 60,000 Ohm 1/4 W.		-131091	Carton-BS. Cabt. Shipping
22	-38918	Resistor 600 Ohm 1/2 W.		-130313	Knob-V.C. & On-Off Sw.
23	-35927	Resistor 2 Megohm 1/4 W.		-130540	Knob-Tuning
24	-36688	Resistor 3 Megohm 1/4 W.		-41742	Spring-Knob Insert
25	-35928	Resistor 60,000 Ohm 1/4 W.		-48720	Off Indicator Tack
26	-48693	Resistor 11 Megohm 1/4 W.		-130376	Cloth-Cabt. Prot. & Pol.
27	-35602	Resistor 1 Megohm 1/4 W.		-130508	Escutcheon & Lens
28	-35927	Resistor 2 Megohm 1/4 W.		CR 60	Crosley "A & B" Battery Pack
29	NONE				

# MODEL B36BS

## TUBE SOCKET VOLTAGE READINGS (MEASURED FROM SOCKET PIN TO CHASSIS) PIN NUMBER

Tube	Function	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Osc.-Mod.	GND.	1.5	87	43	Osc. Grid	87	F—	J.B.
1N5GT	I-F Amp.	GND.	1.5	87	87	N.C.	N.C.	F—	N.C.
1H5GT	Det.-A.V.C.-1st A. F.	GND.	1.5	20	DIODE	J.B.	J.B.	F—	GND.
1T5GT	Output	GND.	1.5	84	87	—6	N.C.	F—	J.B.

\* —6 volts measured across item 22.

Max. Power Output approximately 320 milliwatts.

"A" Battery Drain approximately .20 Ampere at 1.5 Volts.

"B" Battery Drain approximately 11 Milliampères at 90 Volts. \*Measured across item 22. J.B.=Junction Block.

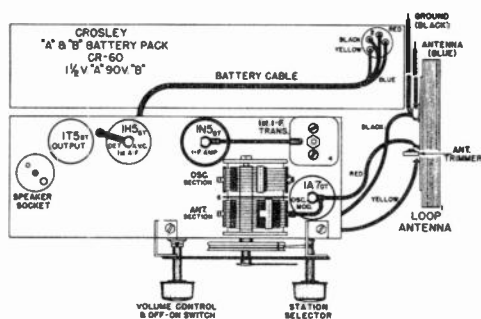


Fig. 1

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

### CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1T5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### 1. Tuning I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the

signal generator to the "GND" lead or chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust 2nd I-F trimmer, located below spk. front chassis flange, for maximum reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

### 2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" lead (Blue). (Check dial pointer to see that it covers complete range.)

(a) Set the signal generator to 1650 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

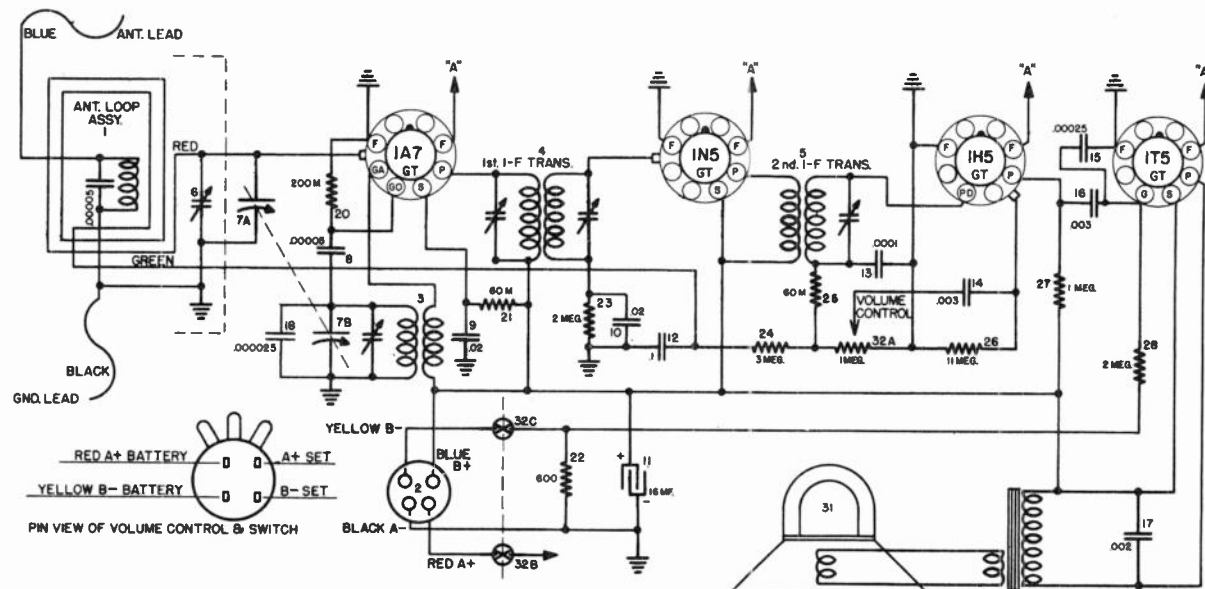
(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on loop for maximum output. DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

## WIRING DIAGRAM — MODEL B36BS



PARTS LIST ON PAGE 78

# CHASSIS No. 37

## ALIGNMENT PROCEDURE

Preliminary  
 Output Meter Connections.....To Voice Coil Terminals of Speaker or to Plate of 35L6GT and Cathode of 35Z5GT  
 Generator Ground Connections.....In Series with .001 MFD. Condenser  
 Dummy Antenna.....400 Ohm Carbon Resistor in Series with Generator Output  
 Position of Volume Control.....Fully On

### ALIGNMENT CHART

Step	Signal Generator Frequency Setting	Input	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks	Location
1 1-A	456 Kc. 456	Antenna Antenna	S. B. S. B.	Fully open Fully open	2nd I-F (2) 1st I-F (2) Wave trap	Adjust for maximum output. Adjust for minimum output.	Tops of I. F. Trans. Center Section of 3 Sec. Trimmer.
2	15.3 Mc.	Antenna	S. W.	Fully open	S. W. "OSC"	Adjust for maximum output.	Top of Tuning Condenser
3	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant."	Adjust for maximum output while rocking gang thru signal.	L. H. Section of 3 Sec. Trimmer.
4	1650 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.	R. H. Section of 3 Sec. Trimmer.
5	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT"	Adjust for maximum output.	On Cabinet Back.

When aligning the short wave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position). Repeat original alignment procedure for more accurate adjustments. Always keep signal generator output low as possible to prevent action of A.S.C. circuit.

Socket Voltage is measured @ 117.5 V line

### TUBE VOLTAGE CHART

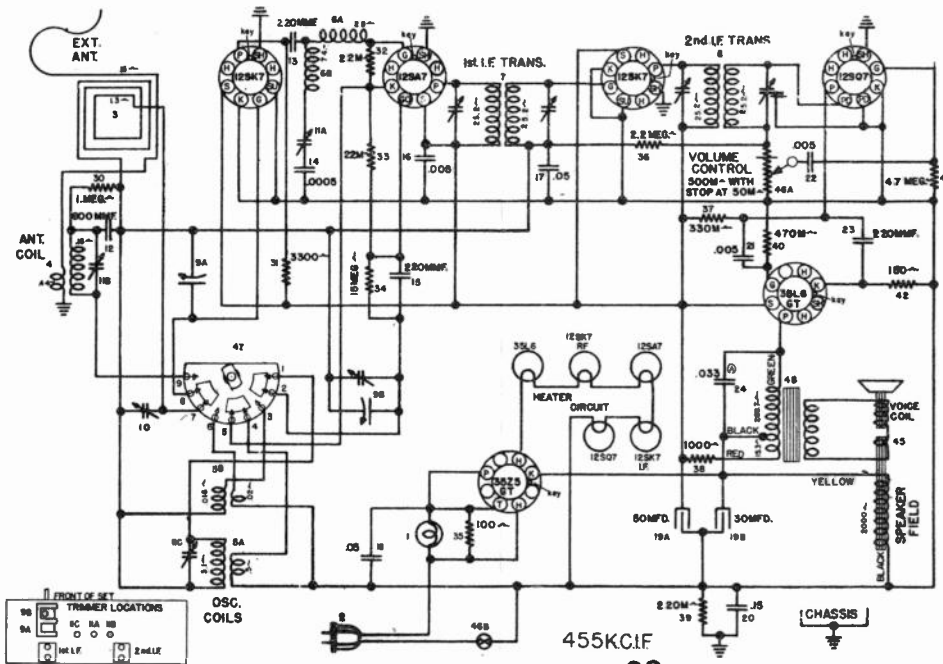
(BETWEEN SOCKET PINS AND B-) WITH 1000 OHM PER VOLT—500 V. RANGE D. C. VOLTMETER

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
12SK7	R. F. Amp.	.....	.....	0	Neg.	0	76.	.....	40
12SA7	Osc. Mod.	.....	.....	76	76	Neg.	0	.....	Neg.
12SK7	I. F. Amp.	.....	.....	0	Neg.	0	76	.....	76
12SQ7	Det., Etc.	.....	0	0	0	Neg.	16°	.....	0
35L6	B. P. O.	.....	.....	92	76	0	.....	.....	4
35Z5	Rect.	.....	.....	.....	.....	113AC	.....	.....	100

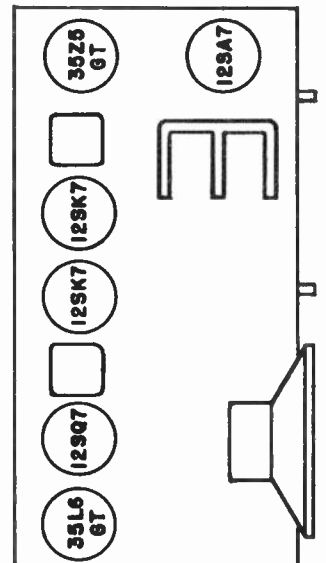
All voltages may vary 10% of values indicated. Neg. indicates Neg. reading on Voltmeter Scale but of too small a value to record accurately.

\* Measured on 100 V. Scale. Power consumption at 117.5 V. line, 30 watts. Drop across Speaker Field—100 V. Current thru Speaker Field—52 M.A.

### WIRING DIAGRAM



### TUBE LOCATION



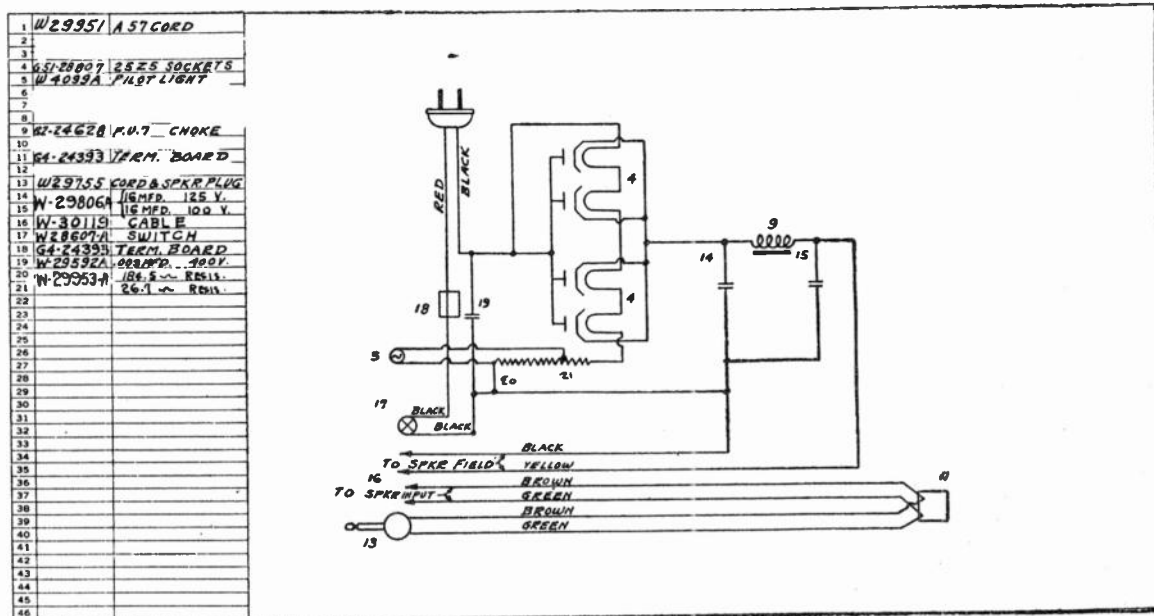
PARTS LIST — MODELS 62-TA, 62-TC, 62-TD — CHASSIS No. 37

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb, Dial Light 6.3V.	29		
	G15 —49637	Socket Assem.—Dial Light.	30	G25 —39002	Res. 1 Meg. 1/4 W.
2	—132300-1	Power Cable & Plug.	31	G10 —39002	Res. 33,000 Ohm 1/4 W.
3	—132266-1	Loop Ant. & Back Assem.—TA & TC.	32	G15 —39002	Res. 22,000 Ohm 1/4 W.
	—132265-1	Loop Ant. & Back Assem.—TD.	33	G15 —39002	Res. 22,000 Ohm 1/4 W.
4	G235 —32000	Ant. Coil—H.F.	34	—50671	Res. 15 Meg. 1/4 W.
5A	G264 —32002	Osc. Coil—B.C.	35	G63 —39002	Res. 100 Ohm 1 W.
5B	G264 —32002	Osc. Coil—H.F.	36	G27 —39002	Res. 2.2 Meg. 1/4 W.
6A	G117 —32001	R. F. Plate Coil.	37	G22 —39002	Res. 330,000 Ohm 1 W.
6B	G117 —32001	I. F. W. T. Coil.	38	G69 —39002	Res. 1000 Ohm 1 W.
7	G270 —32004	1st I. F. Trans.	39	G21 —39002	Res. 220,000 Ohm 1/4 W.
8	G271 —32004	2nd I. F. Trans.	40	G23 —39002	Res. 470,000 Ohm 1/4 W.
9A	—132150-1	Var. Cond. Ant. Sec.	41	G29 —39002	Res. 4.7 Meg. 1/4 W.
9B	—132150-1	Var. Cond. Osc. Sec.	42	G33 —39002	Res. 150 Ohm 1/4 W.
10	—132267	Ant. Trimmer.	43		
11A	—132240-2	Cond. Trimmer—R. F. Plate.	44		
11B	—132240-2	Cond. Trimmer H. F. Ant. Coil.	45	—49675-4	Speaker.
11C	—132240-2	Cond. Trimmer B. C. Osc. Coil.	46A	—132222-1	Vol. Control 500,000 Ohm.
12	G21 —34002	Cond. 600 Mmf.	46B	—132222-1	A. C. Switch.
13	G9 —39004	Cond. 220 Mmf. Mica.	47	—49772	Switch B. C.
14	G5 —39001	Cond. .0005 Mfd. 600 V.	48	—132152	Output Trans.
15	G9 —39004	Cond. 220 Mmf.		—132231-1	Dial Assem.
16	G11 —39001	Cond. .005 Mfd. 600 V.		—132097-6	Dial Pointer.
17	G65 —39001	Cond. .05 Mfd. 200 V.	G3	—132167	Drive Cord Assem.
18	—45782	Cond. .05 120 V. A. C.		—132119-3	Drive Shaft.
19A	—132226-1	Cond. 50 Mfd. Elec.		—51071	Ret. Ring Dr. Shaft.
19B	—132226-1	Cond. 30 Mfd. Elec.		—132256-1	TA Cabinet—Br.
20	G68 —39001	Cond. .15 Mfd. 200 V.		—132255	TC Cabinet—Wh.
21	G11 —39001	Cond. .005 Mfd. 600 V.		—132260-1	TD Cabinet—Wood.
22	G11 —39001	Cond. .005 Mfd. 600 V.		—132127	Knob—3 Req.
23	G9 —39004	Cond. 220 Mmf.		—42911	Paper Washer—Knob
24	G37 —39001	Cond. .01 Mfd. 400 V.		—132258-1	Dial Lens.
25				—48200	Trimount Stud—Lens Mtg. (6)
26				—132124	Trimount Stud—Back Mtg. (4)
27				—45580	Grommet—Rubber—Var. Cond.
28					

**GROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

Model 38





## EXPORT DIVISION — MODELS 39AE, 39BK, 39BN

Output Meter Connection . . . . .	Plate to Screen of 50L6GT
Generator Ground Connection . . . . .	See foot note †
Dummy Antenna in series with generator output . . . . .	See chart below
Position of volume control . . . . .	Fully on

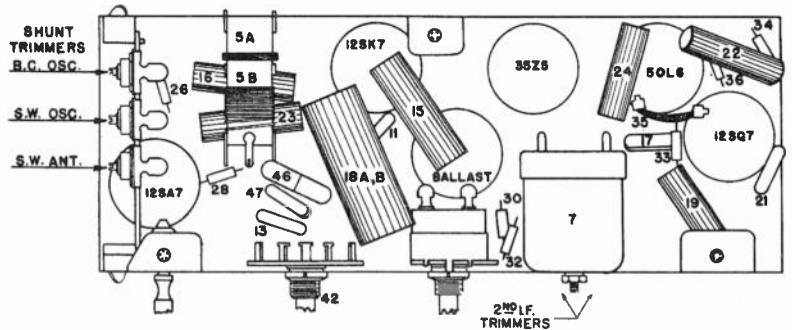
### ALIGNMENT PROCEDURE CHART

Step	Signal Dummy Antenna	Generator Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 Mf.	455 Kc.	Ant. Lead	B.C. (left)	Fully Open	2nd I-F(2) 1st I-F(2)	Located front chassis flange. Adjust for maximum output. Top 1st I-F Assm. Adjust for maximum output.
2.	400 ohm (Carbon)	15.3 Mc.	Ant. Lead	S.W. Eight	Fully Open	S.W. "OSC" (On Gang)	Adjust for Peak.
3.	400 Ohm Carbon	15.0 Mc.	Ant. Lead	S.W. (Right)	Approx: 15 Mc. on dial	S.W. "Ant" Center trimmer right end of chassis	Adjust for maximum signal while rocking gang.
4.	.0002 Mf.	1650 Kc.	Ant. Lead	B.C. (Left)	Fully Open	B.C. "OSC" Front trimmer right end of chassis	Adjust for Peak. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Ant. Lead	B.C. (Left)	Approx. 1400 on dial	B.C. "ANT" Rear trimmer right end of chassis	Adjust for maximum output.

†The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver. If a ground return from the signal generator is necessary connect generator ground lead through a .001 Mf. condenser to receiver chassis.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency (fundamental) rather than on the image frequency which is approximately 910 kilocycles less as indicated on the radio dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak (correct peak is the second peak on trimmer from the closed position). Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.



Bottom View — Model 39

### SOCKET VOLTAGES — MODEL 39

Measured from socket contact to chassis with 1000 ohm/volt 250 range voltmeter. Readings may vary 10% values given.

TUBE	FUNCTION	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
12SA7	Converter	GND.	H	80	80	10.5	—	H	Grid
12SK7	I-F Amp.	GND.	H	GND.	Grid	—	80	H	80
12SQ7	Det. A.V.C. A-F	GND.	Grid	J.B.	Diode	Diode	26	H	H
50L6GT	Output	GND.	H	75	80	Grid	N.C.	H	4.5
35Z5GT	Rectifier	N.C.	H	HT	N.C.	117 A.C.	N.C.	H	106

Gnd.=Ground. H=Heater. J.B.=Junction Block. N.C.=No Connection.

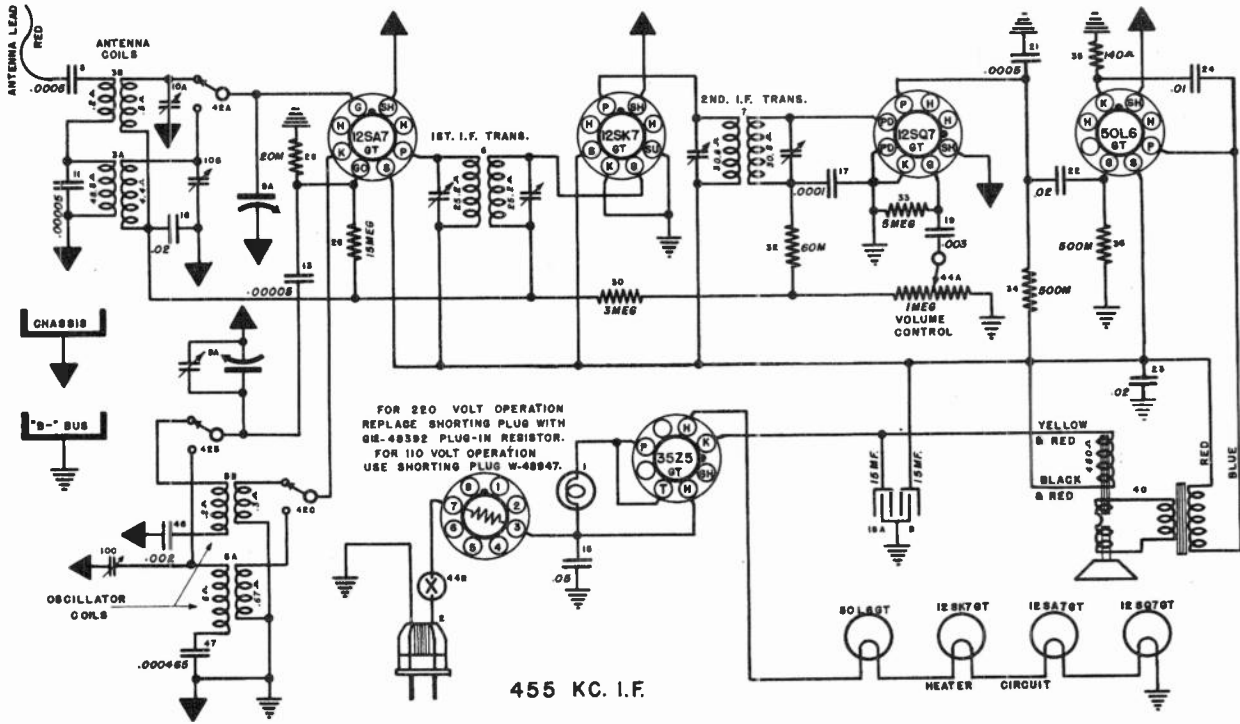
Power Consumption @ 117 V.A.C.=30 watts.

Power Consumption @ 230 V.A.C. with G12-48392 Ballast=60 watts.

Drop Across Speaker=26 volts.

Maximum Power Output=1.5 watts.

# MODEL 39



Wiring Diagram — Model 39

## PARTS LIST — MODEL 39

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light	40	G6 —49698	Speaker & Output Trans.
	G1 —49637	Socket Assm. Dial Light		—131337	Output Transformer
2	—49775	Power Cord & Plug	41	NONE	
	G12 —48392	Ballast Resistor—220 V. Operation	42	—49808	Band Change Switch
	—48947	Shorting Plug—110 V. Operation	43	NONE	
3	G226 —32000	Dual Antenna Coil	44	—49774	Vol. Cont. (1 Meg.) & Switch
		A=B.C. Coil—550-1600 Kc.	45	NONE	
		B=S.W. Coil—4.8-15.0 Mc.	46	G23 —34005	Condenser 2000 Mmf.—Mica
4	NONE		47	G22 —34005	Condenser 465 Mmf.—Mica
5	G243 —32002	Dual Oscillator Coil		—130989	Dial Face
		A=B.C. Coil—550-1600 Kc.		—4978	Pointer—Dial Hand
		B=S.W. Coil—4.8-15.0 Mc.		—130445	Bracket—Dial Mtg.
6	G250 —32004	1st I-F Assy.—455 Kc.		—49741	Drive Shaft
7	G252 —32004	2nd I-F Assy.—455 Kc.		—49665	Bearing (D.S.) Riv. to Chassis
8	G20 —34005	Condenser 500 Mmf.—Mica		—28032	Spring—Shaft Retainer
9	—130920	Condenser—2 Sect. Var. Tuning Gang		—49770	Trimount Stud—Dial Mtg.
10	MG4 —49710	Condenser—3 Sect. Shunt Trimmer & Brkt. Assy.		—45580	Rubber Grommet—Gang Mtg.
		Section 10A=S.W. "Ant" Trimmer		—45620	Headed Bushing—Gang Mtg.
		Section 10B=B.C. "Ant" Trimmer		—130423	3-32 x 1/8 Screw—Gang Mtg.
		Section 10C=B.C. "Osc" Trimmer		G11 —41582	Drive Cord
		Condenser 50 Mmf.—Mica		—51752	Spring—Cord Tension
11	G21 —34005	Condenser 50 Mmf.—Mica		—49674	Socket—3 Prong Octal.
12	NONE			—49693	Insulator—Socket Mtg.
13	G21 —34065	Condenser 50 Mmf.—Mica		—49697	Bracket—Speaker Mtg.
14	NONE			—130022	AE Cabinet
15	—130923	Condenser .05 Mf.—400 V.		—49971	Shipping Carton—AE Cabt.
16	—49487	Condenser .02 Mf.—160V.		—130097	Back—AE Cabt. Back
17	G19 —34005	Condenser 100 Mmf.—Mica		—48758	Trimount Stud—AE & BK Back Mtg.
18	—49664	Condenser Dual Electrolytic		—46953	Knob (3 req.) AE Cabt.
		Section A—15 Mf.—140 Volt		—41742	Spring Knob Insert
		Section B—15 Mf.—120 Volt		—49832	Dial Lens—AE & BK Cabts.
19	—130922	Condenser .003 Mf.—400 V.		—49770	Trimount Stud—AE & BK Lens Mtg.
20	NONE			—130490	Screw—Chassis Mtg.—(AE & BK)
21	G20 —34005	Condenser 500 Mmf.—Mica		—30409	Flat Washer—Chassis Mtg. (AE & BK)
22	—49487	Condenser .02 Mf.—160 V.		MG16 —49800	BK Cabt.—Ivory
23	—49487	Condenser .02 Mf.—160 V.		—130098	Back—BK Cabt.
24	—49489	Condenser .01 Mf.—400 V.		—130552	Shipping Carton BK Cabt.
25	NONE			—49117	Handle—BK Cabt.
26	—50671	Resistor 15 Megohm 1/4 W.		—49161	Screw—Handle Mtg. (BK)
27	NONE			O-8	Washer—(3 req.) BK Cabt.
28	—36760	Resistor 20,000 Ohm 1/4 W.		—130769	Knob—BK Cabt.
29	NONE			—131219	BK Cabinet (Wood)
30	—36688	Resistor 3 Megohm 1/4 W.		—131221	BN Cabinet
31	NONE			S-80	Back—BN Cabt.
32	—35928	Resistor 60,000 Ohm 1/4 W.		—131220	Screw—BN Cabt Mtg. (8)
33	—47131	Resistor 5 Megohm 1/4 W.		—131243	Shipping Carton BN Cabt.
34	—36322	Resistor 500,000 Ohm 1/4 W.		—131162	Knob (3 req.) BN Cabt.
35	—47512	Resistor 140 Ohm 1/4 W.		—130580	Dial Escutcheon & Lens
36	—36322	Resistor 500,000 Ohm 1/4 W.		—45020	Screw—Chassis Mtg.—BN Cabt.
37	NONE			—130394	Washer—Chassis Mtg. BN Cabt.
38	NONE			—130376	Felt Pad—Mtg. Screw Cover
39	NONE				Cabt. Protector Polishing Cloth

# EXPORT MODEL 40-BP

## ALIGNMENT PROCEDURE—MODEL 40-BP

### PRELIMINARY

Output Meter Connections . . . . .	Plate and Screen 6K6G
Generator Ground Connection . . . . .	To Chassis or Ground Lead
Dummy Antenna in series with Generator Output . . . . .	See chart below
Position of Volume Control . . . . .	Fully on

### ALIGNMENT CHART

Step	SIGNAL GENERATOR			Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
	Dummy Antenna	Frequency Setting	Input Connection To Radio				
1.	.05 Mf.	456 Kc.	Antenna	S. B.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2.	400 Ohm Carbon	15.4 Mc.	Antenna	S. W.	Fully Open	S. W. "Osc." (Rear Section of Tuning Cond.)	Adjust for maximum output.
3.	400 Ohm Carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on Dial	S. W. "Ant." (Center Trimmer Right End of Chassis)	Adjust for maximum output while rocking gang thru signal.
4.	.0002 Mf.	1650 Kc.	Antenna	S. B.	Fully Open	S. B. "Osc." (Front Trimmer Right End of Chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 140 on Dial	S. B. "Ant." (Rear Trimmer Right End of Chassis)	Adjust for maximum output.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

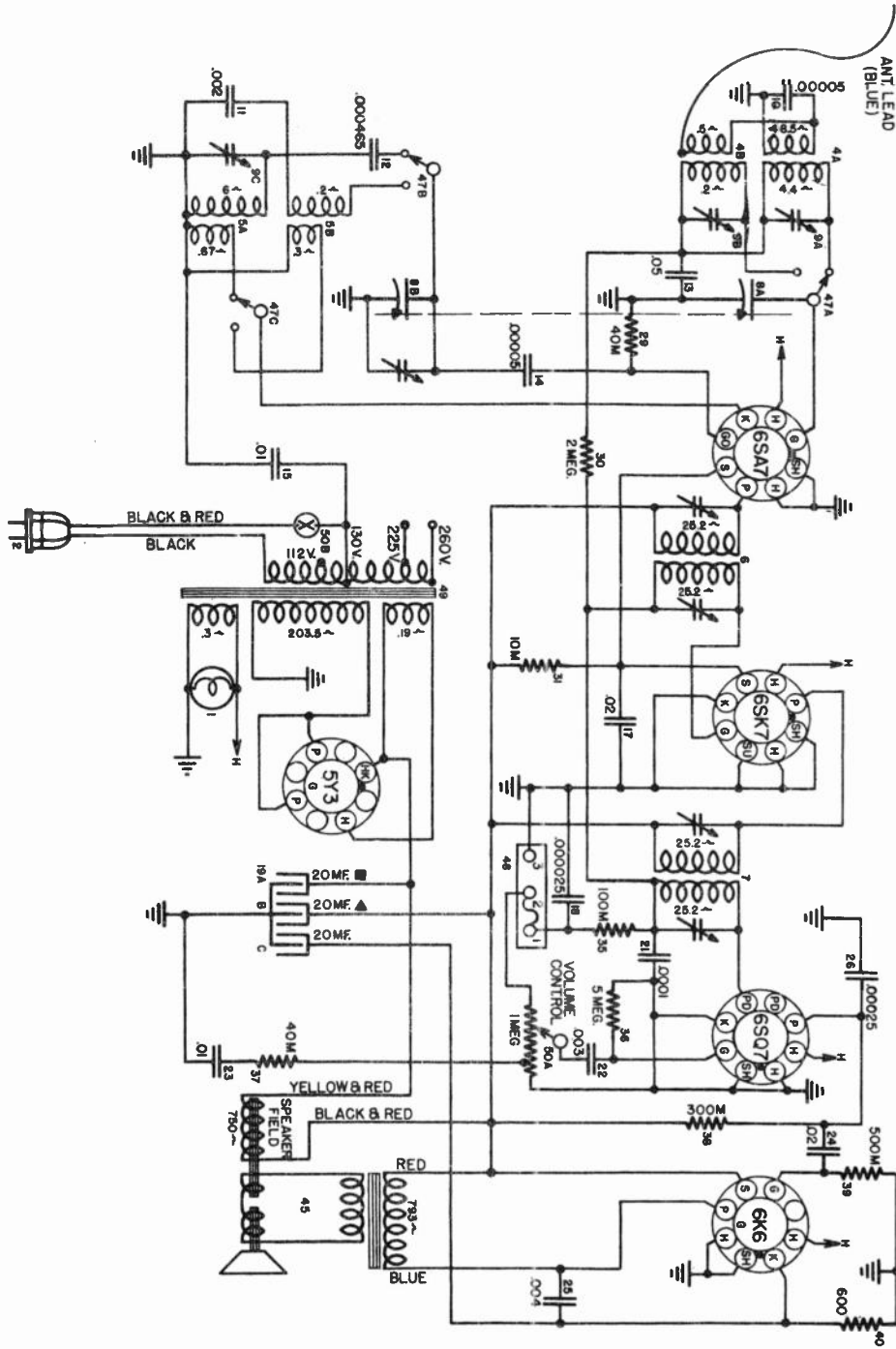
Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.

### PARTS LIST—MODEL 40-BP

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb—Dial Light 6-8 Volt	34	NONE	
	G9 —49637	Socket Assy. Dial Light	35	—35600	Resistor 100,000 Ohm ¼ W.
2	—45769	Power Cord and Plug	36	—47131	Resistor 5 Megohm ¼ W.
3	NONE		37	—36761	Resistor 40,000 Ohm ¼ W.
4	G227—32000	Dual Antenna Coil	38	—35801	Resistor 300,000 Ohm ¼ W.
		A=550-1600 Kc. Band	39	—36322	Resistor 500,000 Ohm ¼ W.
		B=6.0-15.0 Mc. Band	40	—38918	Resistor 606 Ohm ½ W.
5	G243—32002	Dual Oscillator Coil	41	NONE	
		A=550-1600 Kc. Band	42	NONE	
		B=6.0-15.0 Mc. Band	43	NONE	
6	G250—32004	1st I-F Assy.—455 Kc.	44	NONE	
7	G251—32004	2nd I-F Assy.—455 Kc.	45	G4 —49792	Speaker
8	—131114	2 Sect. Var. Tuning Cond. Gang	46	NONE	
9	MG11—49820	3 Sect. Shunt Trimmer Cond. Assy.	47	—49809	Band Selector Switch
		A=Std. B. C. Antenna	48	G56 —26719	Phono Terminal Board
		B=S. W. Antenna	49	—130514	Power Transformer
		C=Std. B. C. Oscillator		—49817	Strap—P. T. Support
10	G21 —34005	Condenser 50 Mmf.—Mica	50	—130044	Vol. Contr. (1 Meg.) & Pwr. Sw.
11	G23 —34005	Condenser 2000 Mmf.—Mica		—49674	Socket 8 Prong Octal Tube
12	G22 —34005	Condenser 465 Mmf.—Mica		—130860	Retainer—5Y3G Tube
13	—130923	Condenser .05 Mf.—400 V.		—131120	Dial Face & Support
14	G21 —34005	Condenser 50 Mmf.—Mica		—49846	Pointer—Dial Hand
15	—49489	Condenser .01 Mf.—400 V.		—49847	Drive Shaft
16	NONE			—49665	Bearing—Drive Shaft—Riv. to Chassis
17	—131118	Condenser .02 Mf.—400 V.		—28032	Spring—Drive Shaft Retaining
18	G24 —34005	Condenser 25 Mmf.—Mica		G39 —41582	Drive Cord 23" Long
19	—49794	Condenser—3 Section Electrolytic		—50607	Spring—Drive Cord Tension
		Section A—20 MF.—250 Volts		—130323	Plate—Speaker Mounting
		Section B—20 Mf.—250 Volts		—130310	Bracket—Speaker Support
		Section C—20 Mf.—25 Volts		—46480	Headed Bushing—Spkr. Mtg. (3 Req.)
20	NONE			—45580	Rubber Grommet—Spkr. Mtg. (3 Req.)
21	G19 —34005	Condenser 100 Mmf.—Mica		—43885	Screw—Spkr. Plate Mtg. (2 Req.)
22	—130922	Condenser .003 Mf.—400 V		—35066	Screw—No. 8-32x¼" Spkr. (2 Req.)
23	—131116	Condenser .01 Mf.—400 V.		—49001	Screw—No. 6-32x¼" Spkr. (2 Req.)
24	—131118	Condenser .02 Mf.—400 V.		—130185	Screw—No. 8-32x¼" Spkr. Sup. Brkt. Mtg. (1)
25	—131117	Condenser .004 Mf.—400 V.		—131199	BP Cabinet
26	G24 —34005	Condenser 250 Mmf.—Mica		—131200	Shipping Carton BP Cabinet
27	NONE			—131205	Back—BP Cabinet
28	NONE			S-80 (FS-18)	Screw—No. 4x¾ Cabt. Back Mtg. (8)
29	—36761	Resistor 40,000 Ohm ¼ W.		—180876	Cloth—Prot. & Polishing
30	—35927	Resistor 2 Megohm ¼ W.		—131246	Knob—(3 Req.)
31	—47100	Resistor 10,000 Ohm ¼ W.		—181163	Eacutcheon & Lens
32	NONE			—180580	Screw—Chassis Mtg. (4 Req.)
33	NONE				

Wiring Diagram — Model 40-BP



SOCKET VOLTAGES—MODEL 40

All voltages measured from socket contact to chassis using 1000 OHM/VOLT D. C. Voltmeter, except heaters.

TUBE	FUNCTION	SOCKET CONTACT							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1-6SA7	Oscillator-Mixer	Gnd.	Gnd.	203	92	—	—	6.3	0
1-6SK7	I-F Amplifier	Gnd.	Gnd.	Gnd.	—	0	92	6.3	203
1-6SQ7	Det.-A.V.C.—1st A-F Amp.	Gnd.	—	Gnd.	—	—	70	6.3	Gnd.
1-6K6G	Output	Gnd.	Gnd.	190	203	—	N. C.	6.3	13.2
1-5Y3G	Rectifier	N. C.	245 D.C. 4.5 A.C.	J. B.	268 A. C.	J. B.	268 A. C.	J. B.	245 D. C. 4.5 A.C.

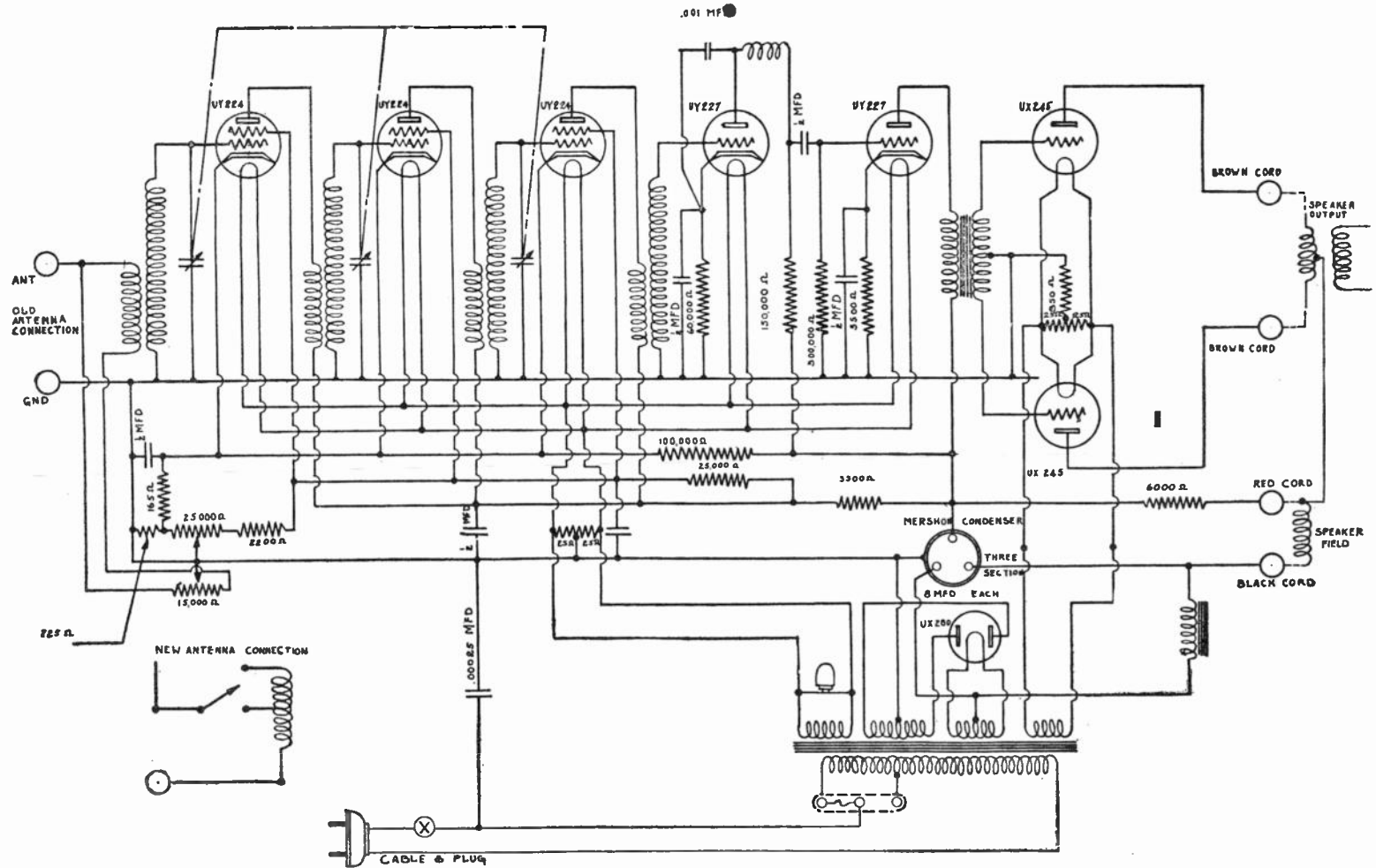
Gnd. = Ground. J. B. = Junction Block. N. C. = No Connection.

Voltage Drop Across Speaker Field = 42 volts.

Maximum Power Output @ 130 Volt Line = 4.05 watts.

Input Power @ 118 Volt line = 42 watts.

# Models 40-S, 41-S, 42-S and 82-S



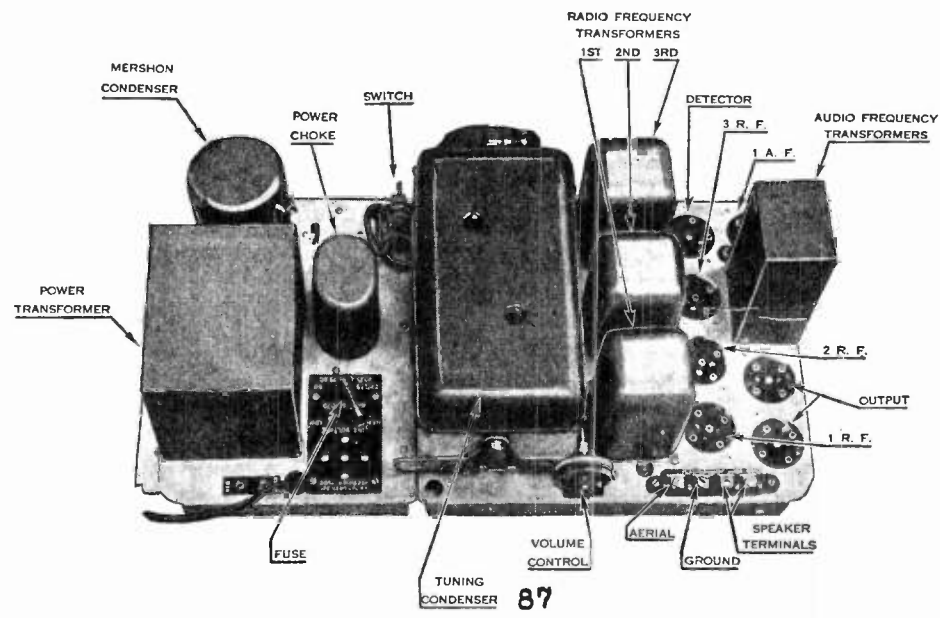
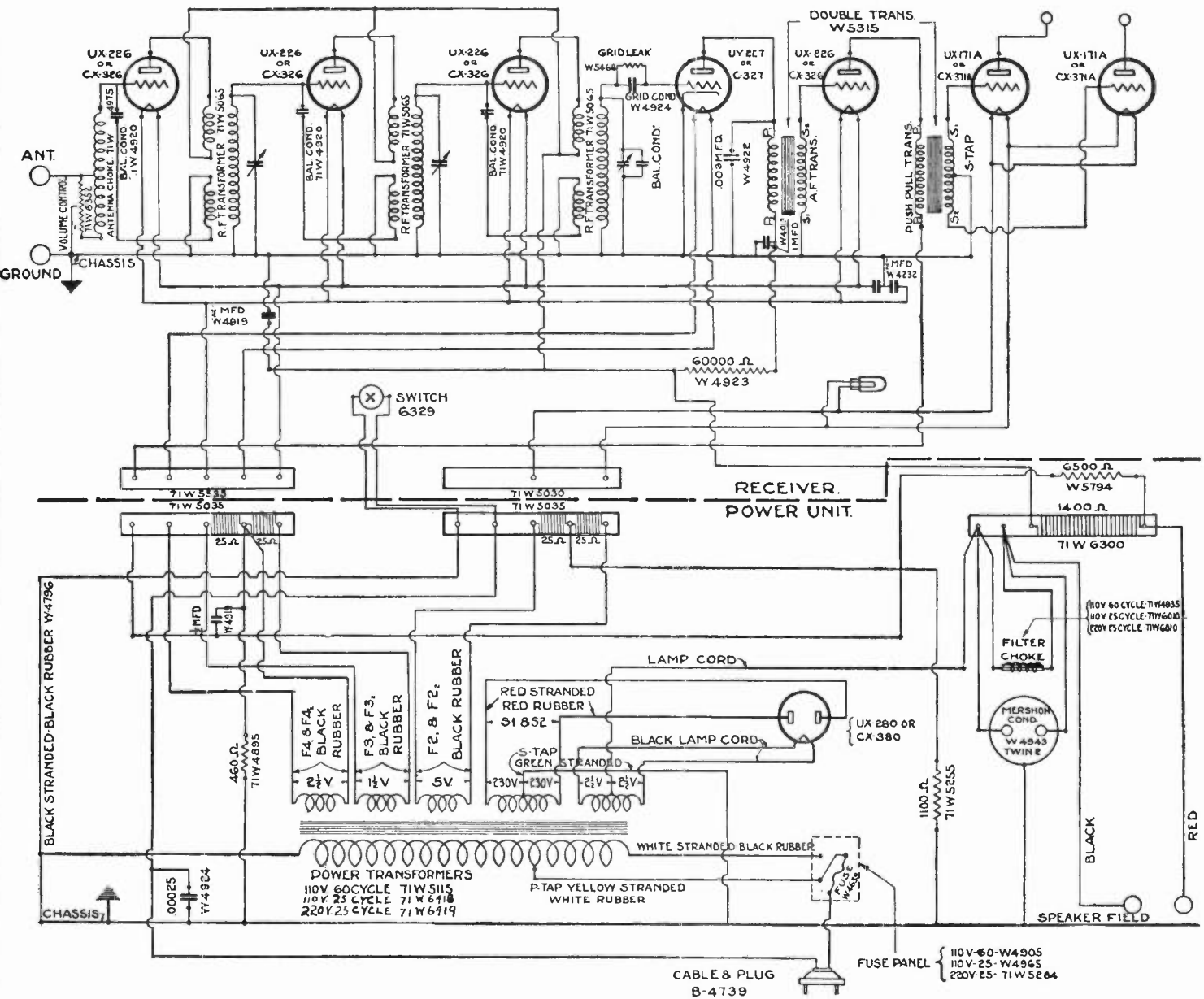
98

## PARTS LIST MODELS 40S, 41S, 42S, 82S

1	W-7145	Antenna Coupler
2	W-6797-B	R.F. Transformer
1		R.F. Choke
1	W-7022	Volume Control
1	W-6742	Filter Choke
1	W-5253	Filter Con. (8-8-8)
1	W-6590	Push Pull Input Trans.
1	B-6249-A	Output Trans. (on speaker)
1	W-6682	Power Transformer

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

# Models 41-A and 42



# EXPORT DIVISION — EXPORT MODEL 41-BQ

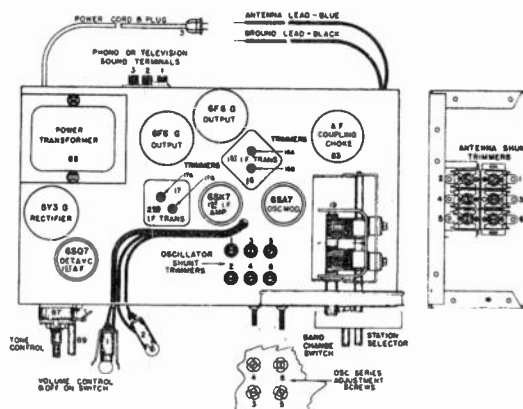
## ALIGNMENT PROCEDURE — MODEL 41-BQ

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Plate of 6F6G's
Generator Ground Connections . . . . .	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output . . . . .	See Chart Below
Position of Volume Control . . . . .	Fully On
Position of Tone Control . . . . .	To Treble or Speech

### ALIGNMENT PROCEDURE CHART

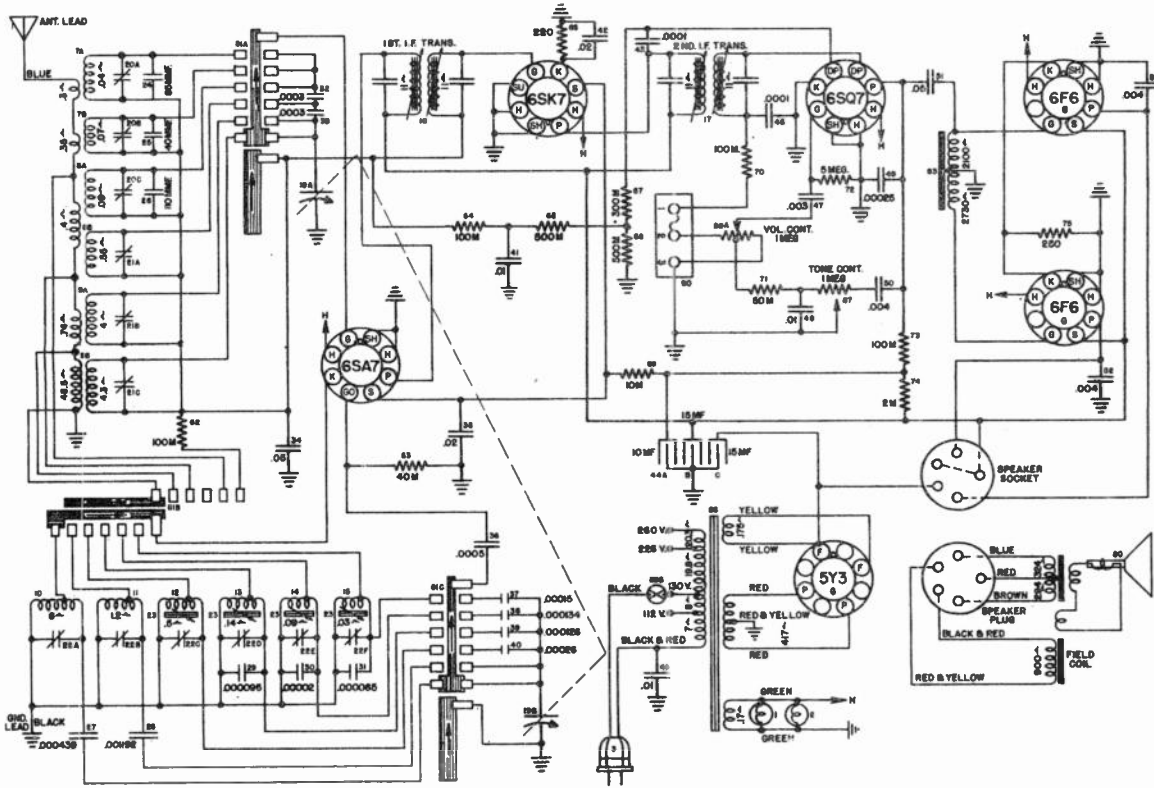
Step	Dummy Antenna	Signal Generator Frequency Setting	Generator Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	200 Mmf.	456 Mc.	Antenna	Band No. 1	Fully open	16A, 16B and 17A, 17B, 1st and 2nd I-F assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Antenna	Band No. 1	Fully open	No. 1 oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Antenna	Band No. 1	Approx. 1400 on dial	No. 1 Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Antenna	Band No. 2	Fully open	No. 2 Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Antenna	Band No. 2	Approx. 4.5 90 Meter band	No. 2 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Antenna	Band No. 3	Fully open	No. 3 Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Antenna	Band No. 3	Closed	No. 3 Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Antenna	Band No. 3	Approx. 9.0 60 Meter band	No. 3 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Antenna	Band No. 4	Fully closed	No. 4 Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Antenna	Band No. 4	Closed	No. 4 Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Antenna	Band No. 4	Approx. 11.0 31 Meter Band	No. 4 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Antenna	Band No. 5	Fully open	No. 5 Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Antenna	Band No. 5	Closed	No. 5 Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Antenna	Band No. 6	Fully open	No. 6 Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Antenna	Band No. 6	Closed	No. 6 Oscillator series	Adjust for maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Antenna	Band No. 6	Approx. 22 16 Meter band	No. 6 Antenna shunt	Adjust for maximum output while rocking gang thru signal.



SOCKET VOLTAGES—MODEL 41-BQ

All voltages measured from socket contact to chassis using 1000 ohm/volt D.C. voltmeter, except heaters.

TUBE	FUNCTION	SOCKET CONTACT							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1-6SA7	Oscillator-Mixer	GND.	GND.	231	105	—	0	6.3	—
1-6SK7	I-F Amplifier	GND.	GND.	GND.	0	2.8	105	6.3	231
1-6SQ7	Det.-A.V.C.-1st Audio Amp.	GND.	0	GND.	0	0	67	6.3	GND.
2-6F6G	Output (Push Pull)	GND.	GND.	220	229	—	J.E.	6.3	15.0
1-5Y3G	Rectifier	N.C.	315 D.C.	J.B.	335 A.C.	N.C.	335 A.C.	N.C.	315 D.C.
			510						5.0



Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Bulb—Dial Light	58		
2	W-43567	Bulb—Dial Light	59		
3	E-45769-A	Cable & Plug (Power)	60		
4			61		
5			62	—35000	Res. 100 M Ohm 1/4 W. Ins.
6			63	—36761	Res. 40 M Ohm 1/4 W. Ins.
7A	G220-32000	Coil 16-13 M Ant.	64	—38222	Res. 500 M Ohm 1/4 W. Ins.
7B	G220-32000	Coil 25-19 M Ant.	65	—35600	Res. 100 M Ohm 1/4 W. Ins.
8A	G220-32000	Coil 31 M Ant.	66	—88977	Res. 220 Ohm 1/2 W. WW. Ins.
8B	G220-32000	Coil 80-49 M Ant.	67	—32401	Res. 300 M Ohm 1/4 W. Ins.
9A	G230-32000	Coil 90 M Ant.	68	—38322	Res. 600 M Ohm 1/4 W. Ins.
9B	G230-32000	Coil 583-182 M Ant.	69	—47100	Res. 10 M Ohm 2 W. W. W. Ins.
10	G246-32002	Coil 583-182 M Osc.	70	—32600	Res. 100 M Ohm 1/4 W. Ins.
11	G246-32002	Coil 90 M Osc.	71	—07577	Res. 50 M Ohm 1/4 W. Ins.
12	G246-32002	Coil 80-49 M Osc.	72	—47131	Res. 5 Meg. Ohm 1/4 W. Ins.
13	G246-32002	Coil 31 M Osc.	73	—32600	Res. 100 M Ohm 1/4 W. Ins.
14	G247-32002	Coil 25-19 M Osc.	74	W-28018	Res. 1 M Ohm 1/2 W. Flex.
15	G246-32002	Coil 16-13 M Osc.	75	—49703	Res. 250 Ohm 2 W. W. W. Ins.
16	G258-32004	1st I-F Trans.	76		
17	G254-32004	2nd I-F Trans.	77		
18			78		
19A	—131164	Var. Cond. Ant. Sect.	79		
19B		Var. Cond. Osc. Sect.	80		
20A	—131129	Cond. Trim. 16-13 M Ant.	G5	—49792	Speaker (6-inch) & Plug
20B		Cond. Trim. 25-19 M Ant.	81A	—131145	Switch, Band Change
20C		Cond. Trim. 31 M Ant.	81B		Switch, Band Change
21A	—131129	Cond. Trim. 80-49 M Ant.	81C		Switch, Band Change
21B		Cond. Trim. 90 M Ant.	82		
22A	MG22-131131	Cond. Trim. 583-182 M Osc.	83	G2-130432A	A. F. Coupling Choke
22B		Cond. Trim. 90 M Osc.	84		
22C		Cond. Trim. 80-49 M Osc.	85		
22D		Cond. Trim. 31 M Osc.	86	—131147	Tone Control (1 Meg.)
22E		Cond. Trim. 25-19 M Osc.	87	—130515	Transformer (Power)
23	W-131197	Iron Core (4) Osc. Coils	88	—131146	Vol. Control (1 Meg.)
24	G5-34009	Cond. 85 Mmf. Mica	89A		
25	G4-34009	Cond. 40 Mmf. Mica	89B		
26	G8-34009	Cond. 110 Mmf. Mica	90	G56-26719	Phono Terminal Board
27	G14-34009	Cond. 435 Mmf. Mica			Output Transformer
28	G10-34009	Cond. 110 Mmf. Mica	D-131168-C		Cabinet—BQ
29	G18-34009	Cond. 95 Mmf. Mica			Carton—Shipping
30	G17-34009	Cond. 20 Mmf. Mica			Instructions
31	G5-34009	Cond. 85 Mmf. Mica	W-42911		Cabinet—Protector
32	G13-34009	Cond. 300 Mmf. Mica	W-45066		Grommet—Speaker Mtg.
33	G19-34009	Cond. 300 Mmf. Mica	W-45020		Flat Washer—Chassis Mtg.
34	W-130923A	Cond. .05 Mf. 400 V. Paper	W-45580		Grommet—Speaker Mtg.
35	W-131118	Cond. .02 Mf. 400 V. Paper	—49796		Headed Bushing—Speaker Mtg.
36	G18-34009	Cond. 500 Mmf. Mica	W-2309		Flat Washer—Speaker Mtg.
37	G10-34009	Cond. 150 Mmf. Mica	—13076		Cabinet Protector Cloth
38	G10-34009	Cond. 134 Mmf. Mica	C-131191		Cabinet Back
39	G9-34009	Cond. 126 Mmf. Mica	—131189		Knob—B.C. Sw.
40	G12-34009	Cond. 280 Mmf. Mica	—131190		Knob—Tone-Vol.-Cont.
41	W-49849	Cond. .01 Mf. 400 V. Paper	G11-49837		Socket Assy.—Dial Light
42	W-131118	Cond. .02 Mf. 400 V. Paper	MG26-131132		Dial Pointer Assy.
43	G19-34009	Cond. 100 Mmf. Mica	MG7-131132		Dial Back Assy.
44A	W-49773B	Cond. 15 Mf. Elect.	MG30-131132		Riv. Idler Brkt.
44B		Cond. 15 Mf. Elect.	GB-131196		Dial Back—Welded
44C		Cond. .01 Mf. 400 V. Paper	MG15-131131		Drive Shaft Flywheel Assy.
45	W-49489	Cond. 100 Mmf. Mica	G45-41582		Drive Cord
46	W-130923A	Cond. .009 Mf. 400 V. Paper	W-131194		Drive Spring
47	W-131118A	Cond. .01 Mf. 400 V. Paper	G46-41892		Guide Cord
48	G24-34005	Cond. 250 Mmf. Mica	W-131154		Retaining Spring—Idler
49	W-131117	Cond. .004 Mf. 400 V. Paper	W-131247		Rubber Tubing—Dial Back Assy.
50	W-130923A	Cond. .004 Mf. 400 V. Paper	—131269		Screw 1/8 R.H.—Cabinet Mtg.
51	W-131117	Cond. .004 Mf. 400 V. Paper	—131295		Screw 5/16 R.H.—Cabinet Mtg.
52	W-131117	Cond. .004 Mf. 400 V. Paper	W-131290		Spring—Guide Cord Tension
53	W-131117	Cond. .004 Mf. 400 V. Paper	W-131291A		Spring—Drive Cord Tension
54	W-131117	Cond. .004 Mf. 400 V. Paper	W-131485-A		Idler Pulley
55			W-131481-B		Idler Pulley
56			W-131196		Spring Washer—Trimmer Screw
57			W-130982		Chassis End Plate
			W-130980		Tube Clamp
			W-49178		Cond. Clamp



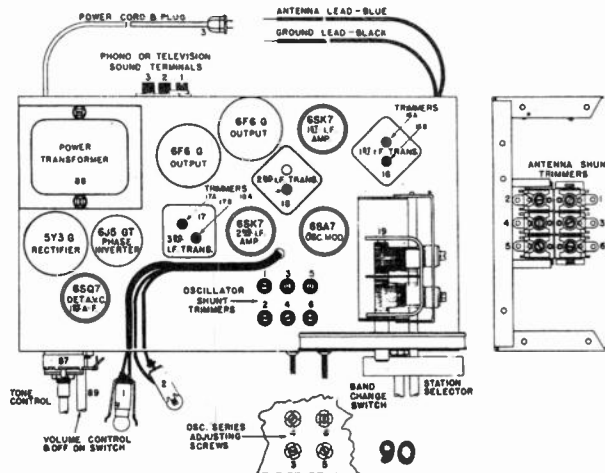
# EXPORT MODEL 42-BR

**PRELIMINARY**

Output Meter Connections . . . . .	Plate to Plate of 6F6G's
Generator Ground Connections . . . . .	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output . . . . .	See Chart Below
Position of Volume Control . . . . .	Fully On
Position of Tone Control . . . . .	To Treble or Speech

## ALIGNMENT CHART

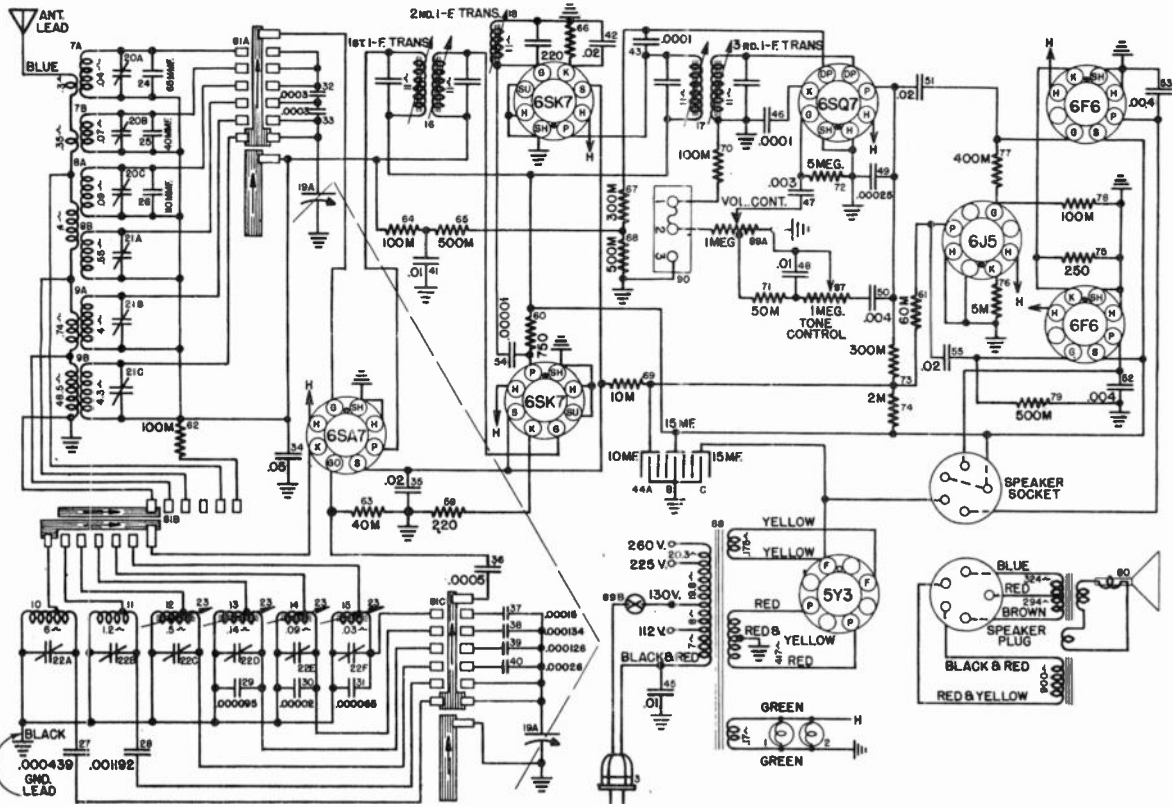
Step	Dummy Antenna	Signal Generator Frequency Setting	Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	200 Mmf.	456 Mc.	Ant.	Band No. 1	Fully open	16A, 16B, and 17A, 17B, 18A 1st, 2nd and 3rd I-F assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Ant.	Band No. 1	Fully open	No. 1 oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Ant.	Band No. 1	Approx. 1400 on dial	No. 1 Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Ant.	Band No. 2	Fully open	No. 2 Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Ant.	Band No. 2	Approx. 4.5 90 Meter band	No. 2 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Ant.	Band No. 3	Fully open	No. 3 Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Ant.	Band No. 3	Closed	No. 3 Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Ant.	Band No. 3	Approx. 9.0 60 Meter band	No. 3 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Ant.	Band No. 4	Fully closed	No. 4 Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Ant.	Band No. 4	Closed	No. 4 Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Ant.	Band No. 4	Approx. 11.0 31 Meter Band	No. 4 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Ant.	Band No. 5	Fully open	No. 5 Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Ant.	Band No. 5	Closed	No. 5 Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Ant.	Band No. 6	Fully open	No. 6 Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Ant.	Band No. 6	Closed	No. 6 Oscillator series	Adjust for, maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Ant.	Band No. 6	Approx. 22 16 Meter band	No. 6 Antenna shunt	Adjust for maximum output while rocking gang thru signal.



**SOCKET VOLTAGES— MODEL 42-BR**

Measured with 1000 ohm/volt D.C. voltmeter from chassis to tube socket contact.

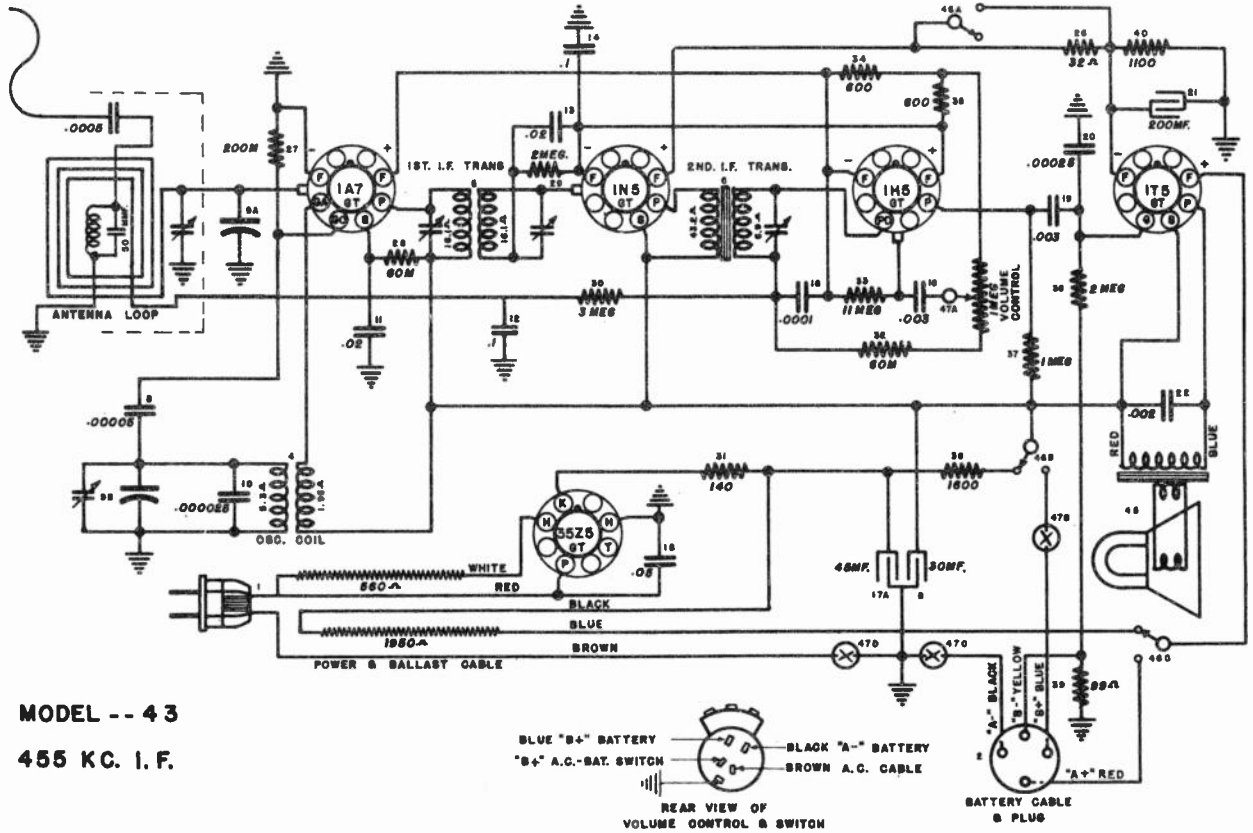
TUBE	FUNCTION	SOCKET PIN NUMBER									
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8		
6SA7	Oscillator-Mixer	GND.	GND.	220	96	—	9.3	6.3	—		
6SK7	1st I-F Amp.	GND.	GND.	GND.	—	2.5	96	6.3	213		
6SK7	2nd I-F Amp.	GND.	GND.	GND.	—	2.5	96	6.3	220		
6SQ7	Det.-A.V.C.-1st Audio	GND.	—	0	—	—	68	6.3	GND.		
6J5GT	Phase Inverter	GND.	GND.	107	J.B.	—	J.B.	6.3	5.5		
2-6F6G	Output	GND.	GND.	211	220	—	J.B.	6.3	14.0		
5Y3G	Rectifier	N.C.	308 D.C.	J.B.	330 A.C.	N.C.	330 A.C.	N.C.	308 D.C.		
			4.5						4.5		



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-48567	Bulb, Dial Light	57	—88977	Res. 220 Ohms 1/4 W. Ins.
2	W-48567	Bulb, Dial Light	58	—5564	Res. 750 Ohm 1/4 W. W.
3	G11-49837	Socket Assy.—Dial Light	59	—82828	Res. 80 M Ohms 1/4 W. Ins.
4	B-45769-A	Cable & Plug (Power)	60	—35400	Res. 100 M Ohms 1/4 W. Ins.
5			61	—8771	Res. 40 M Ohms 1/4 W. Ins.
6			62	—35400	Res. 100 M Ohms 1/4 W. Ins.
7A	G229-83000	Coil—Ant. 15-13 M	63	—38322	Res. 500 M Ohms 1/4 W. Ins.
7B		Coil—Ant. 25-19 M	64	—88977	Res. 220 M Ohms 1/4 W. Ins.
8A	G228-33000	Coil—Ant. 31 M	65	—35801	Res. 300 M Ohms 1/4 W. Ins.
8B		Coil—Ant. 60-48 M	66	—38322	Res. 500 M Ohms 1/4 W. Ins.
9A	G230-33000	Coil—Ant. 90 M	67	—47100	Res. 10 M Ohms 2 W.
9B		Coil—Ant. BC	68	—35800	Res. 100 M Ohms 1/4 W. Ins.
10	G246-33002	Coil—Osc. 90 M	69	—47979	Res. 50 M Ohms 1/4 W. Ins.
11	G244-33002	Coil—Osc. 90-49 M	70	—47131	Res. 5 Meg. Ohms 1/4 W. Ins.
12	G248-33002	Coil—Osc. 31 M	71	—35801	Res. 300 M Ohms 1/4 W. Ins.
13	G249-33002	Coil—Osc. 31 M	72	—47945	Res. 2 M Ohms 1/4 W. Flex.
14	G247-33002	Coil—Osc. 25-19 M	73	W-29013	Res. 250 Ohms 2 W. WW. Ins.
15	G245-33002	Coil—Osc. 18-13 M	74	—49445	Res. 5 M Ohms 1/4 W. Ins.
16	G287-33004	1st I-F Trans.	75	—36321	Res. 400 M Ohms 1/4 W. Ins.
17	G284-33004	2nd I-F Trans.	76	—35400	Res. 100 M Ohms 1/4 W. Ins.
18	G286-33004	3rd I-F Trans.	77	—130145	Res. 500 M Ohms 1/4 W. Ins.
19A	181164-A	Var. Cond. Ant. Sect.	78		Speaker, 8-inch
19B		Var. Cond. Osc. Sect.	79		Output Transformer
20A	—131129	Cond. Trim. 18 M Ant.	80		Switch, Band Change
20B		Cond. Trim. 25-19 M Ant.	81		
20C	—131129	Cond. Trim. 31 M Ant.	82		
21A		Cond. Trim. 90-49 M Ant.	83		
21B		Cond. Trim. 30 M Ant.	84		
21C		Cond. Trim. BC Ant.	85		
22A	MG22-131131	Cond. Trim. BC Osc.	86		
22B		Cond. Trim. 90 M Osc.	87		
22C		Cond. Trim. 60-49 M Osc.	88		
22D		Cond. Trim. 31 M Osc.	89		
22E		Cond. Trim. 25-19 M Osc.	89B		
22F		Cond. Trim. 18-13 M Osc.	90		
23	W-131197	Iron Core (4) Osc. Coils		G58-26719	Phono Terminal Board
24	G3-131502	Cond. 60 Mmf. Mica		D-13120C	Cabinet—BR
25	G2-131502	Cond. 40 Mmf. Mica		—131231	Carton—Shipping
26	G6-131502	Cond. 110 Mmf. Mica		—131232	Instructions
27	G18-131502	Cond. 489 Mmf. Mica		W-45590	Flat Washer—Chassis Mtg.
28	G1-131501	Cond. 1192 Mmf. Mica		W-45590A	Grommet—Chassis Mtg.
29	G19-131502	Cond. 95 Mmf. Mica		—49796	Grommet—Spkr. Mtg.
30	G1-131502	Cond. 200 Mmf. Mica		W-2906	Headed Bushing—Spkr. Mtg.
31	G8-131502	Cond. 65 Mmf. Mica		—13376	Flat Washer—Spkr. Mtg.
32	G11-131502	Cond. 800 Mmf. Mica		B-131294	Cloth—Cab. Protector
33	G11-131502	Cond. 800 Mmf. Mica		—131189	Cabinet Back
34	W-130922-A	Cond. .05 Mf. 400 V. Paper		—131190	Knob—B.C. Sw.
35	W-131115-A	Cond. .02 Mf. 400 V. Paper		W-131189	Knob—Vol.—Tuning—T.C.
36	G5-131502	Cond. 600 Mmf. Mica		W-131189	Dial Pointer
37	G4-131502	Cond. 150 Mmf. Mica		MC27-131123	Dial Back Assy.
38	G8-131502	Cond. 134 Mmf. Mica		W-131189	Dial Back Mtg. Bracket
39	G7-131502	Cond. 126 Mmf. Mica		B-131181	Dial Background
40	G10-131502	Cond. 280 Mmf. Mica		W-131179	Idler Pulley Bklt. (Single)
41	W-49489	Cond. .01 Mf. 400 V. Paper		W-131183A	Dial Pointer Guide Rod
42	W-131118	Cond. .02 Mf. 400 V. Paper		W-131184	Pointer Rod Spring
43	G19-34006	Cond. 100 Mmf. Mica		MG15-131131	Drive Shaft & Flywheel Assy.
44A	W-130246	Cond. 15 Mf. Elect.		G45-41582	Drive Cord
44B		Cond. 15 Mf. Elect.		G46-41582	Guide Cord
44C		Cond. 15 Mf. Elect.		W-131154	Retaining Spring—Idler
45	W-49489	Cond. .01 Mf. 400 V. Paper		W-131247	Rubber Tubing
46	G19-34006	Cond. 100 Mmf. Mica		—131296	Screw 6x3/4—Cab. Mtg.
47	W-130922-A	Cond. .008 Mf. 400 V. Paper		—131286	Screw 6x3/8—Cab. Mtg.
48	W-131115-A	Cond. .01 Mf. 400 V. Paper		B-131121	Dial Glass (Face)
49	G24-34006	Cond. 250 Mmf. Mica		W-131290	Spring—Guide Cord Tension
50	W-131117	Cond. .004 Mf. 400 V. Paper		W-131291-A	Spring—Drive Cord Tension
51	W-131118	Cond. .02 Mf. 400 V. Paper		W-131465-A	Idler Pulley
52	W-131117	Cond. .004 Mf. 400 V. Paper		W-131465-B	Idler Pulley
53	W-131117	Cond. .004 Mf. 400 V. Paper		W-131196	Spring Washer—Trimmer Screw
54	G25-34006	Cond. 10 Mmf. Mica		W-130962	Chassis End Plate
55	W-131118	Cond. .02 Mf. 400 V. Paper		W-136980	Tube Clamp
56				W-49176	Cond. Clamp—Elect.

# MODEL 43 BT



**MODEL -- 43**  
**455 KC. I. F.**

## PARTS LIST

Diagram Part No.	DESCRIPTION	Diagram Part No.	DESCRIPTION	Diagram Part No.	DESCRIPTION
1	130340 Power Cord & Plug (dual resistance in cord)	25	37631 Resistor 32 Ohm 1/4 W.	G11-41582	Drive Cord (15")
2	131124 A & B Bat. Cable complete	26	35930 Resistor 20000 Ohm 1/4 W.	51752	Spring—Drive Cord Tension
	131380 Plug—Battery Cable	27	35928 Resistor 60000 Ohm 1/4 W.	130393	Trimount Stud—Dial Face Mtg.
3	G5-130368 Loop Antenna Assy.	28	35927 Resistor 2 Megohm 1/4 W.	49674	Socket—8 Prong Tube
4	G240-32002 Oscillator Coil	29	36888 Resistor 3 Megohm 1/4 W.	49693	Socket Insulator
5	G244-32004 1st I-F, Trans. Assy.	30	190073 Resistor 140 Ohm 2W.	130389	Socket—Sp'kr Plug
6	G248-32004 2nd I-F, Trans. Assy.	31	35928 Resistor 60000 Ohm 1/4 W.	49665	Bearing—Drive Shaft
7		32	48693 Resistor 11 Megohm 1/4 W.	130928	Cond.—2nd I-F Trimmer
8	G5-34002 Cond. 50 MMF.—Mica	33	38918 Resistor 600 Ohm 1/4 W.	131107	BT—Cabinet
9	49787 Cond.—Variable Tuning	34	38918 Resistor 600 Ohm 1/4 W.	130376	Cloth—Pol. & Protector
10	G6-34002 Cond. 25 MMF.—Mica	35	130374 Resistor 1600 Ohm 1/4 W.	131108	Crtn.—BT Cabt. Shipping
11	45780 Cond. .02 MF.—160V. Tub.	36	35802 Resistor 1 Megohm 1/4 W.	130313	Knob—Vol. Control
12	50105 Cond. .1 MF.—160V. Tub.	37	42401 Resistor 2 Megohm 1/4 W.	130540	Knob—Batt. A.C. Sw. & Tuning
13	45780 Cond. .02 MF.—160V. Tub.	38	21452 Resistor .1100 Ohm 3/4 W.	41742	Spring—Knob Insert
14	50105 Cond. .1 MF.—160V. Tub.	39		48720	"Off" Indicator Tack.
15	45782 Cond. .05 MF.—120V. Tubular (A.C.)	40		130508	Escutcheon & Lens—Dial
16	G2-34002 Cond. 100 MMF.—Mica	41		130430	A.C.—D.C.—Battery Decal.
17	49995 Cond.—Dual Electrolytic Section A—45 MF.—120V. Section B—30 MF.—100V.	42		131126	CR61—"A & B" Bat. Pack
		43	G2-130446 Speaker	45020	Flat Washer—Chassis Mtg.
18	50084 Cond. .003 MF.—160V. Tub.	44	130075 Switch—AC-DC/Battery	130490	Screw—Chassis Mtg.
19	50084 Cond. .003 MF.—160V. Tub.	45	49974 Vol. Control & On-Off Sw.	131395	Output Transform.—Spkr. V.C. & Cone Assy.—Spkr. (not replaceable)
20	G1-34002 Cond. 250 MMF.—Mica	46	46447 Shield—IN5GT Tube	46905	Tip Spkr. Cable (small)
21	130404 Cond. 200 MF.—8 1/2 V. Elec.	47	130400 Dial Face	130076	Tip Spkr. Cable (large)
22	130462 Cond. .002 MF.—160V. Tub.	48	130445 Bracket—Dial Mounting		
23		49	49780 Pointer—Dial Hand		
24		50	49975 Drive Shaft		
		51	28032 Spring—Shaft Retaining		

## ALIGNMENT PROCEDURE

SIGNAL GENERATOR		Volume Control on full		Output meter connected to Plate and Screen of 1T5GT	
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Grid 1A7GT	.02 MF	Fully open	2nd I-F (1) located on front chassis flange	Adjust for maximum signal.
455 Kc	Grid 1A7GT	.02 MF	Fully open	1st I-F (2)	Adjust for maximum signal. Located top of 1st I-F ass'y.
1650	Ant. Lead	.0001 MF	Approx. 140	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	on dial	"ANT" shunt on loop ant.	Adjust for maximum output.

Repeat above for more accurate adjustments  
 Maximum power output @ 75 V. "B" — approx. 200 M. W.  
 Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 60 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ 90 V., 12 M. A.  
 Power consumption @ 117.5 volts line—30 Watts

# EXPORT DIVISION — EXPORT MODEL 44-BU

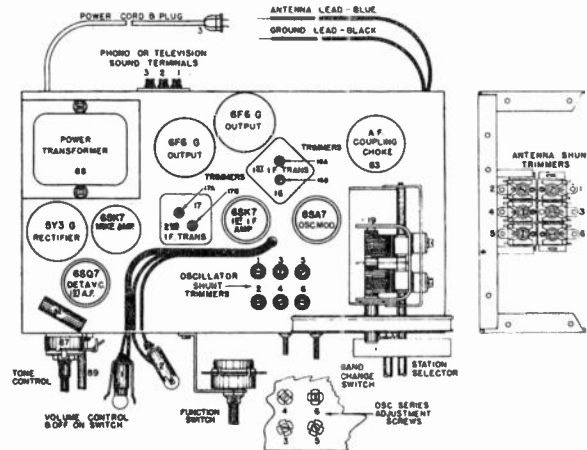
## ALIGNMENT PROCEDURE — MODEL 44-BU

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Plate of 6F6G's
Generator Ground Connections . . . . .	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output . . . . .	See Chart Below
Position of Volume Control . . . . .	Fully On
Position of Tone Control . . . . .	To Treble or Speech
Mike Control . . . . .	All the way OFF
Functional Control Switch . . . . .	Radio

### ALIGNMENT PROCEDURE CHART

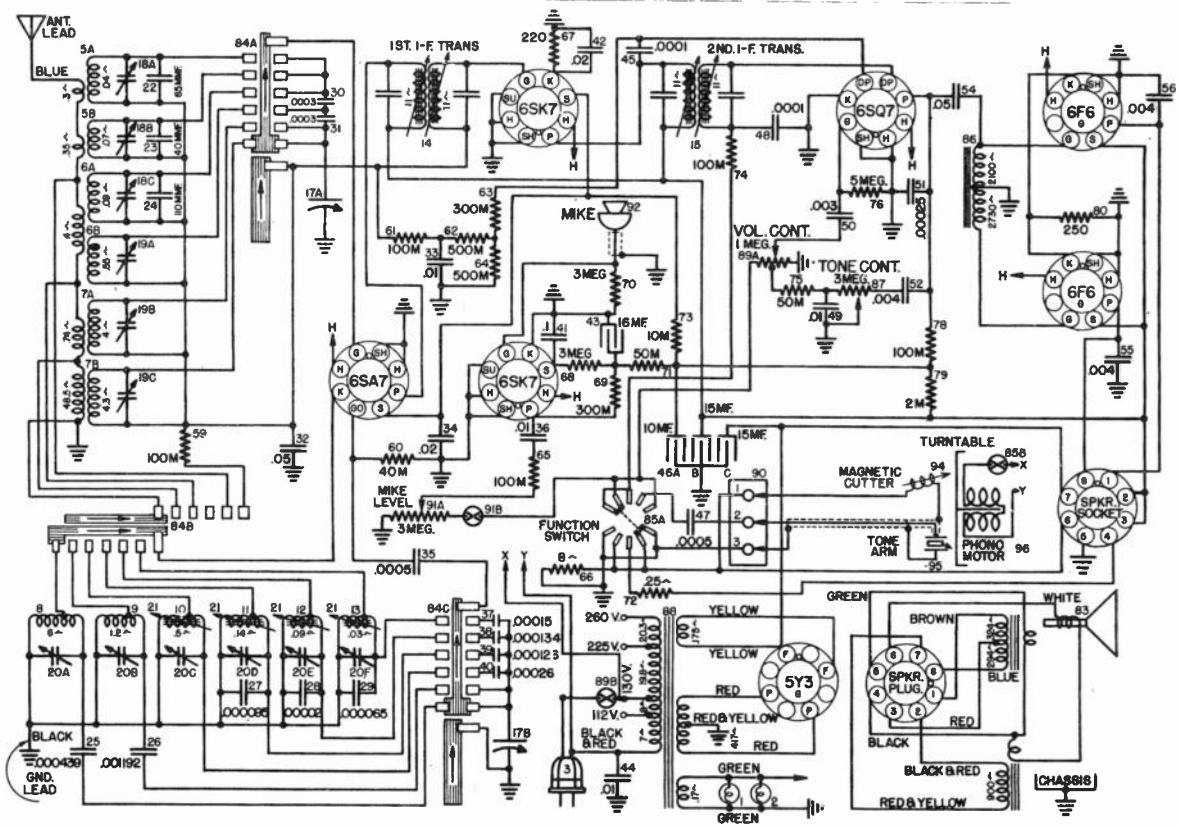
Step	Dummy Antenna	Signal Generator Frequency Setting	Generator Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	200 Mmf.	456 Mc.	Antenna	Band No. 1	Fully open	14A, 14B, and 15A, 15B, 1st and 2nd I-F asm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Antenna	Band No. 1	Fully open	No. 1 oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Antenna	Band No. 1	Approx. 1400 on dial	No. 1 Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Antenna	Band No. 2	Fully open	No. 2 Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Antenna	Band No. 2	Approx. 4.5 90 Meter band	No. 2 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Antenna	Band No. 3	Fully open	No. 3 Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Antenna	Band No. 3	Closed	No. 3 Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Antenna	Band No. 3	Approx. 9.0 60 Meter band	No. 3 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Antenna	Band No. 4	Fully closed	No. 4 Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Antenna	Band No. 4	Closed	No. 4 Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Antenna	Band No. 4	Approx. 11.0 31 Meter Band	No. 4 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Antenna	Band No. 5	Fully open	No. 5 Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Antenna	Band No. 5	Closed	No. 5 Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Antenna	Band No. 6	Fully open	No. 6 Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Antenna	Band No. 6	Closed	No. 6 Oscillator series	Adjust for maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Antenna	Band No. 6	Approx. 22 16 Meter band	No. 6 Antenna shunt	Adjust for maximum output while rocking gang thru signal.



SOCKET VOLTAGES — MODEL 44-BU

All voltages measured from socket contact to chassis using a 1000 ohm/volt D.C. voltmeter, except heaters.

TUBES	FUNCTION	SOCKET CONTACT							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1-6SA7	Oscillator-Mixer	GND.	GND.	230	103	—	0	6.3	—
1-6SK7	I-F Amplifier	GND.	GND.	GND.	0	2.3	103	6.3	230
1-6SQ7	Det. A.V.C.-1st A-F Amp.	GND.	0	GND.	0	0	92	6.3	GND.
1-6SK7	Mike Pre-Amp.	GND.	GND.	GND.	0	—	—	6.3	—
2-6F6G	Output (push pull)	GND.	GND.	221	230	—	J.B.	6.3	15
1-5Y3G	Rectifier	N.C.	312 D.C.	J.B.	335 A.C.	N.C.	335 A.C.	N.C.	312 D.C.
			4.5						4.5

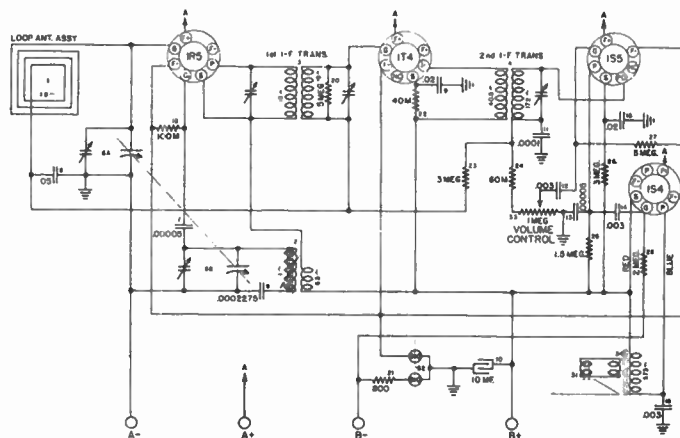
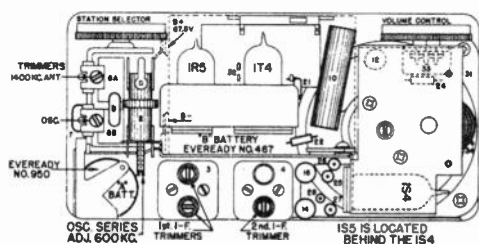


Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Bulb-Dial Light	66	W-41258	Res. 8 Ohm 1 W. Flex.
2	W-43567	Bulb-Dial Light	67	-38977	Res. 220 Ohm 1/2 W. WW Ins.
3	B-45769-A	Cable & Plug (Power)	68	-36588	Res. 3 Meg. Ohm 1/2 W. Ins.
4			69	-35601	Res. 300 M Ohm 1/2 W. Ins.
5A	G229-32000	Coil 16-13 M Ant.	70	-36588	Res. 3 Meg. Ohm 1/2 W. Ins.
5B	G229-32000	Coil 25-19 M Ant.	71	W-40757	Res. 50 M Ohm 1/2 W. Ins.
6A		Coil 31 M Ant.	72	W-12410	Res. 3 Ohm 1 W.
6B		Coil 60-49 M Ant.	73	-47100	Res. 10 M Ohm 2 W. WW Ins.
7A	G230-32000	Coil 90 M Ant.	74	-35600	Res. 100 M Ohm 1/2 W. Ins.
7B		Coil B.C. Ant.	75	-40757	Res. 50 M Ohm 1/2 W. Ins.
8	G246-32002	Coil B.C. Osc.	76	-47131	Res. 5 Meg. Ohm 1/2 W. Ins.
9	G246-32002	Coil 90 M Osc.	77	-35600	Res. 100 M Ohm 1/2 W. Ins.
10	G246-32002	Coil 60-49 M Osc.	78	W-28013	Res. 2 M Ohm 1/2 W. Flex.
11	G246-32002	Coil 31 M Osc.	79	-49703	Res. 250 Ohm 2 W. Ins.
12	G247-32002	Coil 25-19 M Osc.	80		
13	G245-32002	Coil 16-13 M Osc.	81		
14	G253-32004	1st I-F Trans.	82		
15	G254-32004	2nd I-F Trans.	83		
16	-131197	Iron Core (I-F Adj.)	84A	G7-130145	Speaker-8 inch
17A	-131164-B	Var. Cond. Ant. Sect.	84B	-131145	Output Transformer
17B			84C		Switch, Band Change
18A	-131129	Var. Cond. Osc. Sect.	84D		Switch, Band Change
18B		Cond. Trim. 16-13 M Ant.	85A	-131225	Switch, Band Change
18C		Cond. Trim. 25-19 M Ant.	85B		Switch, Function
18D		Cond. Trim. 31 M Ant.	85C	G2-120432A	Switch, Phono Motor
19A	-131129	Cond. Trim. 60-49 M Ant.	87		A-F Coupling Choke
19B		Cond. Trim. 90 M Ant.	88	-131147	Tone Control, 3 Meg.
19C		Cond. Trim. B.C. Ant.	89A	-130515	Transformer (Power)
20A	MG23-131181	Cond. Trim. B.C. Osc.	89B	-131146	Vol. Control 1 Meg. Ohm
20B		Cond. Trim. 90 M Osc.	89C		Switch (Power Trans.)
20C		Cond. Trim. 60-49 M Osc.	90	G50-26719	Terminal Board, Phono
20D		Cond. Trim. 31 M Osc.	91A	-130679	Mike Level Control
20E		Cond. Trim. 25-19 M Osc.	91B		Switch (Microphone)
20F		Cond. Trim. 16-13 M Osc.	92B	-131202	Microphone complete
21	W-131197	Iron Core (4) Osc. Coils	93		
22	G3-131502	Cond. 65 Mmf. Mica	94	-130748	Magnetic Cutter
23	G2-131502	Cond. 40 Mmf. Mica	95	-130707	Tone Arm
24	G6-131502	Cond. 110 Mmf. Mica	96	-131560	Phono Motor-50 cycle-115 V.
25	G12-131502	Cond. 459 Mmf. Mica		-131290	Mike Socket Shell
26	G1-131501	Cond. 1192 Mmf. Mica		G308-34403	Mike Socket Bracket
27	G13-131502	Cond. 95 Mmf. Mica		G11-44637	Shielded Lead (Mike)
28	G1-131502	Cond. 20 Mmf. Mica		G28-43564	Light Socket Assy.-Dial
29	G8-131502	Cond. 65 Mmf. Mica		MG15-131131	Pulley & Hub Assy.
30	G11-131502	Cond. 300 Mmf. Mica		W-130962	Drive Shaft Assy.
31	G11-131502	Cond. 300 Mmf. Mica		W-42911	Chassis End Plate
32	W-130922-A	Cond. .05 Mf. 400 V. Paper		W-45056	Cabinet Protector
33	W-49489	Cond. .01 Mf. 400 V. Paper		W-45590-A	Grommet (Chassis)
34	W-131118	Cond. .02 Mf. 400 V. Paper		-49796	Grommet (Speaker)
35	G5-131502	Cond. 50 Mmf. Mica		W-5209	Headed Bushing (Speaker)
36	W-49489	Cond. .01 Mf. 400 V. Paper		-131189	Flat Washer (Speaker)
37	G9-131502	Cond. 150 Mmf. Mica		-131190	Knob-B.C. & Function Switch
38	G8-131502	Cond. 134 Mmf. Mica		-49298	Knob-Tone-Vol.-Tuning
39	G7-131502	Cond. 126 Mmf. Mica		MG10-131251	Knob-level Con.
40	G10-131502	Cond. 280 Mmf. Mica		G4-130800	Recorder Assy.-50 cycle-110 V.
41	W-131278	Cond. .1 Mf. 400 V. Paper		MG28-131132	Recorder Assy.-50 cycle-110 V.
42	W-131118	Cond. .02 Mf. 400 V. Paper		MG27-131251	Cutting Needle
43	W-130922-A	Cond. 16 Mf. 250 V. Elect.		G4-130800	Records-Blank (6 inch)
44	W-49489	Cond. .01 Mf. 400 V. Paper		MG28-131132	Counter Assy.
45	G19-34005	Cond. 100 Mmf. Mica		MG27-131251	Dial Sack Assy.
46A	W-49778-B	Cond. 15 Mf. Elect.		MG30-131132	Riv. Idler Brkt.
46B		Cond. 15 Mf. Elect.		W-131134	Drive Springs
46C		Cond. 15 Mf. Elect.		G47-41559	Drive Cord
47	G5-131502	Cond. 50 Mmf. Mica		W-47791	Needle Cup
48	G19-34005	Cond. 100 Mmf. Mica		W-47790	Needle Cup Lid
49	W-131118-A	Cond. .01 Mf. 400 V. Paper		W-47789	Needles (pkg. 10)
50	W-130922-A	Cond. .05 Mf. 400 V. Paper		-130460	Cab. Protector Cloth
51	G24-34005	Cond. 250 Mmf. Mica		W-49674	Tube Socket-8 Prong
52	W-131117	Cond. .004 Mf. 400 V. Paper		-131154	Retaining Spring (Drive Shaft)
53				-5634	Spring Washer (Drive Shaft)
54	W-130922-A	Cond. .05 Mf. 400 V. Paper		-131481	Idler Pulley
55	W-131117	Cond. .004 Mf. 400 V. Paper		G2-130800	Recordo Blanks (5 8 inch)
56	W-131117	Cond. .004 Mf. 400 V. Paper		G3-130800	Recordo Blanks (5 10 inch)
57				-131181	Dial Background or Diffuser
58				-131121	Dial Glass
59	-35600	Res. 100 M Ohm 1/2 W. Ins.		-131184	Pointer Rod Assy.
60	-38761	Res. 40 M Ohm 1/2 W. Ins.		-131183	Pulley Shaft
61	-35600	Res. 100 M Ohm 1/2 W. Ins.		-131186	Pulley Stud
62	-36332	Res. 500 M Ohm 1/2 W. Ins.		-131154	Retaining Spring (Pulley Shaft)
63	-35601	Res. 300 M Ohm 1/2 W. Ins.		-47961	Tube Shield Base
64	-38322	Res. 800 M Ohm 1/2 W. Ins.		-130694	Tube Socket Cover
65	-35600	Res. 100 M Ohm 1/2 W. Ins.		-49176	Clamp-Cond. Mtg.
				-131148	Brkt. T.C. Mtg.

# "COMMUTER" MODEL 45 BY

## ALIGNMENT PROCEDURE—MODEL 45

## WIRING DIAGRAM



Step	Signal Generator Dummy Antenna	Generator Frequency Setting	Input to Receiver	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02	455 Kc.	Stator of top section of gang	Fully open	2nd I-F(2) 1st I-F(2)	Adjust for maximum output. Adjust for maximum output.
2.	None	1620 Kc.	Signal radiated by loop on generator	Fully open	"OSC" Trimmer	Adjust for peak gang; does not have to tune through signal.
3.	None	1400 Kc.	"	Approx. 140 on dial knob	"ANT" Trimmer	Adjust for maximum output.
4.	None	600 Kc.	"	Approx. 60 on dial knob	Iron core in osc coil	Adjust for maximum output while rocking gang through signal.
5.	REPEAT THE ABOVE ALIGNMENT PROCEDURE TO INSURE ACCURATE ADJUSTMENTS.					

### PARTS LIST — MODEL 45

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	MG17—131276	Loop Ant. and Front Cover Assy.	27	—47131	Resistor 5 Megohm ¼ W.
2	—131375	Loop Connector Springs (2 req.)	28	—35927	Resistor 2 Megohm ¼ W.
	G250—32002	Oscillator Coil—Coil only	29	NONE	
	—49859	Iron Core—Osc. Coil	30	NONE	
	—131419	Spring—Iron Core Retainer	31	—131342	Speaker
3	G255—32004	1st I-F Assm. 455 Kc.		—131406	Gasket—Spkr. Mtg.
4	G256—32004	2nd I-F Assm. 455 Kc.	32	—131264	Switch—Off-On
5	—45817	Condenser .05 Mf.—160 V.		—131281	Insulator—On-Off Switch
6	—131343	Condenser 2 Sect. Tuning Gang	33	—131345	Volume Control—1 Meg.
7	G5—34002	Condenser 50 Mmf.—Mica	34	—131369	Output Transformer
8	G22—34002	Condenser 2275 Mmf.—Mica		MG6—131275	Yellow "B" Lead and Fastener Assm.
9	—45780	Condenser .02 Mf.—160 V.		—131351	Fastener—"B" Minus
10	—131338	Condenser 10 Mf.—65 V.		MG7—131275	Red "B" Lead and Fastener Assm.
11	G2—34002	Condenser 100 Mmf.—Mica		—131352	Fastener—"B" Positive
12	—50084	Condenser .003 Mf.—160 V.		—131371	"A" Battery Hinge Contact
13	G5—34002	Condenser 50 Mmf.—Mica		—131346	Socket—Prong Shield
14	—50084	Condenser .003 Mf.—160 V.		—131369	Spring—Socket Mounting
15	—45780	Condenser .02 Mf.—160 V.		—131347	Socket—No Shield
16	—50084	Condenser .003 Mf.—160 V.		MG17—131276	Front Cover and Loop Assy.
17	NONE			—131364	Hinge Pins—Front Cover Mtg.
18	NONE			—131365	Catch—Front Cover
19	—35600	Resistor 100,000 Ohm ¼ W.		—131465	Latch—Front Cover
20	—35602	Resistor 1 Megohm ¼ W.		—131382	Front Half of Case
21	—131263	Resistor 800 Ohm ¼ W.		—131383	Rear Half of Case
22	—36761	Resistor 40,000 Ohm ¼ W.		—131357	Insulator—Battery Clip
23	—36688	Resistor 3 Megohm ¼ W.		—131377	Grille Cloth
24	—35928	Resistor 60,000 Ohm ¼ W.		—131413	Handle—Carrying Strap
25	—48622	Resistor 1.5 Megohm ¼ W.		M—30	Rivet—Handle Mounting
26	—36688	Resistor 3 Megohm ¼ W.			

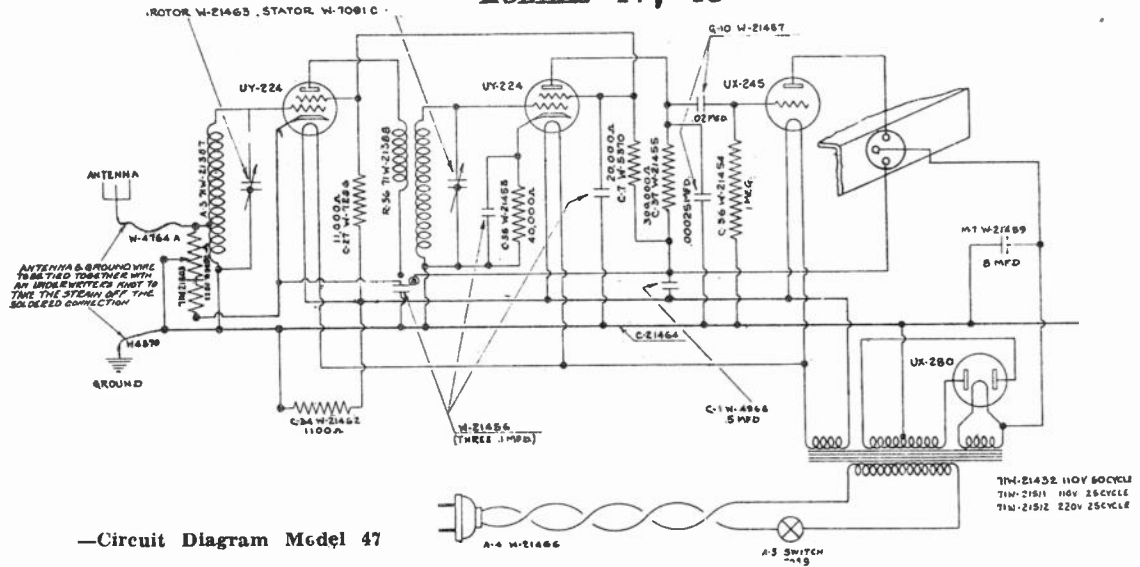
### SOCKET PIN NUMBER

TUBE	FUNCTION	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
1R5	Osc-Mod	Gnd.	51	51	—	—	—	1.3
1T4	I-F Amp.	Gnd.	51	33	—	—	—	1.3
1S5	Det.—A.V.C. 1st A.F.	Gnd.	—	—	5	5	—	1.3
1S4	Pwr. Output	Gnd.	51	*7.9	51	—	—	1.3

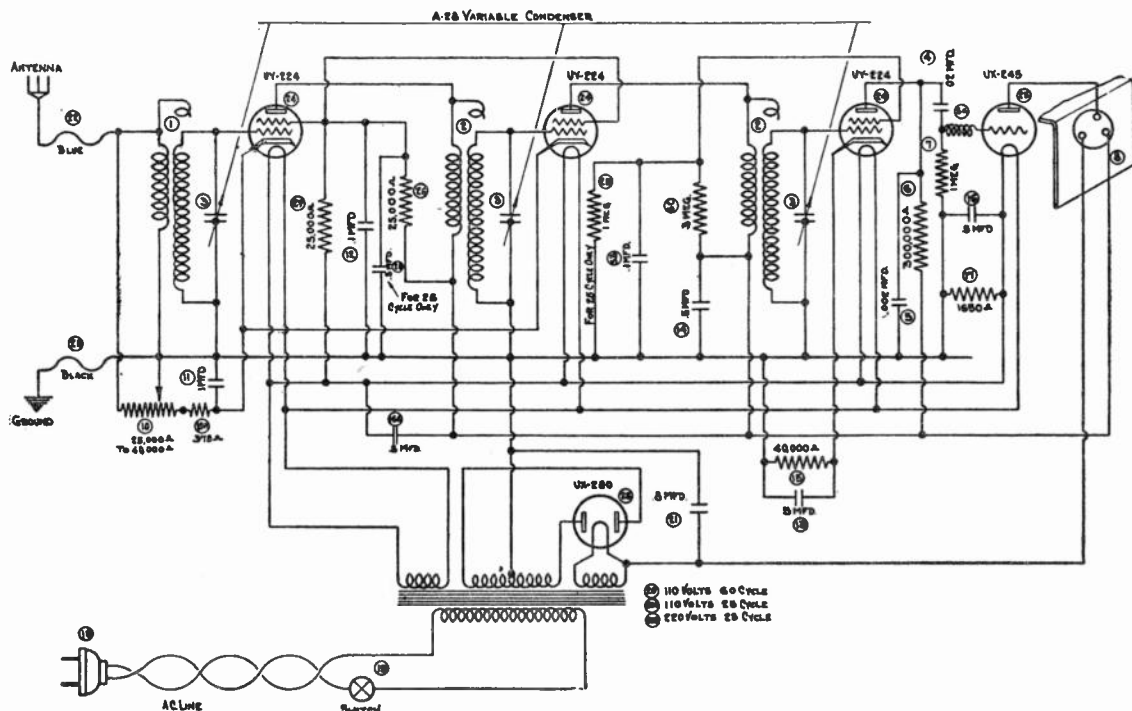
\*Measured across item 21, a 800 ohm resistor.

"A" Battery drain approximately 250 M.A. "B" Battery drain @ 58.9 Volts approximately 9.2 M.A.

# MODELS 47, 48



—Circuit Diagram Model 47



—Circuit Diagram Model 48

## Parts List—48 Chassis

Qty.	Part No.	Description	Qty.	Part No.	Description
1	D-22157	Chassis .....	1	W-21456	0.1-0.1-0.1 Mfd. Fixed Con-
1	W-22198	Volume Control .....	2	W-22199	denser .....
1	W-21432	Power Transformer .....	1	W-21455	Resistor 25,000 ohm .....
1	W-21450	Mershon Condenser (8 mfd.) .....	1	W-21455	Resistor 300,000 ohm .....
1	W-21485	Mershon Condenser Socket .....	1	W-4794	Stiffened Sleeving (1 1/2") ...
1	W-22201	Tube Shield .....	1	W-22173	Mounting Plate .....
1	W-22178	Tube Shield (Removable) ...	1	W-22210	R. F. Transformer (ant.) ...
1	C-22139	Variable Condenser Assembly .....	2	W-22218	R. F. Transformer .....
2	W-7871	Sockets (4 prong) .....	3	W-21987	R. F. Coll Shields .....
3	W-7873	Sockets (5 prong) .....	1	W-22220	Shield (bent) .....
1	W-21207	Socket Guide (280) .....	1	W-22217	Shield (straight) .....
4	W-7874	Socket Guide .....	1	W-22174	Power Switch .....
2	W-22182	Screen Grid Connectors ...	1	W-4313	0.5 mfd. Fixed Condenser ...
1	W-22200	Screen Grid Connector .....	1	W-22180	Flexible Resistor (1650 ohms)
<b>PARTS UNDER CHASSIS</b>					
1	W-4362	Plate Choke .....	1	W-6428	0.5-0.5 mfd. Fixed Condenser
1	W-4313	0.5 Mfd. Fixed Condenser ...	1	W-20284	Terminal (A. & G.) .....
1	W-21453	Resistor 40,000 ohm .....	1	W-21466	Cable .....
1	W-21454	Resistor 1 megohm .....	1	W-21965	Flexible Resistor (375 ohms)
1	W-22244	.02 & .002 Mfd. Twin Fixed .....	1	W-21577	(in Vol Cont. lead under R.
1	W-21518	Condenser .....	1	W-20578	F. colls) .....
1	W-22215	Speaker Terminal .....	1	W-4018D	Repwood Cabinet "P"(Wig-
		Resistor 3 megohm .....	1	W-2244A	it) .....
			1	W-21820	Coat of Arms Crest .....
			2		Knobs (Walnut finish) .....
			1		Knob (Walnut finish) .....
			1		Speaker Model 280 .....

# MODEL 48BF, 48CB

## RADIO RECEIVER ALIGNMENT PROCEDURE

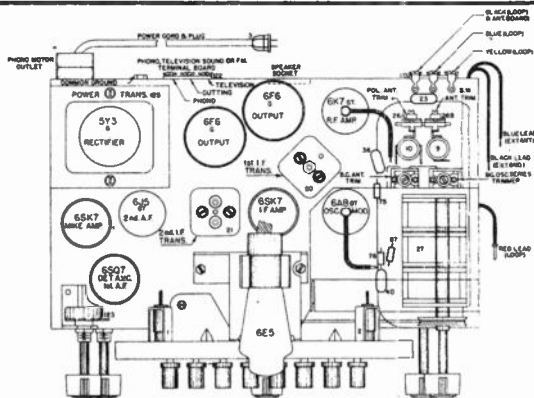
### Preliminary

Output Meter Connections.....Plate to Plate of 6F6G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Function Switch.....Radio  
 Position of Mike Level Control.....All the Way to Left (Off)

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output; do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



TUBE	FUNCTION	SOCKET PIN NUMBER							
		1	2	3	4	5	6	7	8
6K7GT	R-F Amp.	.....	.....	195	78.6	.....	2.0	*6.3	2.0
6A8GT	Osc.-Mod.	.....	.....	195	78.6	.....	136	*6.3	1.0
6SK7	I-F Amp.	.....	.....	.....	.....	5.5 B.C. 2.6 S.W.	78.6	*6.3	234
6SQ7	Det. A.V.C. 1st A-F	.....	.....	.....	.....	.....	110	*6.3	.....
6J5GT	Phase Invert	.....	.....	118	195	.....	110	*6.3	4.5
6F6G	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6F6G	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6SK7	Mike Amp.	.....	.....	.....	.....	.....	.....	*6.3	POS.
5Y3G	Rectifier	.....	305 D.C.	.....	*325	.....	*325	.....	305 D.C.
6E5	Indicator	.....	.....	.....	225	.....	*6.3	.....	.....

\*Measured with A.C. volt meter

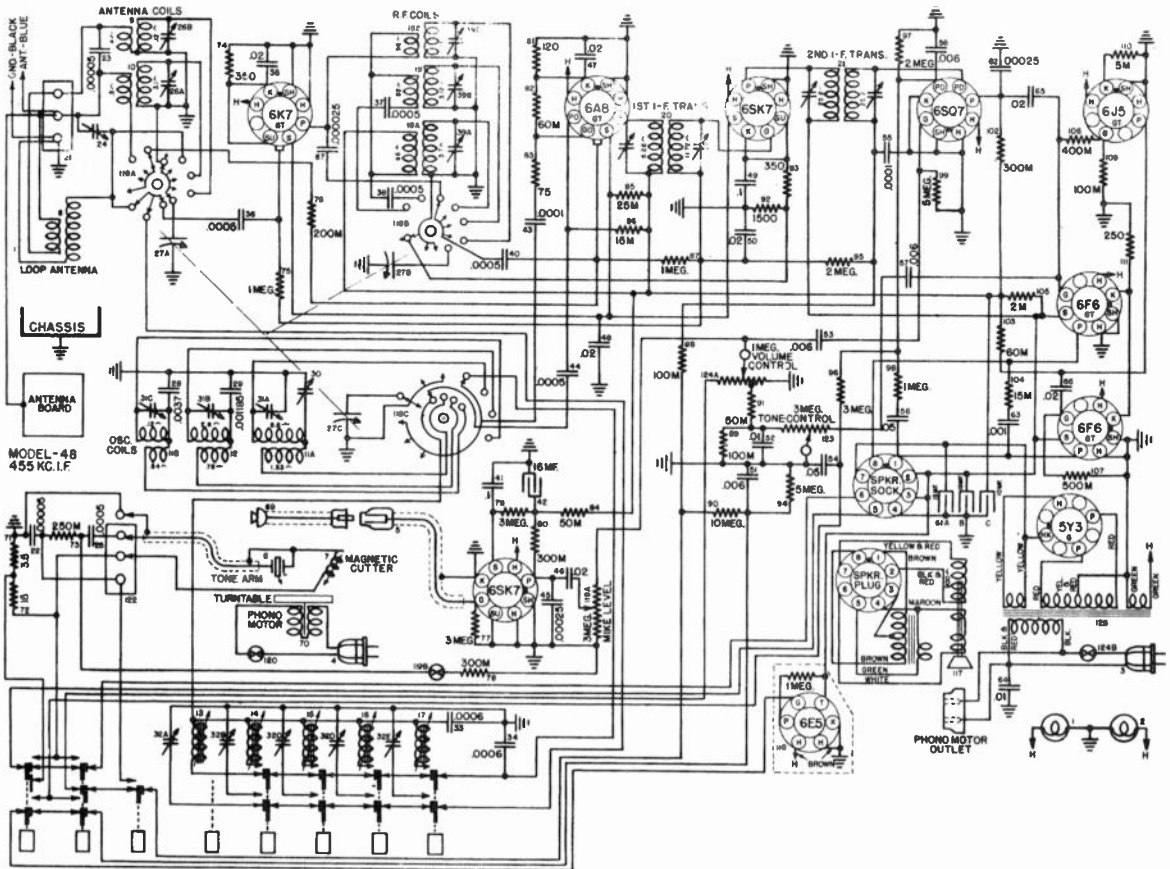
VOLTAGE DROP ACROSS SPEAKER FIELD=77 VOLTS

MAXIMUM POWER OUTPUT @ 130 V. Line=7.5 Watts

POWER CONSUMPTION @ 117.5 V. Line=Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS

Voltagcs may vary 10% of values given.





MODEL-48  
455 KC.I.F.

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43587	Bulb, Dial Light	54	45917-A	Cond. .05 Mf. 160 V. Paper	114		
2	43587	Bulb, Dial Light	55	G2-34002	Cond. 100 Mmf. Mica	115		
3	45769-A	Cable & Power Plug	56	32780-B	Cond. .05 Mf. 400 V. Paper	116	130815	Socket, Cable Magic Eye
4	130857	Motor	57	43010-B	Cond. .008 Mf. 160 V. Pap.	117	G2-130728	Speaker & Plug
5	G294-34003	Cable & Socket (Mike)	58	34713	Cond. .006 Mf. 160 V. Pap.		47219	Spkr. Headed Bushing 4
6	130857	Cutter, Magnetic	60				37953	Spkr. Mtg. Flat Wash. 4
7	130854	Loop Ant.	61A	130246	Cond. 15 Mf. 450 V. Elect.		N-8	Spkr. Mtg. Nut--
8	G2-130234	Coil H. F. Ant.	61B		Cond. 15 Mf. 450 V. Elect.		49219	Spkr. Mtg. Brkt., 4
9	G225-32000	Coil Pol. Ant.	61C		Cond. 10 Mf. 250 V. Elect.		42814	Spkr. Mtg. Brkt.
10	G241-32002	Coil B.C. Osc.	62	G1-34002	Cond. 250 Mmf. Mica		Screws, 9	
11B	G241-32002	Coil H.F. Osc.	63	30270	Cond. .01 Mf. 400 V. Paper		N-5096	Spkr. Mtg. Brkt., Nut 4
12	G242-32002	Coil Pol. Osc.	64	30825	Cond. .01 Mf. 400 V. Paper		130359	Spkr. Mtg. Brkt., Nut 4
13	G234-32002	Coil F.B. Osc. 540-940 Kc.	65	30488	Cond. .02 Mf. 400 V. Paper		4	Flat Washer, 4
14	G235-32002	Coil F.B. Osc. 600-1950 Kc.	66	30438	Cond. .02 Mf. 400 V. Paper		118A	Switch, Band Change
15	G237-32002	Coil F.B. Osc. 740-1300 Kc.	67	G2-34002	Cond. 25 Mmf. Mica		118B	Switch, Band Change
16	G238-32002	Coil F.B. Osc. 880-1500 Kc.	68				118C	Switch, Band Change
17	G239-32002	Coil F.B. Osc. 1000-1600 Kc.	69	130764	Microphone (Crystal)		119A	Switch, Mike Level
18A	G114-32001	Coil E.C. R.F.	70	13970	Motor, Phono 65-110 V.		119B	Switch, Mike Level
18B	G114-32001	Coil H.F. R.F.	71	130554	Res. 3.5 Ohm 1/2 W. Ins.		120	Switch, Phono Motor
19	G115-32001	Coil Pol. R.F.	72	130655	Res. 15 Ohm 1/2 W. Ins.		121	Terminal Board, Loop
20	G248-32004	1st I-F Trans.	73	32876	Hex. 250,000 Ohm 1/2 W. Ins.		122	G50-26719
21	G240-32004	2nd I-F Trans.	74	32916	Res. 350 Ohm 1/2 W. Ins.		123	130741-A
22	G5-34002	Cond. 50 Mmf. Mica	75	35822	Res. 1 Meg. 1/2 W. Ins.		124	47783-A
23	G5-34002	Cond. 50 Mmf. Mica	76	35390	Res. 200,000 Ohm 1/2 W. Ins.		125	130784
24	49932	Cond. Trimmer	77	36888	Res. 3 Meg. 1/2 W. Ins.		126	130783
25	G3-34002	Cond. 500 Mmf. Mica	78	35801	Res. 300,000 Ohm 1/2 W. Ins.		130784-A	Transformer (Power)
26A	37986-A	Cond. Pol. Ant. Trimmer	79	35601	Res. 3 Meg. 1/2 W. Ins.		130785	Escutcheon, Magic Eye, 1
27A	49928	Var. Cond. Ant. Sect.	80	130311	Res. 300,000 Ohm 1/2 W. Ins.		130824-A	Escutcheon & Dial, 1
27B		Var. Cond. R.F. Sect.	81	130311	Res. 120 Ohm 1/2 W. Ins.		130518	Escutcheon Mtg. Screws, 8
28	G17-34005	Cond. 8700 Mmf. Mica	82	35928	Res. 60,000 Ohm 1/2 W. Ins.		130772	Dial & Tube, 8
29	G14-34005	Cond. 1185 Mmf. Mica	83	47699	Res. 75 Ohm 1/2 W. Ins.		130772	Escutcheon Mtg. Screws, 1
30	130108	Cond. B.C. Osc. Ser. Trim.	84	40757	Res. 50,000 Ohm 1/2 W. Ins.		130767	Escutcheon Push But., 1
31A	35951-A	Cond. Pol. Osc. Trimmer	85	130318	Res. 25,000 Ohm 1/2 W. Ins.		130524	Escutcheon Push Button
31B		Cond. Pol. Osc. Trimmer	86	47819	Res. 1500 Ohm 1/2 W. Ins.		130160-A	Push Button, 8
31C		Cond. H.F. Osc. Trimmer	87	35822	Res. 1 Meg. 1/2 W. Ins.		131556	Push Button Switch, 1
32A	49983	Cond. F.B. Trim.	88	35600	Res. 100,000 Ohm 1/2 W. Ins.		42911	Protector, Cabinet, 1
32B	49934	Cond. F.B. Trim.	89	35600	Res. 100,000 Ohm 1/2 W. Ins.		130460	Protector, Cab. Cloth, 1
32C	49936	Cond. P.B. Trim.	90	50956	Res. 10 Meg. 1/2 W. Ins.		130424	Chassis Mtg. Strap (RH) (1)
32D	49937	Cond. P.B. Trim.	91	40757	Res. 60,000 Ohm 1/2 W. Ins.		130427	Chassis Mtg. Strap (LH) (1)
32E	49938	Cond. P.B. Trim.	92	130488	Res. 1500 Ohm 1/2 W. Ins.		45580-A	Chassis Grommet, Rubber (6)
33	G21-34002	Cond. 600 Mmf. Mica	93	38916	Res. 350 Ohm 1/2 W. Ins.		130425	Chassis Mtg. Brkt. (2)
34	G21-34002	Cond. 600 Mmf. Mica	94	47131	Res. 5 Meg. 1/2 W. Ins.		131512	Chassis Header, Bush. (6)
35	45780-B	Cond. .02 Mf. 160 V. Paper	95	35927	Res. 2 Meg. 1/2 W. Ins.		43885	Chassis Mtg. Screw, 3
36	G3-34002	Cond. 500 Mmf. Mica	96	35688	Res. 3 Meg. 1/2 W. Ins.		130992	Chassis End Flat (LH), 1
37	G3-34002	Cond. 500 Mmf. Mica	97	35327	Res. 2 Meg. 1/2 W. Ins.		130991	Chassis End Plate (RH), 1
38	G3-34002	Cond. 500 Mmf. Mica	98	35822	Res. 1 Meg. 1/2 W. Ins.		130197	Knob (5)
39A	35861-A	Cond. B.C. R.F. Trimmer	99	47131	Res. 5 Meg. 1/2 W. Ins.		49059	Iron Core, 5
39B		Cond. Pol. R.F. Trimmer	100				130361-A	Clamp, Cr. Idenser, 1
39C		Cond. S.W. R.F. Trimmer	101	35822	Res. 300,000 Ohm 1/2 W. Ins.		49674	Socket, N. Marking, 9
40	G3-34002	Cond. 500 Mmf. Mica	102	35818	Res. 1500 Ohm 1/2 W. Ins.		47367	Light Socket, A-Way
41	22688	Cond. .1 Mf. 400 V. Paper	103	23013	Res. 2000 Ohm 1/4 W. Flex.		130621	Mike Socket
42	48122	Cond. 18 Mf. 260 V. Elect.	104	36321	Res. 60,000 Ohm 1/2 W. Ins.		130591	Mike Socket, 2 1/2"
43	G2-34002	Cond. 100 Mmf. Mica	105	36321	Res. 60,000 Ohm 1/2 W. Ins.		130737	Mike Socket, Con. Brkt
44	G3-34002	Cond. 500 Mmf. Mica	106	36321	Res. 60,000 Ohm 1/2 W. Ins.		130186-B	Call Letter Sheet
45	G-134002	Cond. 250 Mmf. Mica	107	36322	Res. 500,000 Ohm 1/2 W. Flex.		130187	Call Letter Cover
46	45780-B	Cond. .02 Mf. 160 V. Paper	108				47329	Needle Cup Lid, 10"
47	30488	Cond. .02 Mf. 400 V. Paper	109	35600	Res. 100,000 Ohm 1/2 W. Ins.		130801	6 1/2-inch R.
48	30105	Cond. .1 Mf. 160 V. Paper	110	49945	Res. 5000 Ohm 1/2 W. Ins.		47791	Needle Cup, 2
49	45780-B	Cond. .02 Mf. 160 V. Paper	111	49708	Res. 5000 Ohm 1/2 W. Ins.		47790	Needle, Cutting Unit & Bag, 1
50	34713	Cond. .006 Mf. 160 V. Pap.	112				130563-A	Records, 6 1/2-in. & Envrp.
51	130171	Cond. .01 Mf. 100 V. Paper	113				130801	Dial Back Plate
52	34713	Cond. .006 Mf. 160 V. Pap.					130801	Pointer Shaft
53	34713	Cond. .006 Mf. 160 V. Pap.					41582	Drive Cord
							48629	Lock Spring
							130125	Dial Pointer

# MODEL 49-BZ

## ALIGNMENT PROCEDURE

### PRELIMINARY

Output meter connections.....Plate to Screen 6K6GT  
 Generator ground connection.....To chassis or ground lead  
 Dummy antenna to be in series with generator output.....See chart below  
 Position of volume control.....Fully on  
 Position of tone control.....Treble or speech

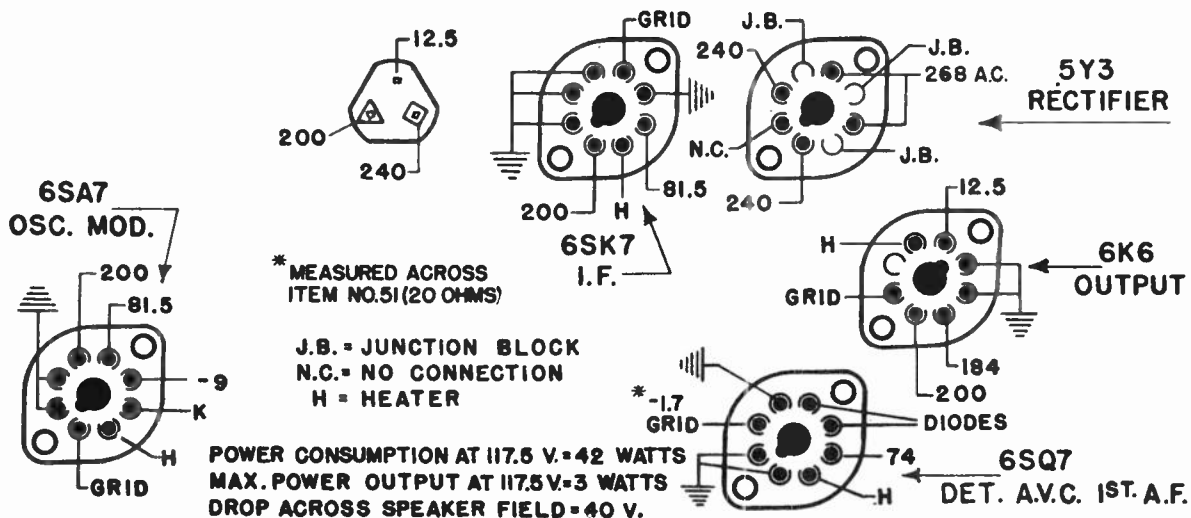
### ALIGNMENT PROCEDURE CHART

Alignment Sequence	Signal Dummy Antenna	Generator Frequency Setting	Input Connection To Receiver	Band Switch	Tuning Cond.	Trimmer Adjusted	Remarks
1	.02 Mf.	455 Mc.	Ant. Lead	B. C.	Fully open	2nd I-F 1st I-F	Adjust for maximum output.
2	400 Ohm Carbon	15.4 Mc.	Ant. Lead	S. W.	Fully open	S. W. "OSC" rear section of gang	Adjust for Peak.
3	400 Ohm Carbon	15.0 Mc.	Ant. Lead	S. W.	Approx. 15 on dial	S. W. Ant.	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1650 Kc.	Ant. Lead	B. C.	Fully open	B. C. "OSC"	Adjust for peak; gang does not have to tune thru signal.
5	.0002 Mf.	1400 Kc.	Ant. Lead	B. C.	Approx. 140 on dial	D. C. Ant.	Adjust for maximum output.
6	.0002 Mf.	2.5 Mc.	Ant. Lead	B. C. and switch on loop to POL.	Approx. 2.5 on dial	POL. Ant. on loop	Adjust for maximum output.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less AS INDICATED ON THE DIAL. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles LOWER ON THE DIAL than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

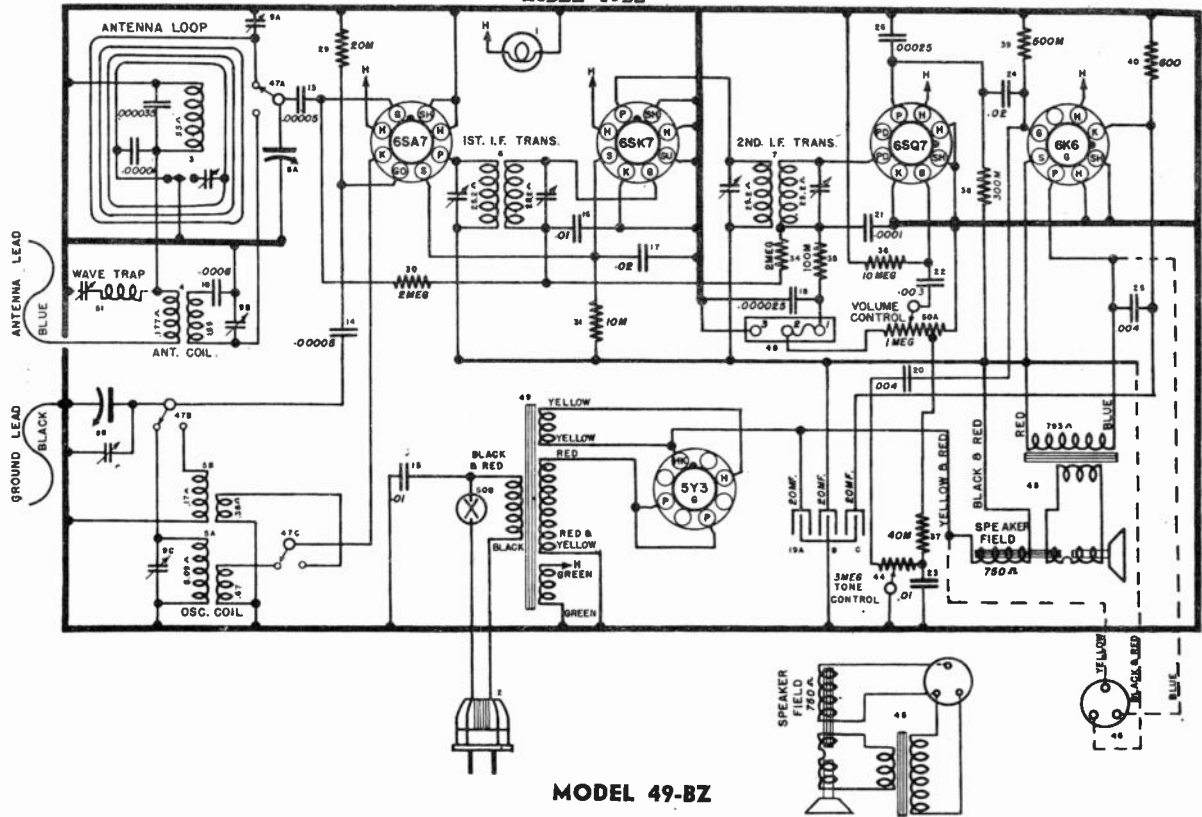
Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. Circuit.



VOLTAGES MEASURED BETWEEN SOCKET PIN & GROUND WITH A 250 VOLT, 1000 OHMS PER VOLT, VOLT METER. READINGS MAY VARY 10%.

### SOCKET VOLTAGE CHART

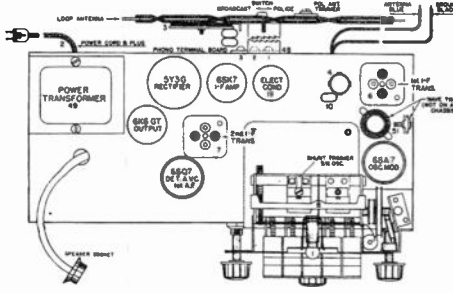
MODEL 49BZ



MODEL 49-BZ

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G9 -43567	Dial Light	G2	-130145	Speaker-8 inch
	-49637	Socket Assy.-Dial Light		-45580	Rubber Grommet-Sprk. Mtg.
	-49637	Socket Assy.-Dial Light		-49796	Headed Bushing-Sprk. Mtg.
2	-46789	Power Cord and Plug		-2309	Flat Washer-Sprk. Mtg. (FS-58)
	-32008	Loop Antenna Assy.	45	-131528	Sprk. Cable and Plug
	-38110	Bracket-Loop Mtg.	46	-49809	Band Change Sw.
	-180084	Thumb Screw-Loop Mtg.	47	-49849	Band Change Sw.
	-37953	Flat Washer-Loop Mtg.	48	G56 -28719	Phono Terminal Board
	-47332	Trimmer Condenser-Ant. Padder		-49831	Jumpers-Strip-Phono Terminals
	-46129	B. C.-Pol. Switch-On Loop	49	-49838	Power Trans. -17.5 Volt-50 Cycle
4	G221 -32000	S. W. Antenna Coil		-49817	Brace-Power Trans. Mtg.
	G281 -32002	Dual Oscillator Coil	50	-130044	1 Meg. Vol. Cont. and Sw.
		A-B-C Oscillator		-130263	1 Meg. Vol. Cont. and Sw.
6	G240 -32004	B-S. W. Oscillator	51	G199 -32004	Wave Trap-45 Kc.
	-32004	1st I-F. Assy.-455 Kc.		-49874	Tube Socket-3 Front
8	G249 -32004	2nd I-F. Assy.-45 Kc.		-45748	Lock Plate-Power Cord
	-49879	2 Section Gang Cond.		-49818	Bracket-Trimmer Front Mtg.
	-130286	Gang Condenser and Push Button Assy.		-49819	Bracket-Coil and Trimmer Rear Mtg.
9	-49723	3 Section Shunt Trimmer Assy.		-49814	R. H. Chassis End Cover (Trimmer Holes) (FS-8)
		A-B-C Antenna Trimmer		-49815	L. H. Chassis End Cover (FS-8)
		B-S. W. Antenna Trimmer			Miscellaneous Parts
		C-B. C. Oscillator Trimmer			
10	G31 -34002	Condenser, .0006 Mf. Mica			
11	NONE				
12	NONE				
13	G5 -34002	Condenser, .0005 Mf. Mica		MG12 -49822	Dial Face Assy.
14	G6 -34002	Condenser, .0006 Mf. Mica		GW -130280	Pointer Pulley and Shaft Assy.
15	-30805	Condenser, .01 Mf. 400 V.		-31709	Flat Washer-Pointer Shaft Retaining
16	-49667	Condenser, .01 Mf. 160 V.		-130277	Pointer-Dial Hand
17	-30488	Condenser, .02 Mf. 400 V.		-130393	Trimount Studs-Dial Face Mtg.
18	G6 -34002	Condenser, .00025 Mf. Mica			
19	-49794	Condenser-3 Section Electrolytic		G11 -41582	Drive Cord-Pointer Shaft (15" Long)
		Section A-20 Mf.-250 V.		G41 -41582	Drive Cord-Cond. Gang (18 1/2" Long)
		Section B-20 Mf.-250 V.		-130275	Manual Drive Shaft
		Section C-30 Mf.-35 V.		-130274	Pulley-Manual Drive Shaft
20	-28904	Condenser, .01 Mf. 200 V.		-4523	Drive Shaft Pulley
21	-34002	Condenser, .001 Mf. Mica		G26 -43564	Pulley & Hub Assy.-On Gang (Large)
22	-50984	Condenser, .03 Mf. 160 V.		MG10 -49822	Bracket Assy.-Tuning Unit Mtg.
23	-49667	Condenser, .02 Mf. 400 V.		-49762	Wood Pulley-Dr. Cord Idler (1 Req.)
24	-30488	Condenser, .02 Mf. 400 V.		-48087	Spring-Drive Cord Tension
25	-35139	Condenser, .004 Mf. 400 V.		-130268	Push Button (5 Req.)
26	G1 -34002	Condenser, .0026 Mf. Mica		G1 -130264	Hub & Arm Assy.-Band Change Sw.
27	NONE			G2 -130264	Knob Shaft and Arm Assy.-Band Change Switch
28	NONE			-49829	Spring-Retainer for G2-130264 Assy.
29	-36760	Resistor, 50,000 Ohms 1/4 W.		-49836	Link- G1-130264 and G2-130264 Con-
30	-35927	Resistor, 2 Megohms 1/4 W.			ductor
31	-47100	Resistor, 10,000 Ohms 2 W.		-49770	Trimount Studs-Link to Arms Fast-
32	NONE			-45580	enier (FS-58)
33	NONE			-130530	Rubber Grommet-Bracket Mtg.
34	-35927	Resistor, 2 Megohms 1/4 W.		-130790	Cabinet
35	-35600	Resistor, 100,000 Ohms 1/4 W.		-130982	Escutcheon-Dial Opening
36	-50956	Resistor, 10 Megohms 1/4 W.		-130158	Escutcheon-Push Button Opening
37	-36761	Resistor, 40,000 Ohms 1/4 W.		-130158	Screws-F. B. Switch Mtg. (FS-77)
38	-35601	Resistor, 300,000 Ohms 1/4 W.		-130133A	Knob-Vol. Cont.-Tune Cont.-Tun.
39	-36322	Resistor, 500,000 Ohms 1/4 W.		-130339	Lever Knob-Band Switch
40	-39115	Resistor, 600 Ohms 1/2 W.		-130251	Station Call Tab Sheet
41	NONE			-130444	Celluloid Call Tab Cover (5)
42	NONE			-130444	Cabin. Protector and Polishing Cloth
43	NONE			-13580-A	Rubber Bump-Sprk.
44	-130263	3 Meg. Tone Control		-50679	Envelope Assy.-Instructions, Call
45	G3 -49729	Speaker (8 inch)			Sheets, Covers, Etc.
	-130810	Bracket (Rear) Sprk. Mtg.		-45030	Flat Washer-Chassis Mtg. (4 Req.)
	-130833	Bracket (Front) Sprk. Mtg.		-49814	(FS-58)
	-46460	Headed Bushing-Sprk. Bracket Mtg.		-49814	Chassis End-R
	-45580	Grommet-Gang and Speaker Mtg.		-49815	Chassis End-L
	-45620	Headed Bushing-Gang Mtg.			



# CROSLY EXPORT MODEL 50-BQ

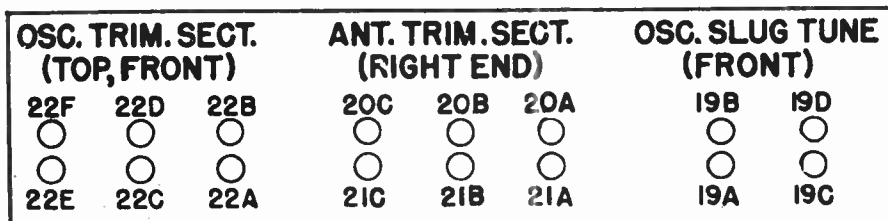
## ALIGNMENT PROCEDURE — MODEL 50-BQ

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Plate of 1G6GT
Generator Ground Connections . . . . .	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output . . . . .	See Chart Below
Position of Volume Control . . . . .	Fully On
Position of Tone Control . . . . .	To Treble or Speech

### ALIGNMENT CHART

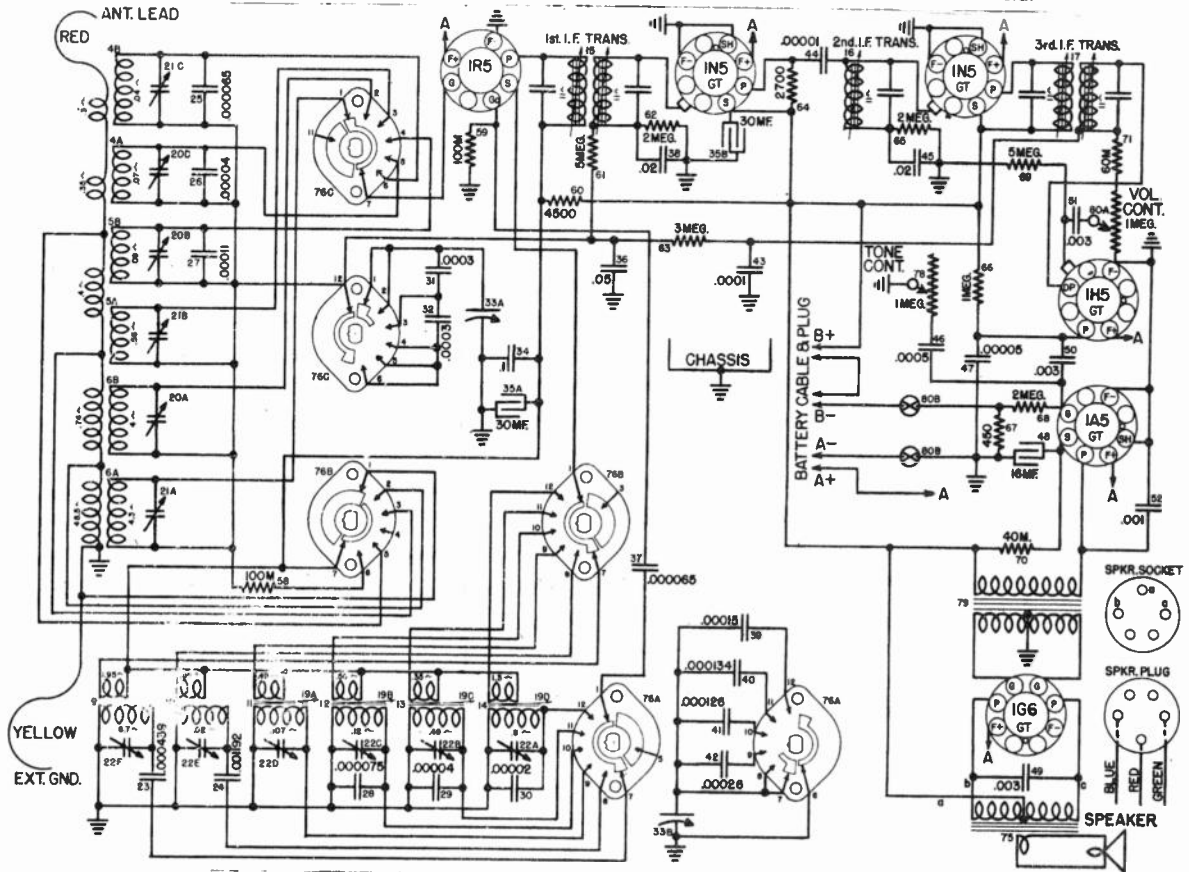
Step	Dummy Antenna	Signal Generator Frequency Setting	Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	.02 Mf.	456 Kc.	Ant.	Band No. 1	Fully open	15A, 15B, and 16A, 17A, 17B 1st, 2nd and 3rd I-F assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Ant.	Band No. 1	Fully open	No. 22F oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Ant.	Band No. 1	Approx. 1400 on dial	No. 21A Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Ant.	Band No. 2	Fully open	No. 22E Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Ant.	Band No. 2	Approx. 4.5 90 Meter band	No. 20A Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Ant.	Band No. 3	Fully open	No. 22D Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Ant.	Band No. 3	Closed	No. 19A Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Ant.	Band No. 3	Approx. 9.0 60 Meter band	No. 21B Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Ant.	Band No. 4	Fully closed	No. 22C Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Ant.	Band No. 4	Closed	No. 19B Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Ant.	Band No. 4	Approx. 11.0 31 Meter Band	No. 20B Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Ant.	Band No. 5	Fully open	No. 22B Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Ant.	Band No. 5	Closed	No. 19C Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Ant.	Band No. 6	Fully open	No. 20G Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Ant.	Band No. 6	Closed	No. 19D Oscillator series	Adjust for maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Ant.	Band No. 6	Approx. 22 16 Meter band	No. 21G Antenna shunt	Adjust for maximum output while rocking gang thru signal.



# SOCKET VOLTAGES MODEL 50-BQ

Measured with 1000 ohm/volt D.C. voltmeter from chassis to tube socket contact.

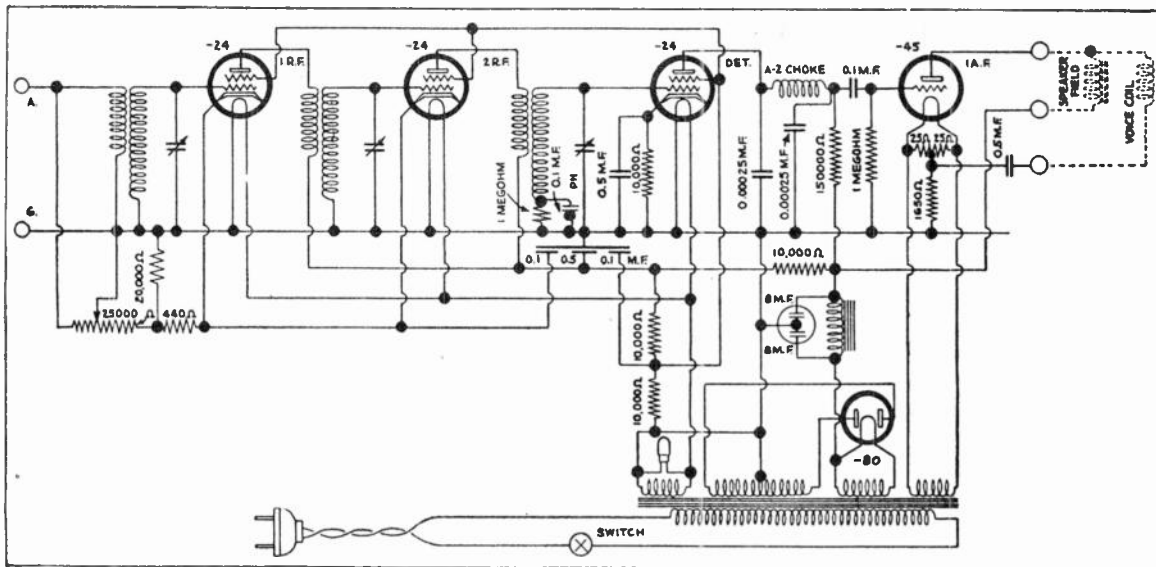
TUBE	FUNCTION	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1R5	Oscillator-Mixer	GND.	85	85	OSC. GRID	GND.	GRID	1.5	NONE
1N5GT	1st I-F Amp.	GND.	1.5	90	80	N.C.	N.C.	GND.	J. B.
1N5GT	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J. B.
1H5GT	Det. A.V.C. 1st Audio	GND.	1.5	15	N.C.	DIODE	J. B.	GND.	J. B.
1A5GT	A.F. Driver	GND.	1.5	90	62	-4.5	J. B.	GND.	N.C.
1G6GT	Output	GND.	GND.	90	GRID	GRID	90	1.5	J. B.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	-131891	Batt. Cable & Plugs	59	-35600	Res. 100,000 Ohms 1/2 W. Ins.
2			60	-38428	Res. 4500 Ohms 1/2 W. Ins.
3			61	-47131	Res. 5 Megohm 1/2 W. Ins.
4A	G229-33000	Coil-25-19 M Ant.	62	-35827	Res. 2 Megohm 1/2 W. Ins.
4B	G228-33000	Coil-60-49 M Ant.	63	-36688	Res. 3 Megohm 1/2 W. Ins.
5A		Coil-31 M Ant.	64	-36518	Res. 2500 Ohm 1/2 W. Ins.
5B		Coil-5.5 B. Ant.	65	-35827	Res. 1 Megohm 1/2 W. Ins.
6A	G230-33000	Coil-90 M Ant.	66	-35802	Res. 450 Ohm W. W.
6B			67	-38517	Res. 5 Megohm W. W.
7			68	-35827	Res. 40,000 Ohm W. W.
8			69	-47131	Res. 2 Megohm W. Ins.
9	G254-32002	Coil-S.B.B. Osc.	70	-36761	Res. 60,000 Ohm W. W.
10	G225-32002	Coil-90 M Osc.	71	-35928	Res. 60,000 Ohm W. W.
11	G255-32002	Coil-60-49 M Osc.	72		
12	G257-32002	Coil-31 M Osc.	73		
13	G256-32002	Coil-25-19 M Osc.	74		
14	G258-32002	Coil-18-13 M Osc.	75		
15	G264-32004	1st I-F Trans.			
16	G265-32004	2nd I-F Trans.			
17	G263-32004	3rd I-F Trans.			
18	NONE	Iron Core (I.F.)			
19	-131197	Iron Core (4) Osc. (Tuning)			
20A	131128	Cond. Trim. 31 M Ant.	76A		
20B		Cond. Trim. 25-19 Ant.	77		
21A	-131129	Cond. Trim. 18-13 M Ant.	78		
21B		Cond. Trim. S. B. B. Ant.	79		
21C		Cond. Trim. 90 M Ant.	80A		
22A	MG22-131131	Cond. Trim. 60-49 M Ant.	80B		
22B		Cond. Trim. 16-13 M Osc.			
22C		Cond. Trim. 25-19 M Osc.			
22D		Cond. Trim. 31 M Osc.			
22E		Cond. Trim. 50-49 M Osc.			
22F		Cond. Trim. 90 M Osc.			
23	G12-131502	Cond. 23 Mmf. Mica			
24	G1-131501	Cond. 1192 Mmf. Mica			
25	C2-131502	Cond. 65 Mmf. Mica			
26	C2-131502	Cond. 40 Mmf. Mica			
27	C6-131502	Cond. 110 Mmf. Mica			
28	G4-131502	Cond. 75 Mmf. Mica			
29	C2-131502	Cond. 40 Mmf. Mica			
30	G1-131502	Cond. 20 Mmf. Mica			
31	G11-131502	Cond. 80 Mmf. Mica			
32	G11-131502	Cond. Mmf. Mica			
33A	131164-B	Var. Cond. Ant. Sect.			
33B		Var. Cond. Osc. Sect.			
34	-131887	Cond. 1 Mf. 400 V. Paper			
35A	-47892	Cond. 30 Mf. 150 V. Paper			
35B		Cond. 30 Mf. 150 V. Elect.			
36	130922-A	Cond. .05 Mf. 400 V. Paper			
37	-131102	Cond. 65 Mmf. Mica			
38	G3-131502	Cond. .02 Mf. 400 V. Paper			
39	G3-131502	Cond. 150 Mmf. Mica			
40	G8-131502	Cond. 134 Mmf. Mica			
41	G7-131502	Cond. 128 Mmf. Mica			
42	G10-131502	Cond. 260 Mmf. Mica			
43	G16-131502	Cond. 190 Mmf. Mica			
44	C17-131502	Cond. 10 Mmf. Mica			
45	-131118	Cond. .02 Mf. 400 V. Paper			
46	G5-131502	Cond. 50 Mmf. Mica			
47	G15-131502	Cond. 50 Mmf. Mica			
48	-131578	Cond. 16 Mf. 125 V. Elect.			
49	-130922-A	Cond. .003 Mf. 400 V. Paper			
50	-130922-A	Cond. .003 Mf. 400 V. Paper			
51	-130922-A	Cond. .003 Mf. 400 V. Paper			
52	-131886	Cond. .001 Mf. 400 V. Paper			
53					
54					
55					
56					
57					
58	-35600	Res. 100,000 Ohms 1/2 W. Ins.			

# Models 53, 54 and 57



Qty.	Part No.	Description	Qty.	Part No.	Description
<b>MODEL 54</b>					
1	D-20727	Chassis .....			
2	W-7871	Socket (4 prong) .....			
2	W-7872	Socket Guide .....			
3	W-7873	Socket (5 prong) .....			
3	W-7874	Socket Guide .....			
1	W-20553	Volume Control .....			
1	W-20381	Filter Choke .....			
1	W-4943	Mershon Condenser (8. - 8. Mfd. ....			
2	W-5033	Condenser Clamp .....			
1	W-4794	Stiffened Sleeving (6½").....			
1	W-20730	Variable Condenser Gang ..			
1	W-20979	Dial Drum .....			
1	W-20978	Dial Drum Cover .....			
1	W-20977	Dial Band .....			
2	W-20445	R. F. Transformer .....			
1	W-20444	R. F. Trans. (antenna).....			
3	W-7272	Screen Grid Connectors.....			
3	W-21257	R. F. Coil Shield .....			
1	W-20576	Power Switch .....			
1	W-20553	Power Transformer 110 V. 60 Cycle .....			
	W-20693	Power Transformer 110 V. 25 Cycle .....			
	W-20694	Power Transformer 220 V. 25 Cycle .....			
1	C-20871	R. F. Shield .....			
<b>Parts Under Chassis</b>					
1	W-5669	25-25 Ohm Resistance .....			
1	W-20560	1650 Ohm Resistance .....			
1	W-5943	.1 Mfd. Fixed Condenser (3 paper) .....			
1	W-4924	.00025 Mfd. Fixed Condenser .....			
1	W-4362	Plate Choke .....			
1	W-4924	.00025 Mfd. Fixed Condenser .....			
1	W-20910	Speaker Terminal .....			
1	W-4910	.5 Mfd. Fixed Condenser (3 paper) .....			
1	W-20440	.5 - .1 Mfd. Fixed Condenser .....			
1	W-7753	.1 - .5 - .1 Mfd. Fixed Cond. ....			
1	W-20009	Candohm Fixed Resistance (10,000 ohms) .....			
1	W-20821	Mounted Resistor Assembly .....			
1	W-20009	Mounting Strip .....			
2	W-4921	10,000 Ohm Resistor (Brown, Black, Orange Spot) .....			
	W-5370	20,000 Ohm Resistor (Red, Black, Orange Spot) .....			
	W-5735	150,000 Ohm Resistor (Brown, Green, Yellow Spot) .....			
1	W-20738	Mounted Resistor Assembly .....			
1	W-20009	Mounting Strip .....			
2	W-20464	1 Megohm Resistor (Brown, Black, Green Spot) .....			
	W-7335	440 Ohm Resistor (Yellow, Brown Spot) .....			
	W-4921	10,000 Ohm Resistor (Brown, Black, Orange Spot) .....			
1	W-20883	Terminal Board (A. G. & Ph.) .....			
1	B-6867	Cable & Plug .....			
1		Grommet .....			
1	C-20872	Chassis Bottom .....			
1	W-20873	Bottom Bracket .....			
2	W-20482	Knobs .....			
2	W-7947	Knob Springs .....			
<b>MODEL 53</b>					
(Except as noted below same parts are used on Model 53 as on Model 54)					
	D-20593-C	Chassis .....	1		
3	B-7558	R. F. Coil Shield .....	3		
1	W-20536	Variable Condenser Gang .....	1		
	W-20722	Dial Light Assembly .....			
	W-7154	Dial .....			
	W-5354	Dial Indicator .....			
	W-20594	Pinion Inner Bracket .....			
	W-4899	Pinion .....			
	W-4907	Pinion Washer .....			
	W-20595	Pinion Outer Bracket .....			
1	C-20455-D	R. F. Shield Assembly .....	1		
1	W-7496	Power Transformer Shield .....	1		
1	W-4946	Condenser Cap .....	1		
1	W-4968	.5 Mfd. Fixed Condenser (2 paper) .....	1		
1	W-5713	Mounting Strip .....	1		
1	W-5382	.00025 Mfd. Fixed Condenser .....	1		
1	W-6471	.1 Mfd. Fixed Condenser (2 paper) .....	1		
1	W-5382	.00025 Mfd. Fixed Condenser .....	1		
1	W-5713	Mounting Strip .....	1		
1	W-5735	150,000 ohm Resistor (Brown, Green, Yellow Spot) .....	1		
1	W-20555	Mounted Resistor Assembly .....	1		
1	W-20630	Bottom Bracket .....	1		
1	C-20658-A	Chassis Bottom .....	1		
4	W-20458	Spring Clips .....	4		
1	W-20167	Knob (Large) .....	1		
1	W-20482	Knob (Small) .....	1		
<b>MODEL 57</b>					
This model employs a different speaker socket and an additional 0.25 m. f. condenser for the filter system. Otherwise parts for Model 57 are the same as those for Model 53.					

# CHASSIS MODEL No. 55

## ALIGNMENT PROCEDURE

### Preliminary

Output Meter Connections.....	Plate to Plate of 6AC5G's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Master Tone Control.....	All Buttons Out

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

### TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SA7—Converter.....		Gnd.	Gnd.	180	74	0	10-S. W. 1 14.0 B. C. 1	6.3 A. C.	0
6SK7—I. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.....		Gnd.	0	Gnd.	0	0	75	6.3 A. C.	Gnd.
6J5GT—Phase Inverter.....		Gnd.	Gnd.	145	J. B.	0	J. B.	6.3 A. C.	40
6J5GT(2)—P. P. A. F. Drivers.....		Gnd.	Gnd.	180	0	0	J. B.	6.3 A. C.	6.5
6AC5GT(2)—P. P. Output.....		Gnd.	Gnd.	304	J. B.	6.5	J. B.	6.3 A. C.	Gnd.
5Y3G—Rectifier.....		N. C.	310	J. B.	308 A. C.	J. B.	308 A. C.	J. B.	310

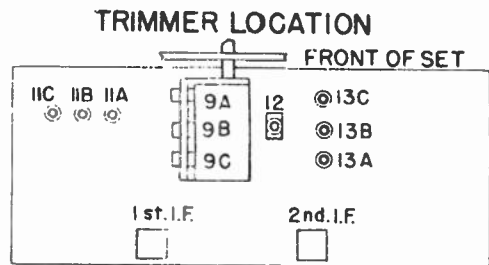
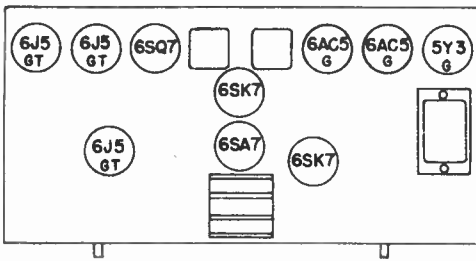
MAX. POWER OUTPUT.....12.0 WATTS  
POWER CONSUMPTION.....90 WATTS  
DROP ACROSS SPEAKER FIELD.....120 VOLTS

J. B.—Junction Block

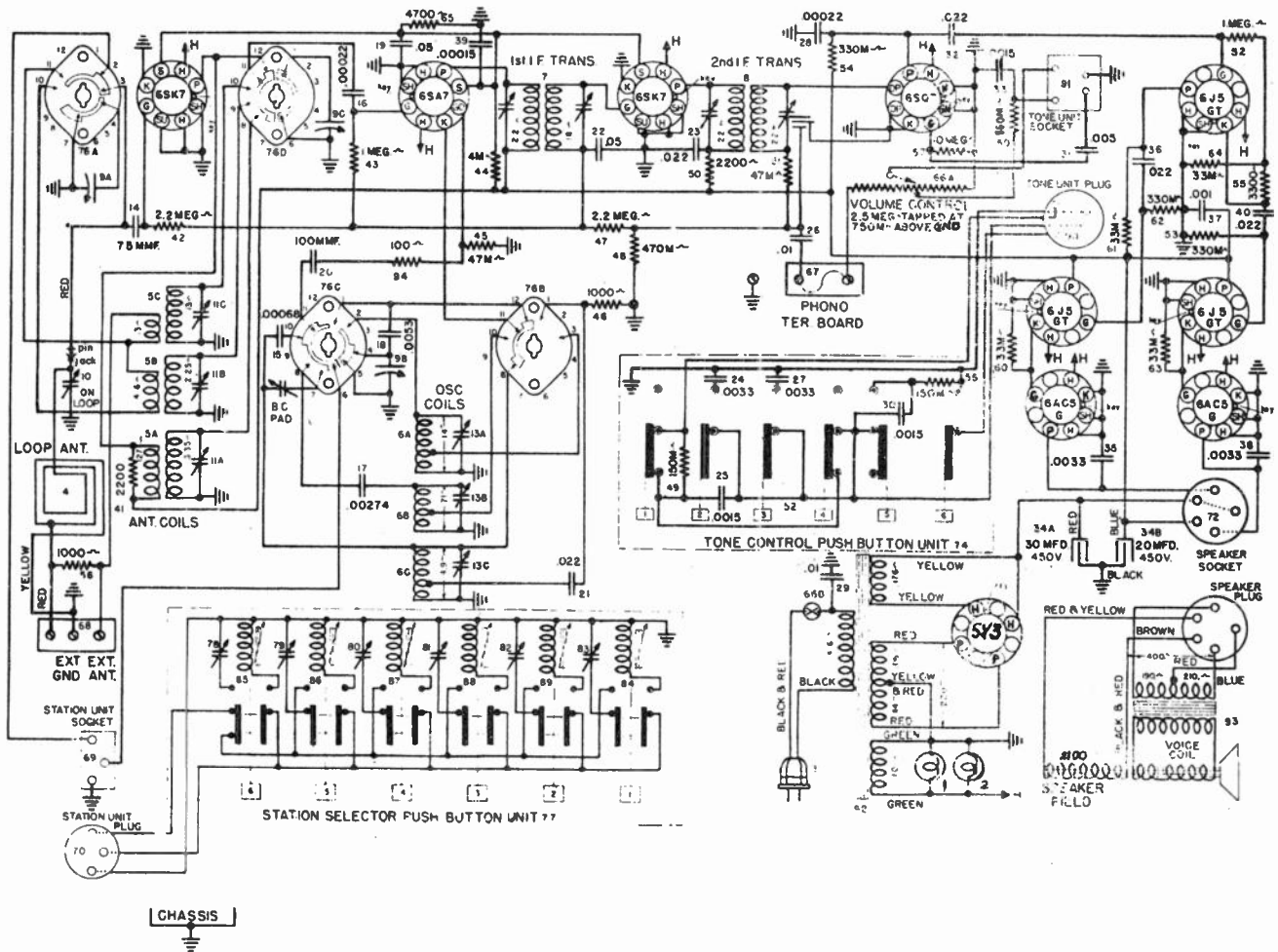
N. C.—No Connection

Voltages may vary 10% of values given.

# MODELS 02CA, 02CB TUBE AND TRIMMER LAYOUT



## WIRING DIAGRAM, MODELS 02CA AND 02CB — CHASSIS MODEL No. 55





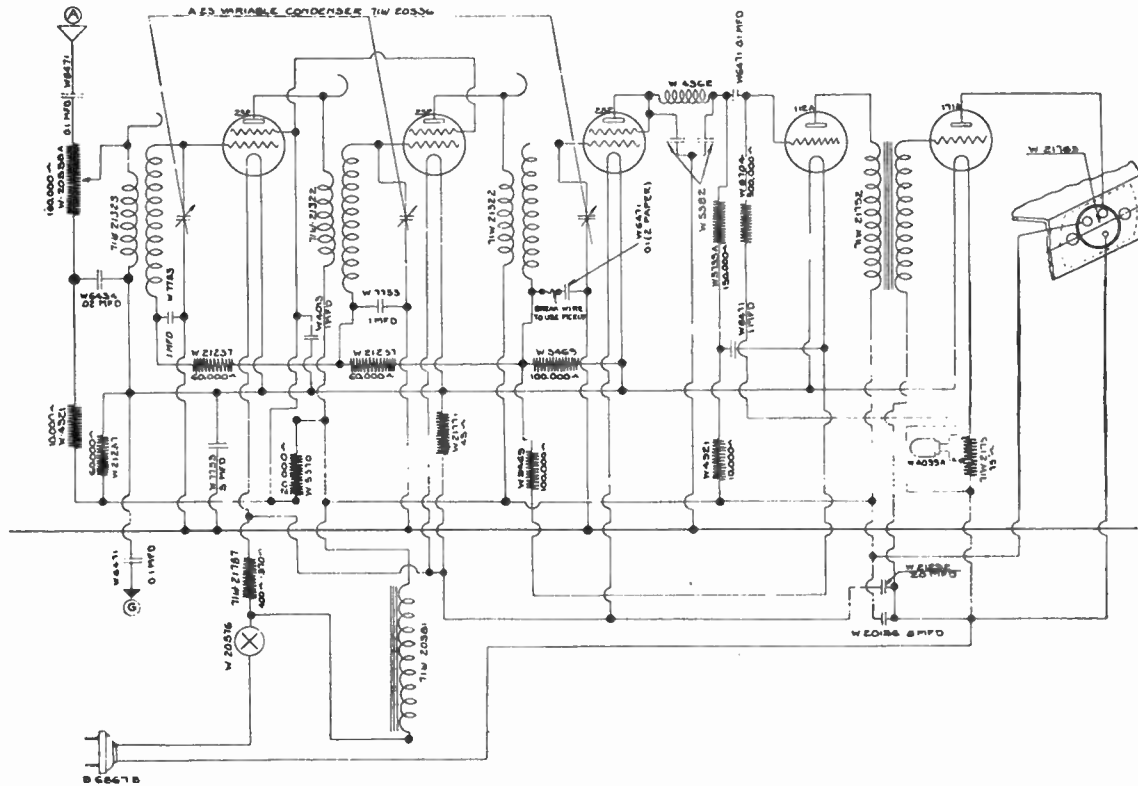
# PARTS LIST, MODELS 02CA AND 02CB — CHASSIS MODEL No. 55

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light.	68	G51 —26719	Ant. Term. Board.
2	—48858	Dial Light.	69	—47133	Socket-Sta. Selector.
	—49637-17	Dial Light Socket (2)	70	—132437-2	Cable & Plug-Sta. Selector.
3	—132300-2	Power Cord & Plug.	71		
4		Antenna Loop.	72	G103—26807	Socket Speaker.
5A	L—132384	Ant. Coil & Trimmer Assem.	73		
5B	G236—32000	B. C. R. F. Coil.	74	—132411	Tone Sw. Assem.
5C		Pol. Band Ant. Coil.	75		
		S-W Ant. Coil.	76A	—132298-1	Band Chg. Sw. Ant. Sec.
6A	L—132385	Osc. Coil & Trimmer Assem.	76B		Band Chg. Sw. Osc. Sec.
6B	G265—32002	S-W Osc. Coil.	76C		Band Chg. Sw. Osc. Sec.
6C		Pol. Band Osc. Coil.	76D		Band Chg. Sw. R. F. Sec.
7	G272—32004	B. C. Osc. Coil.	77	—132429	Sta. Selector Assem.
8	G273—32004	1st I. F. Trans.	78	—132436-4	Trimmer—Sta. Sel.
9A		2nd I. F. Trans.	79	—132436-3	Trimmer—Sta. Sel.
9B	—132296-2	Var. Cond. Ant. Section.	80	—132436-3	Trimmer—Sta. Sel.
9C		Var. Cond. Osc. Section.	81	—132436-2	Trimmer—Sta. Sel.
10	—132418-1	Var. Cond. B. C. R. F. Sec.	82	—132436-2	Trimmer—Sta. Sel.
11A	—132386-1	Ant. Loop Trimmer.	83	—132436-1	Trimmer—Sta. Sel.
11B		B. C. R. F. Coil Trimmer.	84	G269—32002	Coil—Sta. Sel.
11C		Pol. Band Ant. Trimmer.	85	G267—32002	Coil—Sta. Sel.
12	—49652-1	S. W. Ant. Coil Trimmer.	86	G268—32002	Coil—Sta. Sel.
13A	—132386-1	Padder Cond. B. C. Osc. Coil.	87	G268—32002	Coil—Sta. Sel.
13B		S. W. Osc. Coil Trimmer.	88	G270—32002	Coil—Sta. Sel.
13C		Pol. Band Osc. Coil Trimmer.	89	G270—32002	Coil—Sta. Sel.
14	G6* —39004	B. C. Osc. Coil Trimmer.	90	—132437-1	Cable & Plug—Tone Sw.
15	G20 —131502	7. Mmf. Cond.	91	—132303-1	Socket—Tone Sw.
16	G9 —39004	680 Mmf. Cond.	92	—132312-1	Power Trans. (110-50-60)
17	G35 —34005	220 Mmf. Cond.	93	—132348-4	Speaker (02CB Only)
18	G34 —34005	.00274 Mf. Cond.			Output Trans.
19	G41 —39001	.0053 Mf. Cond.		—131880-3	Speaker (02CA Only)
20	G27 —39004	.05 Mf. 400 V. Cond.	94	G1 —39002	Output Trans.
21	G63 —39001	100 Mmf. Cond.		—52109	100 Ohm 1/4 W. Res.
22	G65 —39001	.022 Mf. 200 V. Cond.		—131863	Tube Socket (10)
23	G15 —39001	.05 Mf. 200 V. Cond.		—132231-2	Clamp—Power Cable.
24	G10 —39001	.022 Mf. 600 V. Cond.		—132320-1	Dial Face Assem.
25	G8 —39001	.0033 Mf. 600 V. Cond.		—132167-4	Dial Pointer.
26	G61 —39001	.0015 Mf. 600 V. Cond.		—132332-1	Drive Cord Assem.
27	G10 —39001	.01 Mf. 200 V. Cond.		—49786-1	Drive Shaft.
28	G9 —39004	.0033 Mf. 600 V. Cond.		—49829B	Drive Shaft Bearing.
29	—30805	220 Mmf. Cond.		—132321-1	Lock Spring—Dr. Shaft.
30	G8 —39001	.01 Mf. 120 V. A. C. Cond.		—132403-1	Chassis Mtg. Feet (4)
31	G11 —39001	.0015 Mf. 600 V. Cond.		—132417-2	Toggle Arm & Link.
32	G39 —39001	.022 Mf. 400 V. Cond.		—132326-1	Cabinet (02CA)
33	G8 —39001	.0015 Mf. 600 V. Cond.		—132326-1	Cabinet (02CB)
34A	—132301-2	30 Mf. Elect. Cond.		—132310-1	Carton (02CA)
34B		20 Mf. Elect. Cond.		—132327-1	Carton (02CB)
35	G10 —39001	.0033 Mf. 600 V. Cond.		—132371-1	Screw—Chassis Mtg. (4)
36	G39 —39001	.022 Mf. 400 V. Cond.		—44725	Washer—Chassis Mtg. (4)
37	G7 —39001	.001 Mf. 600 V. Cond.		—132322-1	Spring—Top—Chassis Mtg. (1)
38	G10 —39001	.0033 Mf. 600 V. Cond.		—132323-2	Spring—Bot.—Chassis Mtg. (4)
39	G8 —39004	150 Mmf. Cond.		—45580A	Grommet—Spkr. Mtg. (4)
40	G39 —39001	.022 Mf. 400 V. Cond.		—37953	Washer—Spkr. Mtg. (4)
41	G9 —39002	2200 Ohm 1/4 W. Res.		—N8	Nut—Spkr. Mtg. (4)
42	G27 —39002	2.2 Megohm 1/4 W. Res.		—L8	Lockwasher—Spkr. Mtg. (4)
43	G25 —39002	1 Megohm 1/4 W. Res.		—132346-1	Dial Glass.
44	—132458-1	4000 Ohm 3 W. Res.		—132347-1	Rubber Gasket—Dial Glass.
45	G17 —39002	47000 Ohm 1/4 W. Res.		—132393-1	Knob—Large (2)
46	G7 —39002	1000 Ohm 1/4 W. Res.		—132341-1	Knob—Small (2)
47	G27 —39002	2.2 Megohm 1/4 W. Res.		—132308-1	Paper Washer—Knob (2)
48	G23 —39002	470,000 Ohm 1/4 W. Res.		—132343-4	Escutcheon—Dial.
49	G20 —39002	150,000 Ohm 1/4 W. Res.		—90405	Speed Nut—P. B. Mtg. (8)
50	G9 —39002	2200 Ohm 1/4 W. Res.		—132396-1	Push Button—Sta. Sel. (6)
51	G17 —39002	17,000 Ohm 1/4 W. Res.		—132314-2	Plate—Sta. Sel. P. B.
52	G25 —39002	1 Megohm 1/4 W. Res.		—132345-2	Plate—Tone Sw. P. B.
53	G22 —39002	330,000 Ohm 1/4 W. Res.		—132397-1	Tone Button—No. 1.
54	G22 —39002	330,000 Ohm 1/4 W. Res.		—132397-2	Tone Button—No. 2.
55	G10 —39002	3300 Ohm 1/4 W. Res.		—132397-3	Tone Button—No. 3.
56	G7 —39002	1000 Ohm 1/4 W. Res.		—132397-4	Tone Button—No. 4.
57	G31 —39002	10 Megohm 1/4 W. Res.		—132397-5	Tone Button—No. 5.
58	G20 —39002	150,000 Ohm 1/4 W. Res.		—132397-6	Tone Button—No. 6.
59	G20 —39002	150,000 Ohm 1/4 W. Res.		—132430-1	Loop Spacer Assem. (1)
60	G16 —39002	33,000 Ohm 1/4 W. Res.		—131969-2	Loop Spacer (2)
61	G16 —39002	33,000 Ohm 1/4 W. Res.		—131970-2	Loop Spacer—Ecc. (1)
62	G22 —39002	330,000 Ohm 1/4 W. Res.		—132416-1	Brkt.—Loop Spacer (4)
63	G16 —39002	33,000 Ohm 1/4 W. Res.		—32657	Loop Ant. Wire—(89')
64	G16 —39002	33,000 Ohm 1/4 W. Res.		—132311	Instr. Envelope Assem.
65	—132459-1	4700 Ohm 2 W. Res.		—132434-1	Call Letter Sheet.
66A	—132299-2	Vol. Control 2.5 Megohm.		—132399-1	Call Letter Cover.
66B		A. C. On-Off Switch.		—132312-1	Instruction.
67	G61 —26719	Phone Term. Board.			

*Crosley supplies a general replacement line of radio parts through its national distributor organization. Do not hesitate to write to the factory for information as to where these parts may be purchased.*

# MODEL 55

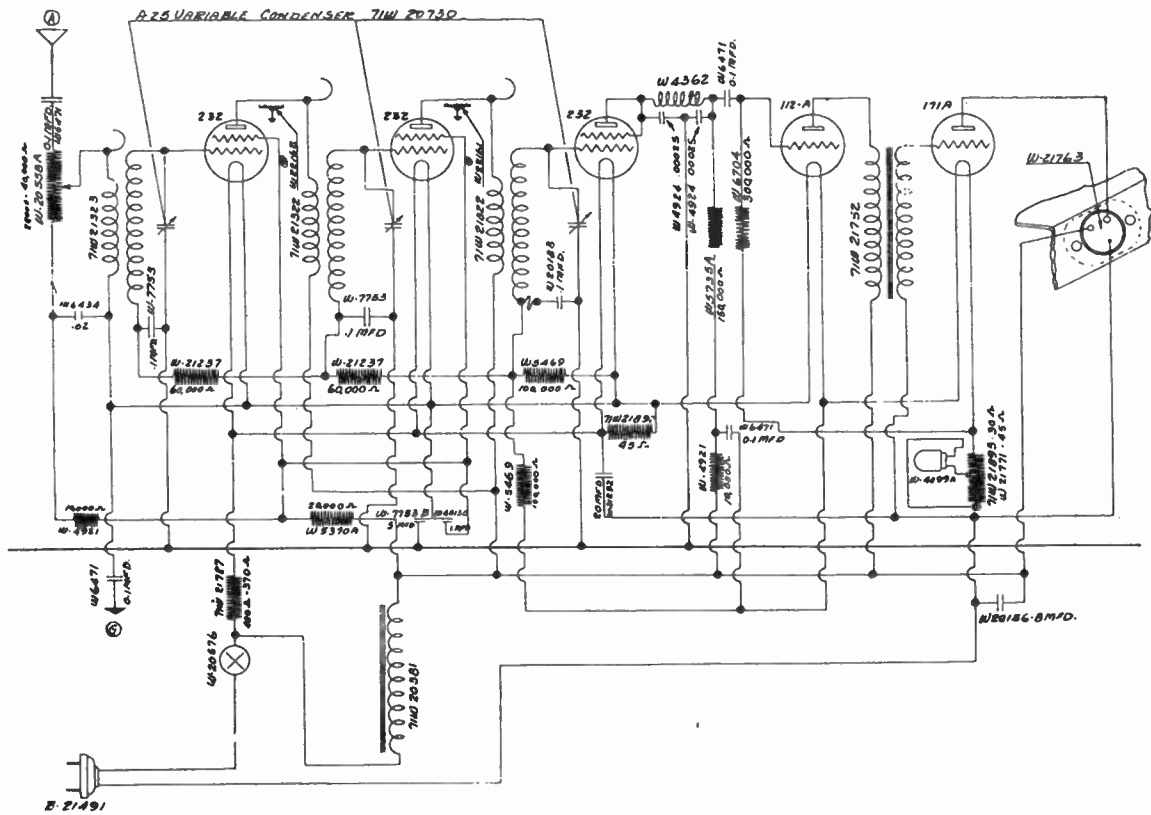


## Parts List Model 55

**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

Qty.	Part No.	Description	Qty.	Part No.	Description
1	D-21701	Chassis .....	2	W-5382	0.00025 Mfd. Fixed Condenser
5	W-7871	Socket (4 Prong) .....	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
5	W-7874	Socket Guide .....	1	W-5469	Resistor 100,000 ohms (brown, black, yellow spot)
2	W-21322	R. F. Transformer .....	2	W-21237	Resistor 60,000 ohm
1	W-21323	R. F. Transformer (Ant.) .....	1	W-6434	0.02 Mfd. Fixed Condenser
3	W-21739	Grid Connectors .....	1	W-20940	Resistor Assembly
3	B-21174	R. F. Coil Shield .....	1	W-5713	Mounting Strip
1	W-20558	Volume Control .....	1	W-4921	Resistor 10,000 ohms
1	W-20536	Variable condenser gang .....	1	W-4362	Plate Choke
1	W-20081	Spider .....	1	W-7753	6.1-0.5-0.1 Mfd. Fixed Condenser
1	W-7154	Dial Gear .....	1	W-4013	1. Mfd. Fixed Condenser (2 paper)
1	W-5596	Set Screw .....	1	W-6471	0.1 Mfd. Fixed Condenser
1	W-5354D	Dial Indicator .....	1	W-21754	Resistor Assembly
1	W-4899	Pinion .....	1	W-21771	Mounting Strip & Resistance (45 ohm)
1	W-20594	Pinion Bracket (inner) .....	1	W-5735	Resistor 150,000 ohms (brown, green, yellow spot)
1	W-20595	Pinion Bracket (outer) .....	1	W-4921	Resistor 10,000 ohms (brown, black, orange spot)
1	W-4907	Spring Washer .....	1	W-5469	Resistor 100,000 ohms (brown, black, yellow spot)
1	W-20722	Dial Light Bracket .....	1	W-6704	Resistor 300,000 ohms (orange black, yellow spot)
1	W-20576	Power Switch .....	1	W-20630	Bottom Bracket
1	B-21762	Chassis Plate .....	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
1	W-20156	8 Mfd. Condenser .....	1	W-21751	Resistance Assembly (45-30 ohms)
1	W-21760	Filament drop resistor (400-370 ohms) .....	1	W-21798	Junction Block
1	W-21770	Filament drop resistor bracket .....	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
2	W-4435	Asbestos Washer .....	1	W-20883	Terminal (A. G & P. H.)
1	W-20381	Filter Choke .....	1	W-21763	Speaker Terminal Socket
1	W-21292	Electrolytic Condenser (20 mfd.) .....	1	B-6807	Cable
1	W-21752	A. F. Transformer .....	1	C-21581	R. F. Shield Assembly
<b>PARTS UNDER CHASSIS</b>			1	C-20558	Chassis Bottom
1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1	W-20167	Knob (large)
1	W-21109	Resistor Assembly	2	W-20482	Knob (small)
1	W-5713	Mounting Strip			
1	W-5370	Resistor 20,000 ohms (red, black, orange spot)			
1	W-21237	Resistor 60,000 ohms (blue, black, orange spot)			

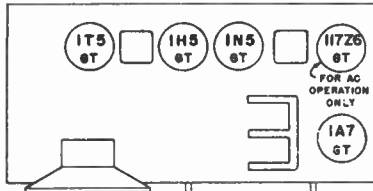
MODELS 56



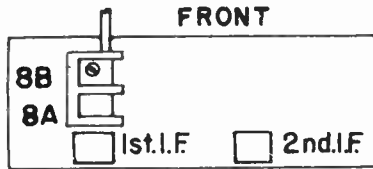
Parts List Model 56

Qty.	Part No.	Description	Qty.	Part No.	Description
1	C-21900	Chassis .....	1	W-6434	0.02 Mfd. Fixed Condenser ....
5	W-7871	Socket (4 prong) .....	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser
5	W-7874	Socket Guide .....			ser
1	W-20558	Volume Control .....	1	W-4013	1. Mfd. Fixed Condenser (2
1	W-21752	A. F. Transformer .....			paper)
1	W-21760	Filament Drop Resistor (400-370 ohms) .....	1	W-21237	Resistor (60,000 ohms) Blue, black, orange .....
1	W-21779	Filament Drop Resistor .....	1	W-5469	Resistor 100,000 ohms Brown, black, yellow .....
		Bracket .....			
2	W-4435	Asbestos Washer .....	1	W-21237	Resistor (60,000) ohms) .....
1	W-20730	Variable Condenser Gang.....	3	W-21127	Stiffened Sleeving (3-8"x2") .....
1	W-20081	Spider .....	1	W-20873	Bottom Bracket .....
1	W-22093	Dial .....	2	W-6471	0.1 Mfd. Fixed Condenser (2
1	W-22094	Dial Strip .....			paper)
1	W-20077	Dial Band .....	1	W-21895	Fixed Resistance Assembly .....
2	W-21522	R. F. Transformers .....			Resistance and mounting
1	W-21223	R. F. Transformers (antenna) .....			strip (45 ohms) .....
3	W-21739	Grid Connectors .....			Resistor 150,000 ohms (Brown, green, yellow) .....
3	W-21257	R. F. Coil Shields .....			Resistor 300,000 ohms (Orange, black, yellow) .....
1	C-20871	R. F. Shield .....			Resistor 10,000 ohms (Brown, black, orange) .....
1	W-20576	Power Switch .....			Resistance Assembly .....
1	W-22090	Dial Light Bracket .....	1	W-21804	Resistance Assembly .....
1	W-21901	Chassis Plate .....			Mounting Strip .....
1	W-20381	Filter Choke .....			Resistor (10,000 ohm Brown, black, orange) .....
1	W-20136	Condenser (8 Mfd. 2 paper) .....			Resistor (100,000 ohm) Brown, black, yellow .....
1	W-21703	Speaker Terminal .....			Resistor (20,000 ohm) Red, black, orange .....
1	W-20883	Terminal A. G. & P.H. ....			20 Mfd. Condenser .....
<b>PARTS UNDER CHASSIS</b>					
1	W-21893	Fixed Resistance (30 ohm) ..	1	W-21292	20 Mfd. Condenser .....
1	W-21892	Fixed Resistance (45 ohm) ..	1	R-21491	Cable .....
1	W-20188	0.1 Mfd. Fixed Condenser ....	1	C-20872	Chassis Bottom .....
1	W-4342	Plate Choke .....	2	W-20482	Knob (Small) .....
2	W-4921	0.00025 Mfd. Fixed Condenser			
2	W-6471	0.1 Mfd. Fixed Condenser (2 paper) .....			

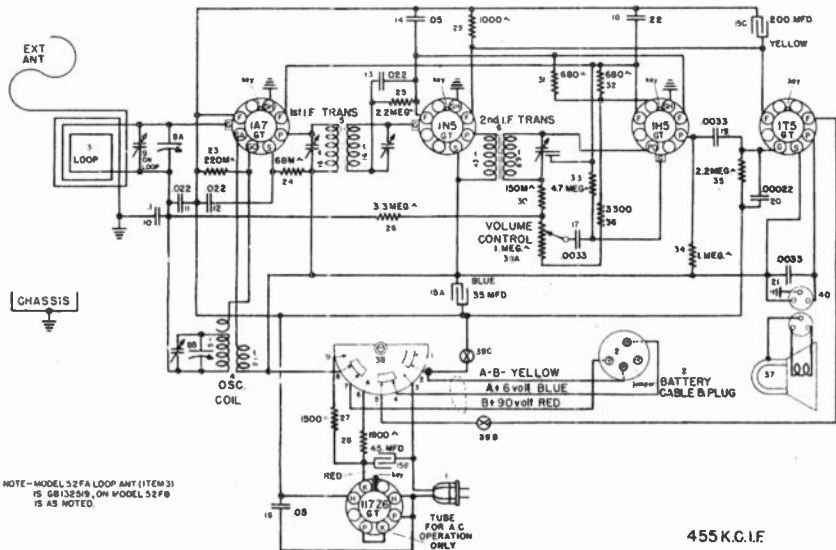
TUBE LAYOUT



TRIMMER LOCATIONS



WIRING DIAGRAM



455 K.C. I.F.

Tube	Function	@ 117.5-Volt Line				Battery Pack			
		Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	90	36	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	90	90	.....
1H5GT	Det.-A. S. C. 1st A. F.	2.6	7	.....	.....	3.0	8	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	88	90	.....
1I726GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	115	.....	.....	.....	.....

ALIGNMENT PROCEDURE

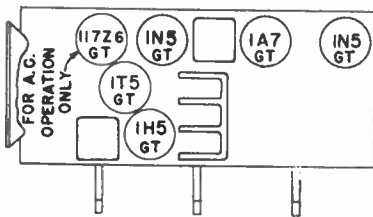
Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)		REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO					
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F (1)		Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)		Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang		Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on loop		Adjust for maximum output.

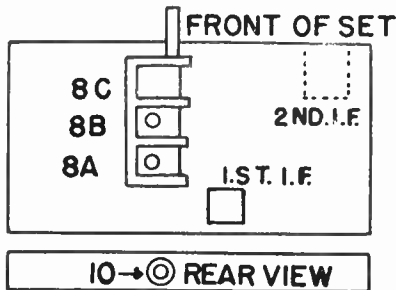
Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-3	A. C. Cable and Plug	31	39002-G6	Res. 680 Ohm. 1/4 W.
2	132503-1	Battery Cable and Plug—(52 FA Only)	32	39002-G6	Res. 680 Ohm. 1/4 W.
	132503-2	Battery Cable and Plug—(52 FB Only)	33	39002-G29	Res. 4.7 Meg. 1/4 W.
3	132530	Loop Antenna—(52 FA Only)	34	39002-G25	Res. 1 Meg. 1/4 W.
	132519	Loop Antenna—(52 FB Only)	35	39002-G27	Res. 2.2 Meg. 1/4 W.
4	32002-G272	Osc. Coil	36	39002-G10	Res. 3300 Ohm. 1/4 W.
5	32004-G268	1st I.F. Trans.	37	132670-2	Speaker
6	32004-G276	2nd I.F. Trans.	38	49772-1	Bat. Switch
7	NO ITEM		39A	130520-2	Vol. Control—1 Meg.
8A	132150-1	Var. Cond. R.F. Sec.	39B		On-Off Switch
8B		Var. Cond. Osc. Sec.	39C		On-Off Switch
9	132267-1	Trimmer Cond.		132256-1	Cabinet (52 FA)
10	39001-G67	Cond. .1 Mfd. 200 V.		132517-1	Cabinet (52 FB)
11	39001-G63	Cond. .022 Mfd. 200 V.		132221-1	Mtg. Screw (52 FA)
12	39001-G63	Cond. .022 Mfd. 200 V.		130558	Mtg. Screw (52 FB)
13	39001-G63	Cond. .022 Mfd. 200 V.		132127-1	Knob (3)
14	39001-G65	Cond. .05 Mfd. 200 V.		42911	Cabinet Protector (3)
15A	132501-1	Cond. 35 Mfd. Elec.		G-132231-9	Dial Assem.
15B		Cond. 45 Mfd. Elec.		132258-1	Dial Lens.
15C		Cond. 200 Mfd. Elec.		132124	Trimount Stud—Dial
16	39001-G65	Cond. .05 Mfd. 200 V.		132097-6	Dial Pointer
17	39001-G10	Cond. .0033 Mfd. 600 V.		132167-3	Drive Cord Assem.
18	39001-G69	Cond. .22 Mfd. 200 V.		132119-3	Drive Shaft
19	39001-G10	Cond. .0033 Mfd. 600 V.		51071	Retaining Ring
20	39004-G9	Cond. .00022 Mfd.		132123	Tube Socket
21	39001-G10	Cond. .0033 Mfd. 600 V.		43590-A	Grommet—Spkr. Mtg. (3)
22				46460	Headed Bushing—Spkr. Mtg. (3)
23	39002-G21	Res. 220000 Ohm. 1/4 W.		132546-1	Speaker Brkt.—L.H.
24	39002-G18	Res. 68000 Ohm. 1/4 W.		130181	Screw—Spkr. Mtg. (4)
25	39002-G27	Res. 2.2 Meg. Ohm. 1/4 W.		132520-1	Screw—Spkr. Mtg. (3)
26	39002-G28	Res. 3.3 Meg. Ohm. 1/4 W.		N-5096	Nut—Spkr. Mtg. (3)
27	39002-G8	Res. 1500 Ohm. 1/4 W.		132512-1	Instructions
28	132502-1	Res. 1900 Ohm. Candohm.		132829-1	Speaker Brkt.—R.H.
29	39002-G7	Res. 1000 Ohm. 1/4 W.		48200	Trimount Stud—Back
30	39002-G20	Res. 150000 Ohm. 1/4 W.			

# SERVICE INFORMATION — Model 58 Chassis

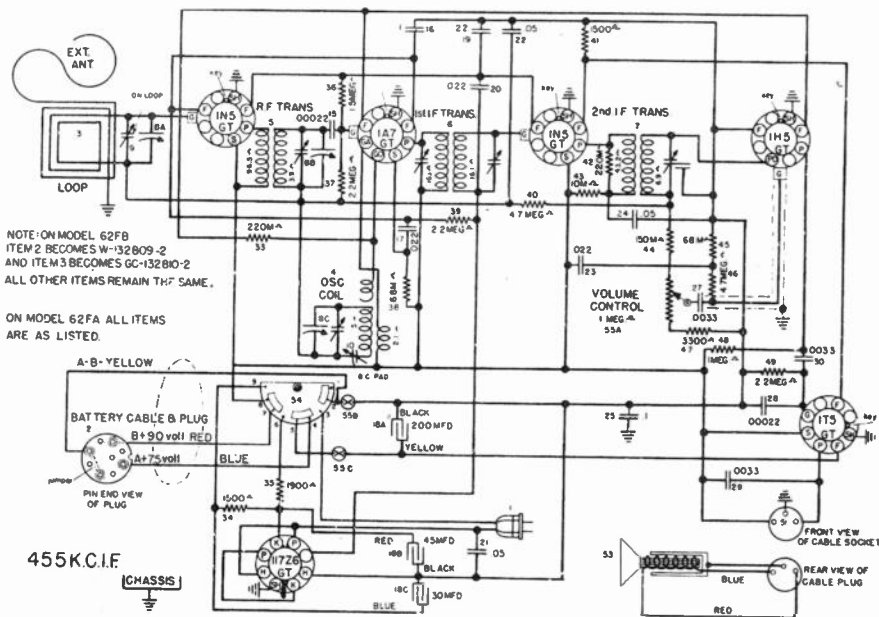
**TUBE LAYOUT**



**TRIMMER LOCATIONS**



**WIRING DIAGRAM**



## PARTS LIST — MODELS 62-FA AND 62-FB

Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-3	A. C. Cable & Plug	42	39002-G23	Res. 220,000 Ohm. 1/4 W.
2	132809-1	Battery Cable & Plug (62 FA)	43	39002-G13	Res. 10,000 Ohm. 1/4 W.
3	132809-2	Battery Cable & Plug (62 FB)	44	39002-G20	Res. 150,000 Ohm. 1/4 W.
4	132810-1	Loop & Back Assem. (62 FA)	45	39002-G18	Res. 68,000 Ohm. 1/4 W.
5	132810-2	Loop & Back Assem. (62 FB)	46	39002-G29	Res. 4.7 Megohm 1/4 W.
6	32002-G275	Osc. Coil	47	39002-G10	Res. 3300 Ohm. 1/4 W.
7	32001-G119	R. F. Transformer	48	39002-G25	Res. 1. Megohm 1/4 W.
8	32004-G285	1st I. F. Trans.	49	39002-G27	Res. 2.2 Megohm 1/4 W.
9	32004-G286	2nd I. F. Trans.	50		
8A	132759-1	Var. Cond. Ant. Sec.	51	132822-2	Speaker Cable & Socket
8B		Var. Cond. R. F. Sec.	52		
8C		Var. Cond. Osc. Sec.	53		
9	132267-1	Trimmer Cond.		L-132731	Speaker Assem.
10	132267-2	Trimmer Cond.		132670-2	Speaker Only
11				132546-1	Speaker Brkt. L. H.
12				132329-1	Speaker Brkt. R. H.
13				132820-1	Speaker Gasket
14				49853	Speaker Grommet
15	39004-G9	Cond. .00022 Mfd.		132725-1	Speaker Bushing
16	39001-G67	Cond. .1 Mfd. 200 V.	54	49772-3	Function Switch
17	39001-G63	Cond. .022 Mfd. 200 V.	55A	130520-3	Volume Control
18A			55B		Power Switch
18B			55C		Power Switch
18C	132501-1	Cond. 200 Mfd. 30 V. Elect.		132686-1	Cabinet (62 FA)
19		Cond. 45 Mfd. 200 V. Elect.		132687-1	Carton (62 FA)
20	39001-G69	Cond. .22 Mfd. 200 V.		132816-1	Cabinet (62 FB)
21	39001-G63	Cond. .022 Mfd. 200 V.		132817-1	Carton (62 FB)
22	39001-G65	Cond. .05 Mfd. 200 V.		132127-1	Knob (3)
23	39001-G65	Cond. .05 Mfd. 200 V.		49211	Cabinet Protector (3)
24	39001-G63	Cond. .022 Mfd. 200 V.		132231-10	Dial Face Assem. (62 FA)
25	39001-G65	Cond. .05 Mfd. 200 V.		132231-11	Dial Face Assem. (62 FB)
26	39001-G67	Cond. .1 Mfd. 200 V.		132320-1	Dial Pointer
27	39001-G10	Cond. .0033 Mfd. 600 V.		132648-1	Screw Dial
28	39004-G9	Cond. .00022 Mfd.		132688-1	Dial Lens (62 FA)
29	39001-G10	Cond. .0033 Mfd. 600 V.		132708-2	Dial Lens (62 FB)
30	39001-G10	Cond. .0033 Mfd. 600 V.		48200	Trimount Stud—Dial Lens
31				132124	Trimount Stud—Loop & Back
32				132812-1	Instructions
33	39002-G21	Res. 220,000 Ohm. 1/4 W.		132709	Grille Cloth
34	39002-G8	Res. 1500 Ohm. 1/4 W.		132830-1	Screw—Dial Mtg. (62 FA)
35	132502-1	Res. 1900 Ohm. Candohm.		132668-1	Screw—Dial Mtg. (62 FB)
36	39002-G26	Res. 1.5 Megohm 1/4 W.		132641-1	Drive Shaft
37	39002-G27	Res. 2.2 Megohm 1/4 W.		49820-B	Retaining Spring
38	39002-G18	Res. 68,000 Ohm. 1/4 W.		131930	Drive Shaft Bearing
39	39002-G27	Res. 2.2 Megohm 1/4 W.		132123	Tube Socket
40	39002-G29	Res. 4.7 Megohm 1/4 W.		131717	Socket—Batt. Cable
41	39002-G8	Res. 1500 Ohm. 1/4 W.		132167-6	Drive Cord Assem.
				132490-2	Junction Block

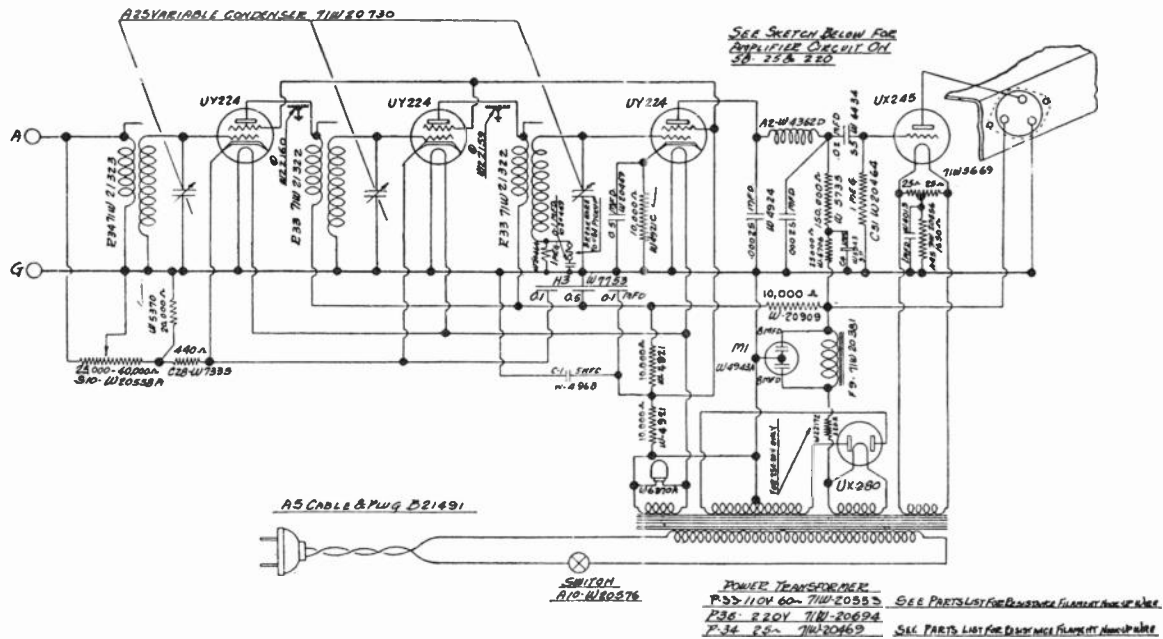
**ALIGNMENT PROCEDURE**

SIGNAL GENERATOR		Volume Control on full Output meter connected to Plate and Screen of 1T5GT			
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	"OSC." Series Pad	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 7.5 volts, .05 Amp.; "B" Battery drain @ 90 V., 12.5 M. A.; Power consumption @ 117.5 volts line — 22 Watts

# Model 58



## CROSLEY Twice Tested SERVICE PARTS

**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

Qty.	Part No.	Description	Qty.	Part No.	Description
1	W-21569	Chassis	<b>PARTS UNDER CHASSIS</b>		
3	W-7873	Socket (5 Prong)	1	W-5669	25 .25 ohm Resistance
2	W-7871	Socket (4 Prong)	1	W-20550	1650 ohm Resistance
1	W-21518	Spoker Socket	1	W-5943	.1 Mfd. Fixed Condenser
4	W-7874	Socket Guide	2	W-4924	.00025 Mfd. Fixed Condenser
1	W-21297	Socket Guide (280)	1	W-4362	Plate Choke
1	W-20683	Terminal Board (A. G. & Ph.)	1	W-6434	.02 mfd. Fixed Condenser
1	W-20558	Volume Control	1	W-4013	1. mfd. Fixed Condenser
1	W-20381	Filter Choke	1	W-20440	.5 -.1 mfd. Fixed Condenser
1	W-4943	Meshon Condenser	1	W-7753	1 -.5 -.1 mfd. Fixed Condenser
2	W-5033	Condenser Clamp	1	W-4968	.5 mfd. Fixed Condenser
1	W-4946	Condenser Cap	1	W-21955	3250 ohm Candohm Resistance (2 Section)
1	W-20730	Variable Condenser Gang	1	W-21956	3160 ohm Candohm Resistance
1	W-22090	Dial Light Bracket Assembly	1	W-22043	Mounted Resistor Assembly
1	W-22095	Dial Drum Assembly	1	W-20009	Mounting Strip
1	W-22094	Dial Indicator Cover	1	W-5735	150,000 ohm Resistor
1	W-20077	Dial Band	1	W-5370	20,000 ohm Resistor
2	W-21222	R. F. Transformer	1	W-4706	25,000 ohm Resistor
1	W-21223	R. F. Transformer (Antenna)	1	W-22082	Mounted Resistor Assembly
3	W-21739	Grid Connector	1	W-20090	Mounting Strip
3	W-21257	R. F. Coil Shield	1	W-4921	10,000 ohm Resistor
1	W-20576	Power Switch	2	W-20404	1 Meg. Resistor
1	W-22025	Power Transformer (110 V. 60 Cycle)	1	W-7335	440 Ohm Resistor
2	W-21507	Tie Straps	1	B-21491	Cable
1	C-20871	R. F. Shield	1	C-20872	Chassis Bottom
			1	W-20873	Bottom Bracket
			2	W-20482	Knob
				W-7947	Knob Spring

# A. M. ALIGNMENT PROCEDURE FOR MODEL 59 CHASSIS USED IN 22CA-22CB, AND 22CP RECEIVERS

**Preliminary**

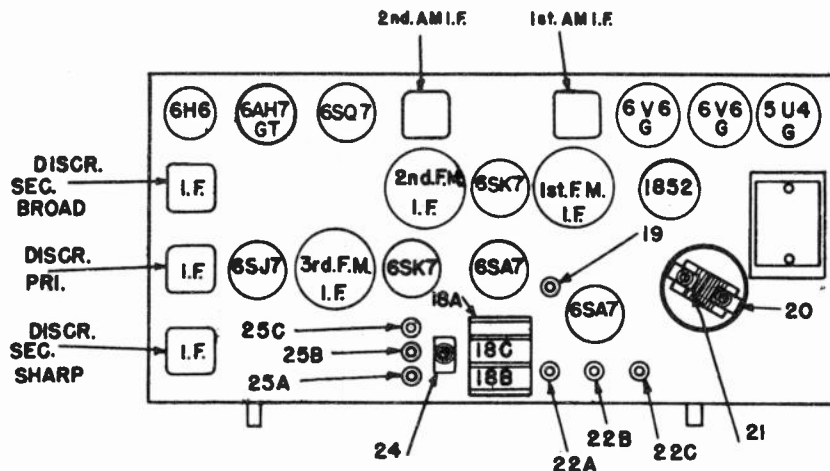
Output Meter Connections.....Plate to Plate of 6V6's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Master Tone Control.....All Buttons Out

## A. M. ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	456 Kc.	Stator lug Middle section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer 25-C	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer 24	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. Loop 22-C	Adjust for maximum output do not touch B. C. Osc. Trimmer.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC" 25-B	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0 on dial	Pol "ANT" Trimmer 22-B	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC" 25-A	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18 on dial	S. W. "ANT" Trimmer 22-A	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).



# F.M. ALIGNMENT PROCEDURE FOR MODEL 59 CHASSIS USED IN 22CA-22CB, AND 22CP RECEIVERS

**EQUIPMENT NECESSARY:** 1 modulated signal generator accurately calibrated and an output meter.

1. Connect output meter from plate to plate 6V6's.
2. Remove F. M. oscillator tube—6SA7 to right of gang.
3. Connect generator input to #4 pin of 6SJ7 F. M. limiter tube and generator ground to chassis.
4. Set generator to exactly 13.6 megacycles (AM signal with 400 cycle modulation).
5. Turn function switch to FM2.
6. Adjust the discriminator primary and secondary (broad) for peak.
7. Set generator to exactly 13.7 megacycles.
8. Adjust discriminator secondary (broad) for null (minimum reading on output meter). This null is very sharp and one peak will be considerably higher than the other.
9. Adjust discriminator primary until uniform peaks are obtained by shifting generator alternately from 13.6 to 13.8 MC, and carefully noting output meter readings.
10. Set generator to exactly 13.7 MC and note null point reading on output meter. Then turn function switch to FM1 (sharp) and adjust discriminator secondary (sharp) to null point. This adjustment is necessary to assure that FM1 and FM2 positions have same cross-over point.

**NOTE:** The relative height of peaks on FM1 is somewhat less than the FM2 position as can be noted by comparing with readings obtained in operation 9.

### IF ALIGNMENT

1. Connect generator output to #4 pin of second I-F 6SK7 amplifier.
2. While shifting generator from 13.6 to 13.8 MC, adjust 3rd FM I-F primary and secondary for maximum gain and EQUAL PEAKS.
3. Connect generator output to #4 pin of 1st I-F 6SK7.
4. Follow same procedure outlined in step #2, using just enough output to give a reasonable indication on meter.

5. Clip generator output to 3rd terminal on antenna board and adjust 1st FM I-F primary and secondary, following same procedure as in step #2, using just enough input to give a reasonable indication on meter.

### F. M. R-F ALIGNMENT

#### (a) Check Dial Calibration

1. Leave generator output connected to antenna—replace FM oscillator 6SA7.
2. Set generator to exactly 12.5 MC (fourth harmonic is 50 MC). Tune in 50 MC signal on dial, null between peaks.
3. Set generator to 10.5 MC (fourth harmonic—42 MC). Tune in 42 MC signal on dial, null between peaks. Correct dial calibration by bending osc. plate on gang.

#### (b) Set Generator to 11.5 MC (fourth harmonic—46 MC).

4. Remove dipole shorting clip (not on all models) and ground #2 dipole lug. Place a 100 ohm carbon resistor between terminals #2 and #3.
5. Connect signal generator output to #3 terminal.
6. Tune dial to either of signal peaks (not null).
7. Turn FM antenna primary trimmer, item 20, all the way in.
8. Adjust FM antenna secondary trimmer, item 21, for peak.
9. Repeak FM antenna primary.
10. Check at 42 MC (Gen. 12.5 MC), 50 MC (Gen. 12.5 MC), output meter readings should be approximately the same over band, with slight humps on ends.

**NOTE:** If there is an appreciable variation between readings on the output meter on the frequencies in step #10, carefully repeat complete R-F alignment.

**NOTE:** If some receivers oscillate at one end of dial and not at the other end, it is possible that the red lead (top) on the FM oscillator coil is too close to the secondary side. This lead should be dressed down toward the chassis and closest to the grounded end of oscillator coil, using top as reference point.

## TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS)  
WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER

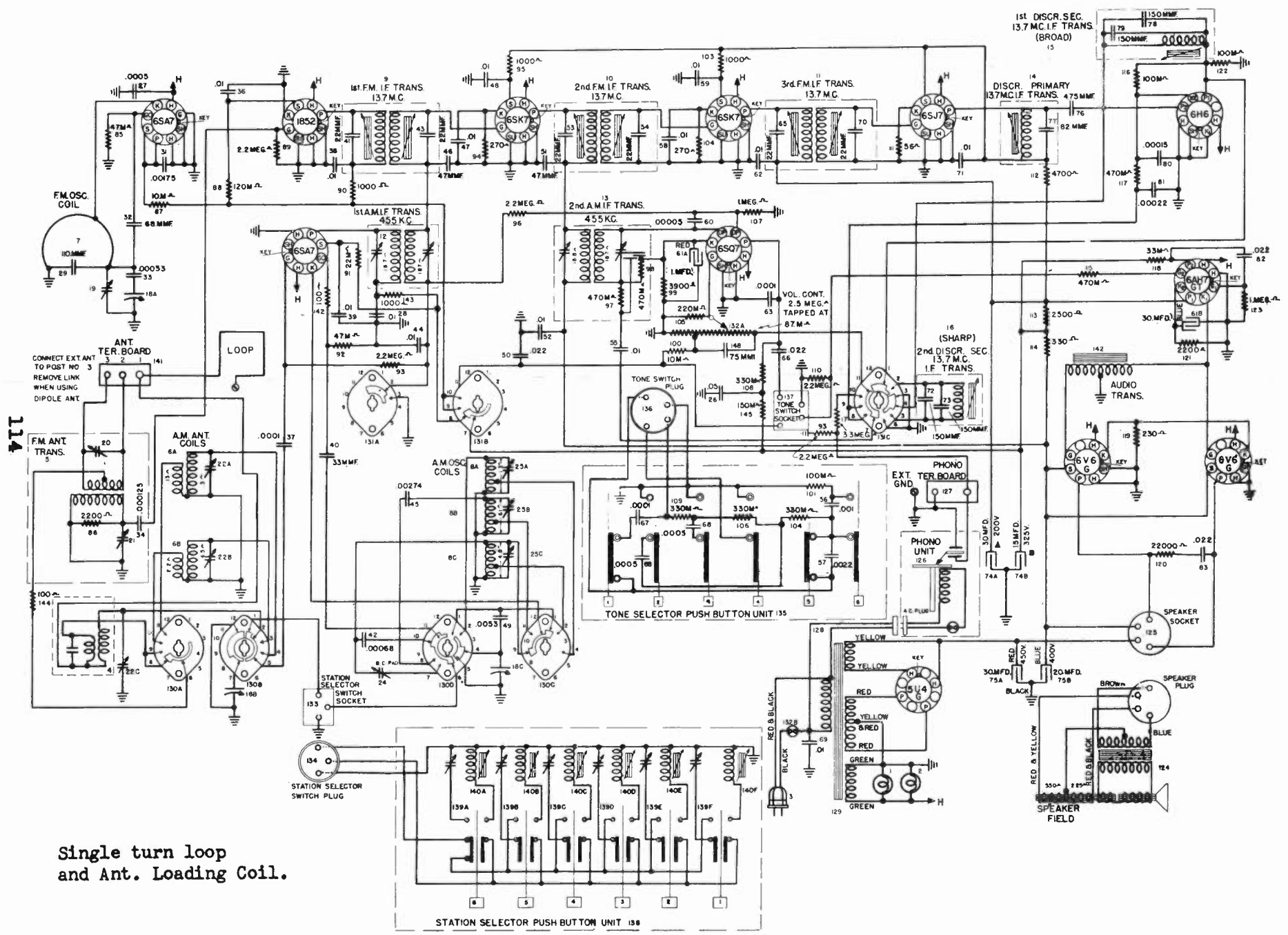
TUBE	FUNCTION	1	2	3	4	5	6	7	8	POSITION OF FUNCTION SW
6SA7	Oscillator	Gnd	Gnd	290	100	—8	0	6.3	0	A. M.
6SA7	Converter—A. M.	Gnd	Gnd	260	260	—2	0	6.3	Gnd	F. M. 1 or 2
6AC7	Det.—1st F. M.	Gnd	Gnd	Gnd	—8	Gnd	85	6.3	260	F. M. 1 or 2
6SK7	I. F. Amp. (A. M. 1st FM)	Gnd	Gnd	Gnd	0	3	100	6.3	300	A. M.
6SK7	I. F. Amp. 2nd F. M.	Gnd	Gnd	Gnd	0	3	100	6.3	190	F. M. 1 or 2
6SJ7	Limiter F. M.	Gnd	Gnd	Gnd	0	.5	200	6.3	100	F. M. 1 or 2
6H6	Discriminator	Gnd	Gnd	—5(FM)	+5(AM)	—5(FM)	J.B.	6.3	Gnd	Note range settings for 3, 4 & 5
6SQ7	Det. A. M.—1st A. F.	Gnd	0	1	.4	0	140	6.3	Gnd	F. M. or A. M.
6AH7GT	2nd A. F. Driver	0	2	195	7	0	160	6.3	Gnd	F. M. or A. M.
6V6	Output	Gnd	Gnd	330	310	2	N.C.	6.3	20	F. M. or A. M.
6V6	Output	Gnd	Gnd	330	310	2	N.C.	6.3	20	F. M. or A. M.
5U4	Rectifier	N.C.	400	J.B.	360AC	J.B.	360AC	J.B.	400	

MAX. POWER OUTPUT..... 15 WATTS  
 POWER CONSUMPTION..... 120 WATTS  
 DROP ACROSS SPEAKER FIELD..... 80 VOLTS

J. B.—Junction Block. N. C.—No Connection.

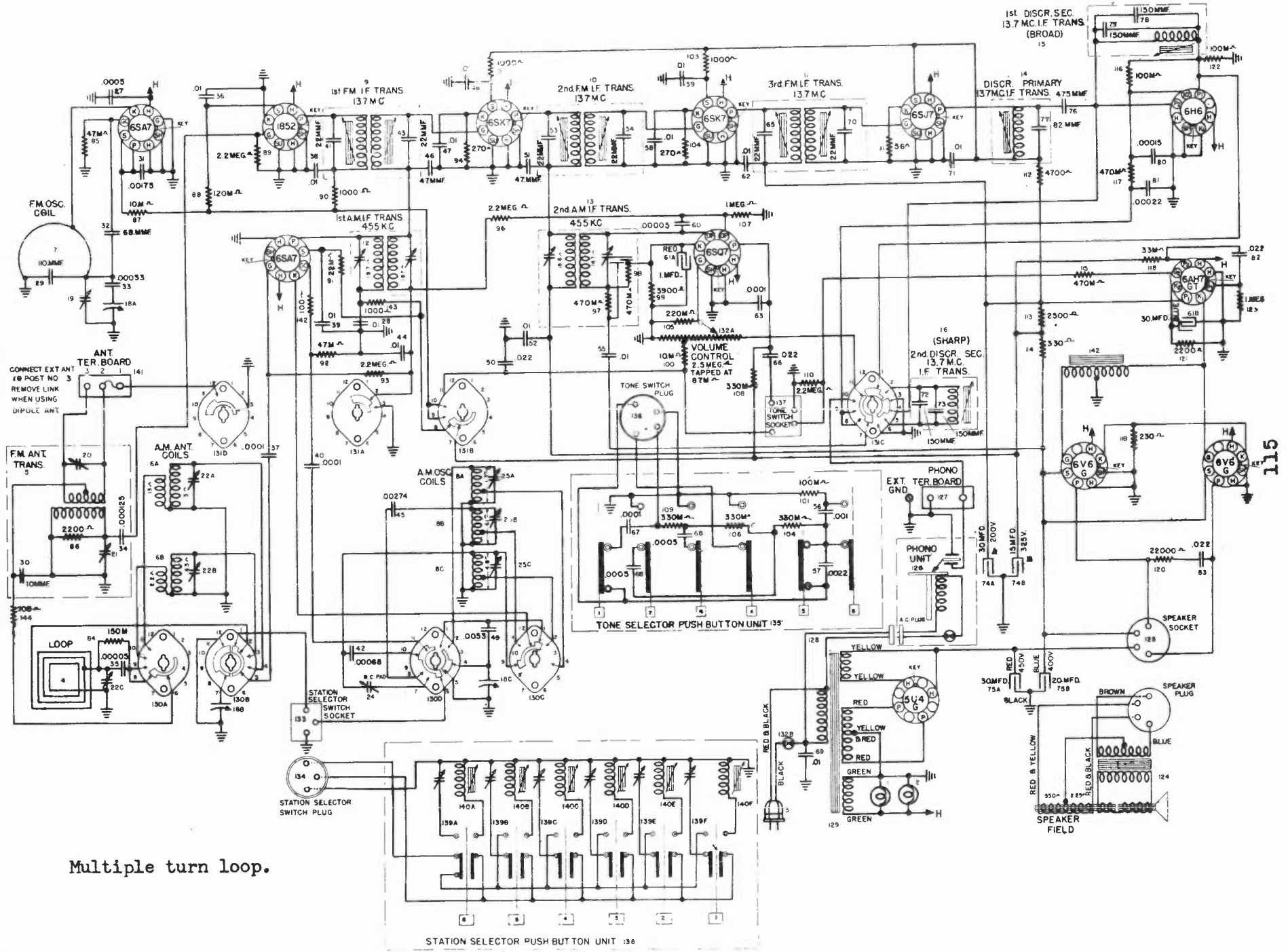
Voltages may vary 10% of values given.





Single turn loop and Ant. Loading Coil.

MODELS 22CA, 22CB, 22CP



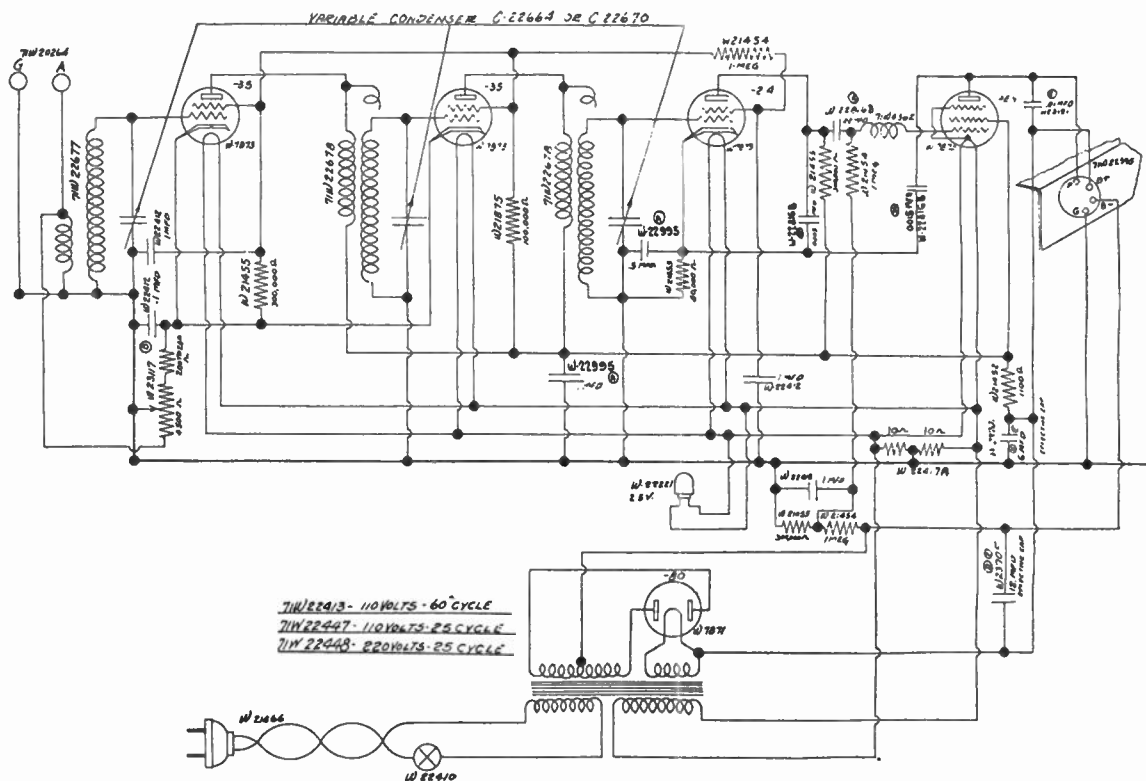
Multiple turn loop.

PARTS LIST, MODELS 22CA-CB-CP—CHASSIS MODEL No. 59

Figures in first column refer to parts in Diagrams.

ITEM No.	PART No.	DESCRIPTION	ITEM No.	PART No.	DESCRIPTION
1	48885	Dial Light 6 V.	97	39002-23	Res. 470,000 Ohm 1/2 W.
2	48885	Dial Light 6 V.	98	39002-23	Res. 470,000 Ohm 1/2 W.
	132343-6	Escutcheon & Lens.	99	132514-1	Res. 3900 Ohm 1/4 W.
	132344-1	Lens.	100	39002-13	Res. 10,000 Ohm 1/4 W.
	132347-1	Gasket.	101	39002-19	Res. 100,000 Ohm 1/4 W.
	132350-1	Dial Pointer.	102	39002-22	Res. 330,000 Ohm 1/4 W.
	132351-5	Dial Face Assem.	103	39002-7	Res. 1000 Ohm 1/4 W.
	48899	Screw—Dial Face Mtg. (2)	104	132572-1	Res. 270 Ohm 1/4 W.
	49337-22	Light Socket Assem.	105	39002-21	Res. 220,000 Ohm 1/4 W.
	132147-4	Drive Cord Assem.	106	39002-22	Res. 330,000 Ohm 1/4 W.
	132584-1	Tuning Shaft Assem.	107	39002-25	Res. 1. Megohm 1/4 W.
	49786-1	Drive Shaft Br'g.	108	39002-22	Res. 330,000 Ohm 1/4 W.
	132005-1	Drive Shaft Br'k't.	109	39002-22	Res. 330,000 Ohm 1/4 W.
	132200-3	A. C. Power Plug & Cable.	110	39002-27	Res. 2.2 Megohm 1/4 W.
	133760-3	Antenna Coil or G243-32000 Coil.	111	132575-1	Res. 56 Ohm 1/4 W.
	32000-239	F. M. Ant. Trans. Assem.	112	132573-1	Res. 4700 Ohm 1 W.
3A	32000-238	(A.M. Ant. Coil H. F.	113	132576-1	Res. 2500 Ohm 4 W. Carbon.
3B		(A.M. Ant. Coil Pol.	114	132574-1	Res. 380 Ohm 2 W. Carbon.
4	132583	F. M. Osc. Coil Assy.	115	39002-23	Res. 470,000 Ohm 1/4 W.
5A	32002-265	A. M. Osc. Coil H. F.	116	132579-3	Res. 100,000 Ohm Ceramic.
5B		A. M. Osc. Coil Pol.	117	39002-23	Res. 470,000 Ohm 1/4 W.
5C		(Coil B. C.	118	39002-16	Res. 33,000 Ohm 1/4 W.
6	32004-279	1st F. M. I. F. Trans.	119	132593-1	Res. 230 Ohm 2.5 W. Car.
7	32004-279	2nd F. M. I. F. Trans.	120	132577-1	Res. 22,000 Ohm 3 W. Carbon.
8	32004-279	3rd F. M. I. F. Trans.	121	39002-9	Res. 2200 Ohm 1/4 W.
9	32004-277	1st A. M. I. F. Trans.	122	132579-3	Res. 100,000 Ohm Ceramic.
10	32004-278	2nd A. M. I. F. Trans.	123	39002-25	Res. 1 Megohm 1/4 W.
11	32004-280	Discr. Primary F. Trans.	124	132348-7	Speaker.
12	32004-281	1st Discr. Sec. I. F. Trans.	45580-A	Grommet (4) Spkr. Mtg.	
13	32004-281	2nd Discr. Sec. I. F. Trans.	37953	Flat Washer (4) Spkr. Mtg.	
14	39002-28	Res. 3.3 Megohm 1/4 W.	N-8	Nut (4) Spkr. Mtg.	
15	132296-3	Var. Cond. F. M. Section.	L-8	Lock Washer (4) Spkr. Mtg.	
16A		Var. Cond. A. M. Ant. Section.	131512	Headed Bushing (4) Spkr. Mtg.	
16B		Var. Cond. A. M. Osc. Section.	28907-103	Speaker Socket.	
17	132823-1	F. M. Osc. Trimmer Cond.	132467	Phono Unit Assem.	
18	49934	F. M. Ant. Pri. Trimmer.	26719-65	Phono Ter. Board.	
19	131756-3	F. M. Ant. Sec. Trimmer.	128	Phono A. C. Cable.	
20	132396-1	(A. M. Ant. Trimmer H. F.	129	Power Trans.	
21		(A. M. Ant. Trimmer Pol.	130a.	Band Switch Ant. Sec.	
22A		Trimmer A. M. B. C. Loop.	130b.	Band Switch Ant. Sec.	
22B			130c.	Band Switch Osc. Sec.	
22C			130d.	Band Switch Osc. Sec.	
23	49952-1	B. C. Padder Cond.—600 Kc.	131a.	Function Switch A.M. I. F.	
24	132396-1	Trimmer H. F. Osc.	131b.	Function Switch F. M. I. F.	
25A		Trimmer Pol. Osc.	131c.	Function Switch F. M. & Phono.	
25B		Trimmer B. C. Osc.	131d.	Function Switch F. M. Ant.	
25C		Trimmer 58 Mf. 400 V. Paper.	132A	Volume Control.	
26	39001-41	Cond. .005 Mf. 600 V. Paper.	132B	(A. C. Power Switch.	
27	39001-3	Cond. .005 Mf. 600 V. Paper.	133	Station P. B. Cable Socket.	
28	132527-1	Cond. .01 Mf. Bakelite.	134	Station P. B. Unit Cable.	
29	132521-2	Cond. .110 Mmf. Ceramic.	135	Tone Push Button Unit.	
30	34007-7	Cond. .00175 Mf. Mica.	136	Tone Switch Plug & Cable.	
31	132523-2	Cond. 68 Mmf. Ceramic.	137	Tone Switch Cable Socket.	
32	132591-8	Cond. .0033 Mf. Ceramic.	138	Station Push Button Unit.	
33	132591-6	Cond. .000125 Mf. Ceramic.	139A	Trimmer Cond.	
34			139B	Trimmer Cond.	
35	132627-1	Cond. .01 Mf. Bakelite.	139C	Trimmer Cond.	
36	39004-1	Cond. .0001 Mf. Mica.	139D	Trimmer Cond.	
37	132627-1	Cond. .01 Mf. Bakelite.	139E	Trimmer Cond.	
38	132627-1	Cond. .01 Mf. Bakelite.	139F	Trimmer Cond.	
39	39004-4	Cond. .100 Mmf. Mica.	140A	Osc. Coil.	
40	132591-3	Cond. 22 Mmf. Ceramic.	140B	Osc. Coil.	
41	34005-37	Cond. 680 Mmf. Mica.	140C	Osc. Coil.	
42	132591-3	Cond. 22 Mmf. Ceramic.	140D	Osc. Coil.	
43	132627-1	Cond. .01 Mf. Bakelite.	140E	Osc. Coil.	
44	34005-25	Cond. 2740 Mmf. Mica.	140F	Osc. Coil.	
45	132591-4	Cond. 47 Mmf. Ceramic.	141	Ant. Ter. Board.	
46	132627-1	Cond. .01 Mf. Bakelite.	142	Input Trans.	
47	132627-1	Cond. .01 Mf. Bakelite.	143	Res. 1000 Ohm 1/4 W.	
48	34005-34	Cond. 6300 Mmf. Mica.	144	Res. 100 Ohm 1/4 W.	
49	39001-63	Cond. .022 Mf. 600 V.	145	Res. 150 Ohm 1/4 W.	
50	132591-4	Cond. 47 Mmf. Ceramic.	39002-20	Res. 2.2 Megohm 1/4 W.	
51	132627-1	Cond. .01 Mf. Bakelite.	39002-27	Res. 3.3 Megohm 1/4 W.	
52	132591-3	Cond. 22 Mmf. Ceramic.	132531-1	Cabinet 22CA.	
53	132591-3	Cond. 22 Mmf. Ceramic.	132612-1	Cabinet 22CB	
54	132627-1	Cond. .01 Mf. Bakelite.	132532-1	Cabinet 22CP	
55	39001-7	Cond. .001 Mf. 600 V. Paper.	132613-1	Carton 22CA.	
56	39001-9	Cond. .0022 Mf. 900 V. Paper.	132613-1	Carton 22CB.	
57	132627-1	Cond. .01 Mf. Bakelite.	132715-1	Carton 22CP.	
58	132627-1	Cond. .01 Mf. Bakelite.	132371-1	Screw—Chassis Mtg. (4) 22CA, CB & CP.	
59	39004-5	Cond. 50 Mmf. Mica.	44725	Flat Washer—Chassis Mtg. (4) 22CA, CB & CP.	
60	132673-2	(Cond. 30 Mfd. Electro.	132323-2	Mtg. Spring Bottom (4) 22 CA, CB & CP.	
61A		(Cond. 1 Mfd. Electro.	132322-1	Mtg. Spring Top (4) 22 CA, CB & CP.	
61B		(Cond. .01 Mf. Bakelite.	132393-1	Knob (2) 22 CA-CB-CP.	
62	39004-7	Cond. 100 Mmf. Mica.	132341-1	Knob Large (2) CA-CB-CP.	
63	39001-5	Cond. .0005 Mf. 600 V.	132398-1	Cabinet Protector.	
64	132591-3	Cond. 22 Mmf. Ceramic.	131411-1	Knob Spring.	
65	39001-15	Cond. .022 Mf. 600 V.	132425	Push Switch Assem.	
66	39001-1	Cond. 100 Mmf. 600 V.	132456	Tone Switch Assem.	
67	39001-6	Cond. .0005 Mf. 600 V.	132396-1	Push Button.	
68	39004-8	Cond. .01 Mf. 120 V. A. C.	132397-1	Tone Button.	
69	132591-3	Cond. 22 Mmf. Ceramic.	132397-2	Tone Button.	
70	132627-1	Cond. .01 Mf. Bakelite.	132397-3	Tone Button.	
71	132591-7	Cond. 150 Mmf. Ceramic.	132397-4	Tone Button.	
72	132591-7	Cond. 150 Mmf. Ceramic.	132397-5	Tone Button.	
73	132591-7	Cond. 150 Mmf. Ceramic.	132397-6	Tone Button.	
74A	132671-1	(Cond. 30 Mfd. 200 V. Electro.	50628-A	Button Springs (12).	
74B		(Cond. 15 Mfd. 325 V. Electro.	132478-2	Envelope Assem. 22CA-CB.	
75A	132570-1	Cond. 20 Mfd. 450 V. Electro.	132478-4	Envelope Assem. 22CP.	
75B		Cond. 20 Mfd. 400 V. Electro.	134232-1	Di-Pole Antenna.	
76	132591-1	Cond. 4.75 Mmf. Ceramic.	134215-1	Instruction Envelope.	
77	132591-5	Cond. 82 Mmf. Ceramic.	43552	Speaker Plug Retainer Clamp.	
78	132591-7	Cond. 150 Mmf. Ceramic.	46808	# 8 x 1/4 P. K. Screw.	
79	132591-7	Cond. 150 Mmf. Ceramic.	133174	Record Chgr. Assem. 22CP.	
80	39004-9	Cond. 150 Mmf. Mica.	132472-2	Hinge Roller (2).	
81	39001-3	Cond. 220 Mmf. 600 V. Paper.	6096	Hinge Roller Stud (2).	
82	39001-15	Cond. .022 Mf. 600 V. Paper.	132463-1	Hinge Assem. R. H.	
83	39001-63	Cond. .022 Mf. 200 V. Paper.	132463-2	Hinge Assem. L. H.	
84	132579-1	Res. 47,000 Ohms Ceramic.	132637-1	Slide Rail (3).	
85	39002-9	Res. 2200 Ohms 1/4 W.	131133	Screw (9) Slide Rail.	
86	132578-1	Res. 10,000 Ohms 5 W.	132850-1	Screw (8) Hinge Assem.	
87	36320	Res. 120,000 Ohms 1/4 W.	132454-5	Record Changer Cable.	
88	132579-2	Res. 2.2 Megohm Ceramic.	134050	Cabinet Back.	
89	39002-7	Res. 1000 Ohms 1/4 W.	5-80	Screw (5) Cabinet Back.	
90	132577-1	Res. 22,000 Ohms 3 W.	134531	Complete Fold. Brkt. for Radio Comp. Door.	
91	39002-17	Res. 47,000 Ohms 1/4 W.	132434-1	Station Call Letters.	
92	39002-27	Res. 2.2 Megohms 1/4 W.	132399-1	Call Letter Covers.	
93	132573-1	Res. 270 Ohms 1/4 W.			
94	39002-7	Res. 1000 Ohms 1/4 W.			
95	39002-27	Res. 2.2 Megohm 1/4 W.			

# Model 59



## GROSLY *Twice Tested* SERVICE PARTS

### PARTS LIST, MODEL 59

Qty.	Part No.	Description
1	W-22413	Power Trans. 110 v. 60 cycle
1	W-21459	Mershon Cond. 8 mfd.
1	W-22689-A	Mershon Cond. 12 mfd.
1	W-22664	Tuning Cond. Gang
1	W-22410	Switch
1	W-23117	Volume Control
1	W-22995	Fixed Cond. .5 - .1 mfd.
1	W-22677	R.F. Trans. (Ant)
2	W-22678	R.F. Trans. (Int)
3	W-7558-A	R.F. Coil Shields
1	W-4362	R.F. Plate Choke

# CHASSIS MODEL 60

## ALIGNMENT PROCEDURE

### Preliminary

Output Meter Connections..... Plate to Plate of 6AC5G's  
 Generator Ground Connection..... To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1600 Kc.	Ant. Lead (Red)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Lead (Red)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Red)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Red)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Red)	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Red)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Red)	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

#### SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.) PIN NUMBER

TUBE FUNCTION	1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier .....	GND	GND	0	0	59	6.3 NC	217	
6SA7—Converter .....	GND	217	59	0	3.0 B.C.O.-S.W.	6.3 NC	0	
6J5GT—Oscillator .....	GND	217	0	0	0	6.3 NC	0	
6SK7—I. F. Amplifier.....	GND	GND	0	GND	59	6.3 NC	204	
6SQ7—Det. A. V. C. 1st A. F.....	GND	0	0	0	74	6.3 NC	GND	
6J5GT—Phase Inverter .....	GND	0	153	J. B.	0	6.3 NC	3.5	
6J5GT (2)—P. P. A. F. Drivers.....	GND	GND	217	J. B.	0	6.3 NC	8.5	
6AC5GT(2)—P. P. Output.....	GND	GND	305	0	8.5	6.3 NC	GND	
5Y3G—Rectifier .....	NC	310	0	308 AC	0	308 AC	5 AC	0

MAX. POWER OUTPUT @ 117.5 V. LINE.....8.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE.....80 Watts  
 DROP ACROSS SPEAKER FIELD .....90 Volts

J.B.—JUNCTION BLOCK.

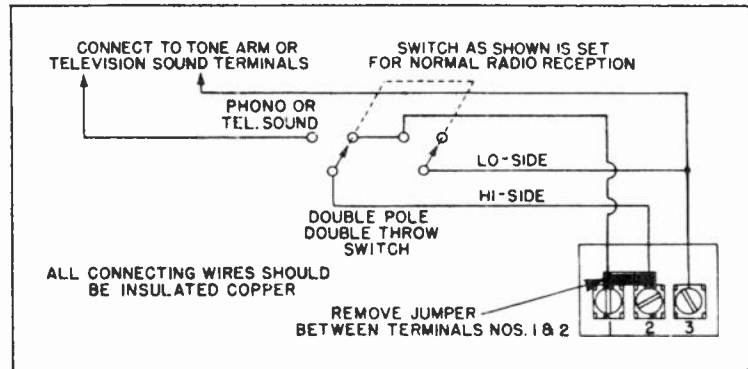
Voltages may vary 10% of values given.

N.C.—NO CONNECTION.

## MODEL CA12

### PHONO CONNECTIONS

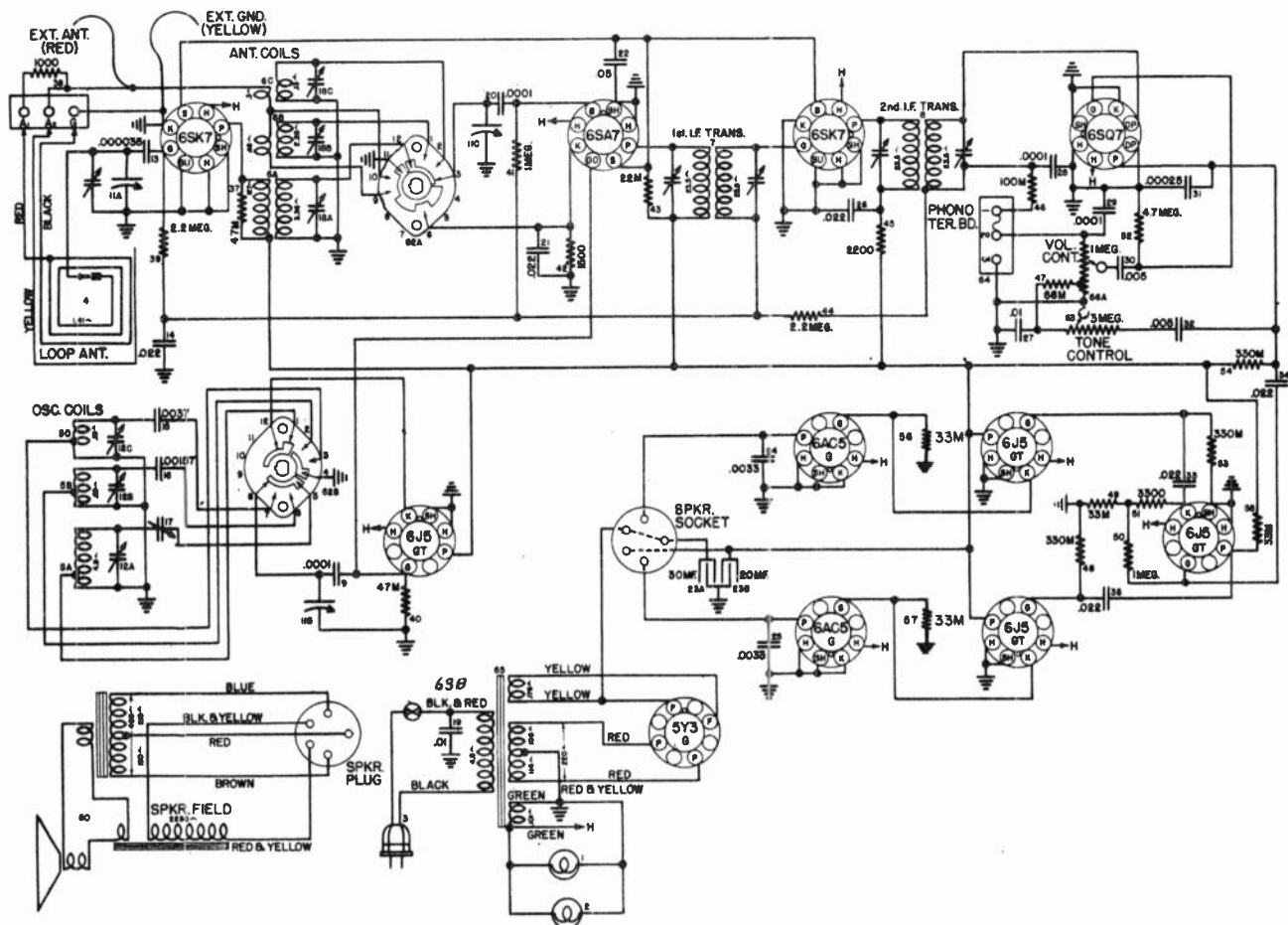
This chassis is so constructed as to be adaptable to a phonograph pick-up (high impedance type) for the reproduction of recordings. The terminals may also be used for the reproduction of television sound as supplied by a suitable television converter unit. The double pole double throw switch for changing from Radio to Phono or television sound, should be connected as shown in the diagram. The terminals are coded as follows: 1, 2, 3, respectively. The No. 2 terminal connects to the high side of the phono pickup or television A-F connections.



**NOTE:** The jumper wire between No. 1 and No. 2 terminals must be removed when phono-radio switch is connected. If phono switch is removed, it is absolutely essential that the jumper wire between No. 1 and No. 2 terminals be replaced. Be sure all connections are tight.

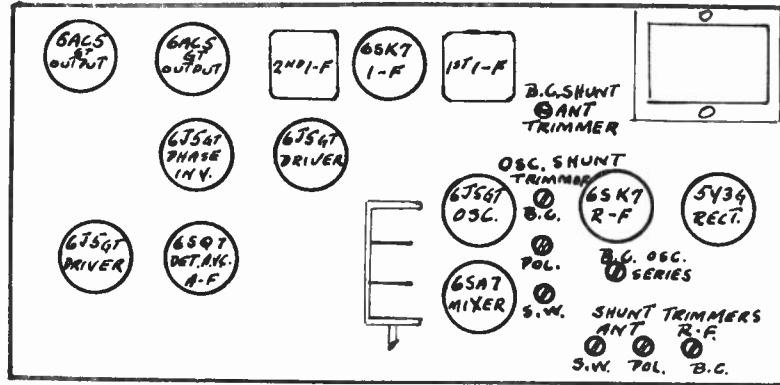
The No. 3 terminal is the ground or low side connection. The No. 1 terminals should be connected to the No. 3 terminals by some means (as indicated in the above diagram). This prevents any radio signals from the receiver proper interfering with the Phono or Television sound reproduction.

### WIRING DIAGRAM, MODEL CA12, CHASSIS MODEL 60



# TUBE AND TRIMMER LAYOUT

## MODEL CA12

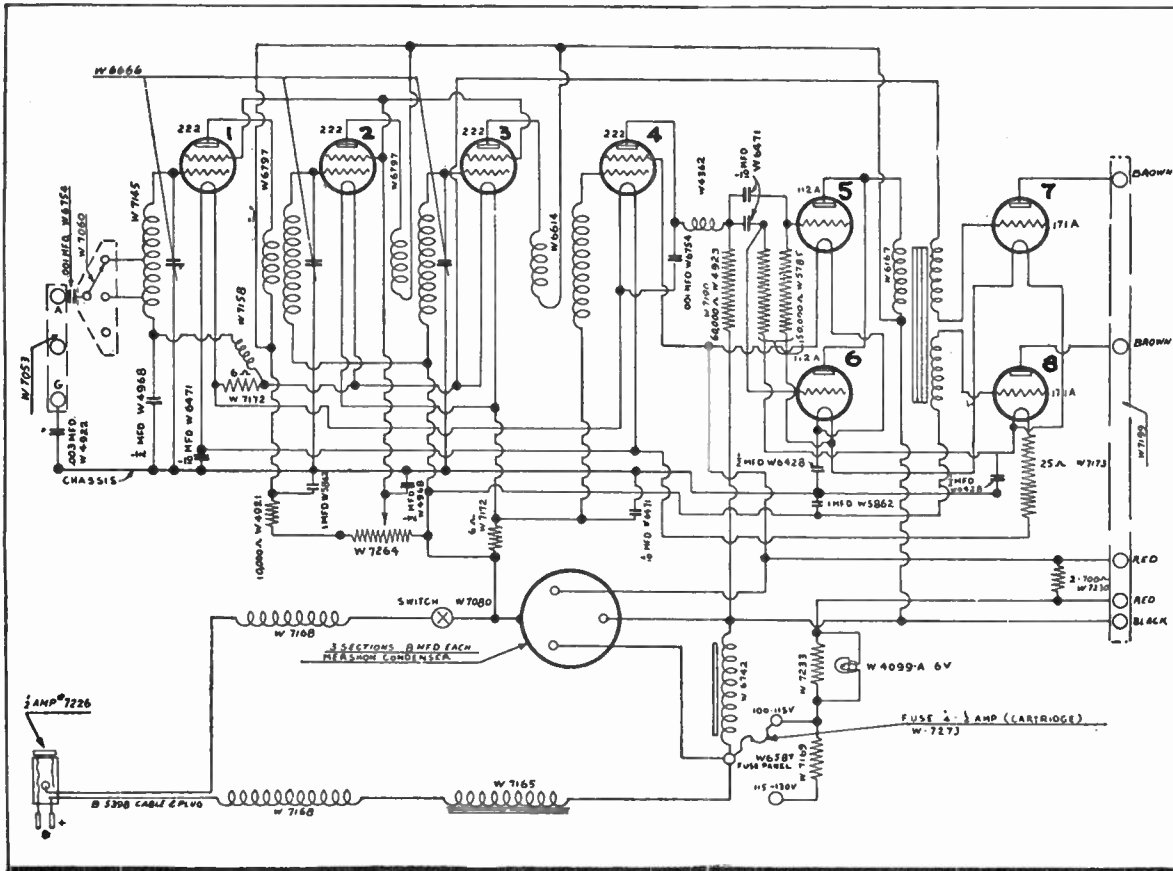


### PARTS LIST — MODEL CA12 — CHASSIS MODEL 60

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb, Dial Light	50	G25 —39002	Res. 1 Meg. Ohm ¼ W. Ins.
2	—49870	Bulb, Dial Light	51	G10 —39002	Res. 3,300 Ohms ¼ W. Ins.
3	—45769A	Socket Assy. (Dial Light)	52	G29 —39002	Res. 4.7 Meg. Ohms ¼ W. Ins.
4	—131969	Cable & Plug (Power)	53	G22 —39002	Res. 330,000 Ohms ¼ W. Ins.
	—131970	Spacer—Loop	54	G22 —39002	Res. 330,000 Ohms ¼ W. Ins.
	—30302	Loop—Wire	55	G16 —39002	Res. 3,300 Ohms ¼ W. Ins.
	—131970	Spacer—Loop (Eccentric)	56	G16 —39002	Res. 3,300 Ohms ¼ W. Ins.
	132084—FS88	Loop Supporting Brkt. (4 Req.)	57	G16 —39002	Res. 3,300 Ohms ¼ W. Ins.
	130433—	Phillips Hd. Screws — Brkt. Mtg.	58	G16 —39002	Res. 3,300 Ohms ¼ W. Ins.
5A	—14762	Screws, Spacer Mtg. (4 Req.)	59		
5B	G252—32002	Coil—B. C. Osc.	60	G1 —131880	Speaker, 12-in
5C		Coil—Pol. Osc.		G103—28807	Socket (speaker)
6A		Coil—H. F. Osc.		—45580	Grommet—Spkr. Mtg.
6B	G231—32000	Coil—B. C. Ant.		—131512	Headed Bushing—Spkr. Mtg.
6C		Coil—Pol. Ant.		—37953	Flat Washer—Spkr. Mtg.
7		Coil—H. F. Ant.		N —8	Hex Nut—Spkr. Mtg.
8	G262—32004	1st I. F. Trans.	61	L —8	Lockwasher—Spkr. Mtg.
9	—49692	Condenser	62A	—131855	Switch, B. C.
10	G262—32004	2nd I. F. Trans.	62B		Switch, B. C.
11A	G2 —32002	Cond. 100 Mmf. Mica	63A	—131853	Tone Control (3 Meg. Ohm)
11B	—131852	Cond. Trim. Ant. Sect.	64	G60 —26719	Terminal Bd. (Phono.)
11C	—131849	Var. Cond. Ant. Sect.	65	—131958	Trans. (Power)
12A		Var. Cond. R. F. Sect.	66	N —5096	#8-32 Hex Nut (Trans. Mtg.)
12B	—131850	Var. Cond. Osc. Ant.		—44773	Vol. Control
12C		Cond. Trim. B. C. Osc.		63B	Switch (Power)
13		Cond. Trim. Pol. Osc.		MG11—131840	Drive Shaft Assy.
14	G13 —34002	Cond. Trim. H. F. Osc.		MG14—131840	Dial Back Assy.
15	G63 —39001	Cond. 35 Mmf. Mica		MG26 —131132	Pointer Assy.
16	G17 —34005	Cond. .002 Mf. 200 V. Paper		—49787A	Drive Shaft Bearing
17	G29 —34005	Cond. 3700 Mmf. Mica		—131151A	Pulley
18A	—131860	Cond. 1570 Mmf. Mica		—131152	Hub
18B	—49720	Cond. Trim. B. C. Series		—131866	Idle Pulley Brkt.
18C		Cond. Trim. B. C. Ant.		—131183A	Dial Pointer Guide Rod
19		Cond. Trim. Pol. Ant.		—131184	Dial Pointer Guide Rod Spring
20	—30605	Cond. Trim. H. F. Ant.		—131965	Dial Background
21	G2 —34002	Cond. .01 Mf. 400 V. Paper		—131868	Dial Glass
22	G63 —39001	Cond. 100 Mmf. Mica		—131194	Drive Spring
23A	G41 —39001	Cond. .022 Mf. 200 V. Paper		—131154	Retainer Spring—Dial Back
23B	—131847	Cond. .05 Mf. 400 V. Paper		G48 —41582	Drive Cord (39-inch)
24		Cond. 30 Mf. 450 V. Elect.		G49 —41582	Drive Cord (21.5-inch)
25	G10 —39001	Cond. 20 Mf. 450 V. Elect.		—131867	Pulley—Dial Back
26	G10 —39001	Cond. .0033 Mf. 600 V. Paper		—35066	Screws—Dial Mtg.
27	G39 —39001	Cond. .0033 Mf. 600 V. Paper		G46 —41582	Guide Cord
28	G61 —39001	Cond. .022 Mf. 400 V. Paper		—131390	Guide Cord Spring
29	G2 —34002	Cond. .01 Mf. 200 V. Paper		—131838A	Cabinet
30	G2 —34002	Cond. 100 Mmf. Mica		—131839	Carton
31	G11 —39001	Cond. 100 Mmf. Mica		—131874	Knob—Tone
32	G1 —34002	Cond. .005 Mf. 600 V. Paper		—131875	Knob—Tuning
33	G11 —39001	Cond. 250 Mmf. Mica		—131876	Knob—Volume
34	G39 —39001	Cond. .005 Mf. 600 V. Paper		—131877	Knob—B. C.—Switch
35	G39 —39001	Cond. .022 Mf. 400 V. Paper		—131910	Escutcheon
36	G39 —39001	Cond. .022 Mf. 400 V. Paper		—28760B	Escutcheon Pin
37	G17 —39002	Res. 47,000 Ohms ¼ W. Ins.		—45579	Flat Washer—Chassis Mtg.
38	G7 —39002	Res. 1,000 Ohms ¼ W. Ins.		—45580A	Rubber Grommet—Chassis Mtg.
39	G27 —39002	Res. 22 Meg. Ohms ¼ W. Ins.		—46460	Headed Bushings—Chassis Mtg.
40	G37 —39002	Res. 47,000 Ohms ¼ W. Ins.		—43885	#8x¾ P. K. Screw—Chassis Mtg.
41	G25 —39002	Res. 1 Meg. Ohm ¼ W. Ins.		—25846	#10x¾ P. K. Screw—Chassis Mtg.
42	G8 —39002	Res. 1,500 Ohms ¼ W. Ins.		—130600	Wing Screw—Chassis Mtg.
43	—131963	Res. 22,000 Ohms ¼ W. Ins.		—130347	Chassis Support Brkt.
44	G27 —39002	Res. 22 Meg. Ohms ¼ W. Ins.		—130348	Chassis Support Brkt.
45	G9 —39002	Res. 2,200 Ohms ¼ W. Ins.		MG 3—131841	Tip Sack Assy.
46	G19 —39002	Res. 100,000 Ohms ¼ W. Ins.		S —159	#8x¾ Wood Screw
47	G18 —39002	Res. 68,000 Ohms ¼ W. Ins.		—42177	Screw—Spkr. to Baffle
48	G22 —39002	Res. 330,000 Ohms ¼ W. Ins.		—43553	Chassis Mtg. Foot
49	G16 —39002	Res. 33,000 Ohms ¼ W. Ins.		—132058	Antenna Board
				G28 —43564	Pulley & Hub Assy.
				—131863	Power Cord Clamp

# Models 60S, 61S, 62S, 63S



Qty.	Part No.	Description	Qty.	Part No.	Description
		<b>Chassis Assembly</b>			<b>Parts Under Chassis</b>
1	D-0006	Chassis Assembly .....	1	W-6387	Fuse Panel Assembly .....
6	W-5538	Sockets .....	1	W-7273	1-2 Amp. Fuse .....
2	W-5544	Sockets .....	1	W-7233	Fixed Resistance (45 ohms)
1	W-5253	Mershon Condenser (3 Sec. 8MFD. Each) .....	1	W-7169	Fixed Resistance (45 ohm)..
1	W-7405	Mershon Condenser Cap .....	2	W-7230	Fixed Resistance (700 ohm)
1	W-7406	Mershon Condenser Screw .....	2	W-7168	Line Chokes .....
1	W-4741	4-36 Sq. Nut .....	1	B-5298	Cable & Plug .....
1	W-4794-A	1-4 in. Sq. Stiffened Sleaving .....	1	7226	Fuse 1-2 Amp .....
2	W-6762	Mounting Clamp .....	1	W-4751-B	Cable Clamp .....
1	W-7165	Filter Choke .....	1	W-7190	Resistance block assembly complete (4 Resistors) .....
1	W-5054	Gromet .....	2	W-6583	Terminal Strip Assembly .....
1	W-7496	Shield .....	2	W-5735	Fixed Resistance (150,000 ohms) .....
1	W-6742	Filter Choke .....	1	W-4921	Fixed Resistance (10,000 ohms) .....
1	W-5654	Gromet .....	1	W-4923	Fixed Resistance (60,000 ohms) .....
1	W-7167	Push Pull Trans. .....	1	W-4362	Plate Choke .....
1	W-5654	Gromet .....	1	W-6754	Fixed Condenser (.001 Mfd.)
1	W-7190	Speaker Terminal Assembly .....	1	W-6428	Fixed Condenser (2-1-2 Mfd.)
1	W-6610	Dial Light Support .....	1	W-7284-B	Volume Control .....
1	W-5750-A	Dial Light Socket .....	2	W-6471	Fixed Condenser (1-10 Mfd.)
1	W-7145	Antenna Coupler Assembly .....	1	W-7173	Fixed Resistance (25 Ohm)...
2	W-6797	R. F. Trans. Assembly .....	2	W-7172	Fixed Resistance (6 Ohm)...
3	W-7272-A	Tube Terminal Connection .....	1	W-6814	R. F. Coupling Choke.....
3	W-6436	Shields .....	1	W-4908	Fixed Condenser (1-2 Mfd.)
3	B-6473	Shield Cover .....	1	W-6471	Fixed Condenser (1-10 Mfd.)
3	W-6474	Shield Cover Nut .....	1	W-7158	R. F. Choke .....
1	W-7215-A	Tube Terminal Connection .....	1	W-4908	Fixed Condenser (1-2 Mfd.)
1	W-7053	A & G Terminal Board .....	1	W-6471	Fixed Condenser (1-10 Mfd.)
		<b>Condenser Gang</b>	1	W-4922	Fixed Condenser (.003 Mfd.)
1	W-8666	Complete 3 Gang Variable Condenser Assembly (Including Drum Dial) .....	1	W-5882	Fixed Condenser (2-1 Mfd.)
1	B-6674-A	Dial Indicator Strip .....	1	W-7080	Switch Assembly .....
		<b>Parts On Gang Condenser Sold Separately</b>	1	W-7059	Switch Only .....
	W-6683	Drive Pulley Sub Assembly .....	1	W-7078	Bracket Sub Assembly .....
	W-6607	Stirrup Assembly .....	1	W-7079-A	Shaft Sub Assembly .....
	W-6671	Drive Pulley .....	1	W-7171	Connecting Link .....
	W-5596	Set Screw .....	1	W-7060-A	Antenna Tap Switch Assembly .....
	W-6672	Pulley Bracket .....			
	H-5536	Hex Head Screw .....			
	C-6673-B	Dial Drum .....			
	W-6017	Set Screw .....			
	W-5985-B	Tension Spring .....			
	W-5749	Drive Rope .....			
	W-5719	Dial Drum Stop .....			
	W-6874	Frame Cover .....			
	W-5726-A	Rotor Thrust Collar .....			
	W-5596	8-32 Set Screw .....			
	W-4907	Spring Washer .....			
	W-0906	Contact Springs .....			



# Chassis Model 63

## ALIGNMENT PROCEDURE

Preliminary

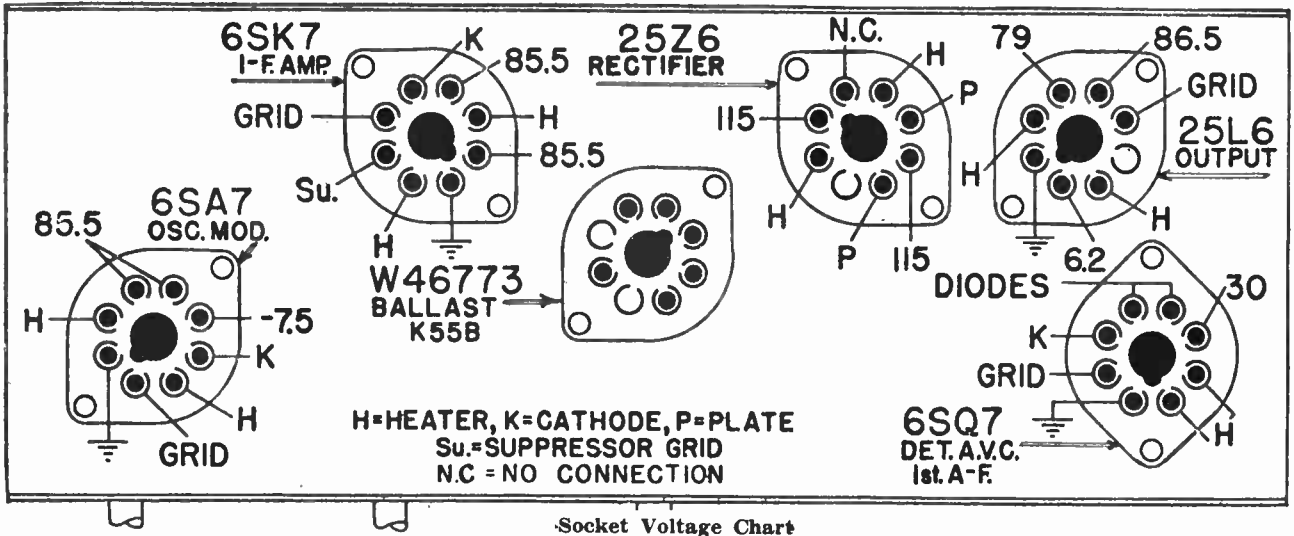
- Output Meter Connections.....Plate and Screen 25L6GT  
 Generator Ground Connections.....See foot note (1)  
 Dummy Antenna in series with Generator output.....See Chart below  
 Position of Volume Control.....Fully on  
 Depress Manual Push-Button

### ALIGNMENT CHART

Signal Generator							
Sequence	Dummy Antenna	Frequency Setting	Input Connection for Radio	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.05 Mf.	456 Kc.	Antenna	S. B.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2	400 ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (rear section of tuning condenser)	Adjust for maximum output.
3	400 ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant." (center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5	.002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT" (rear trimmer right end of chassis)	Adjust for maximum output.

(1) Do not use a ground return from the signal generator unless it is found to be absolutely necessary.

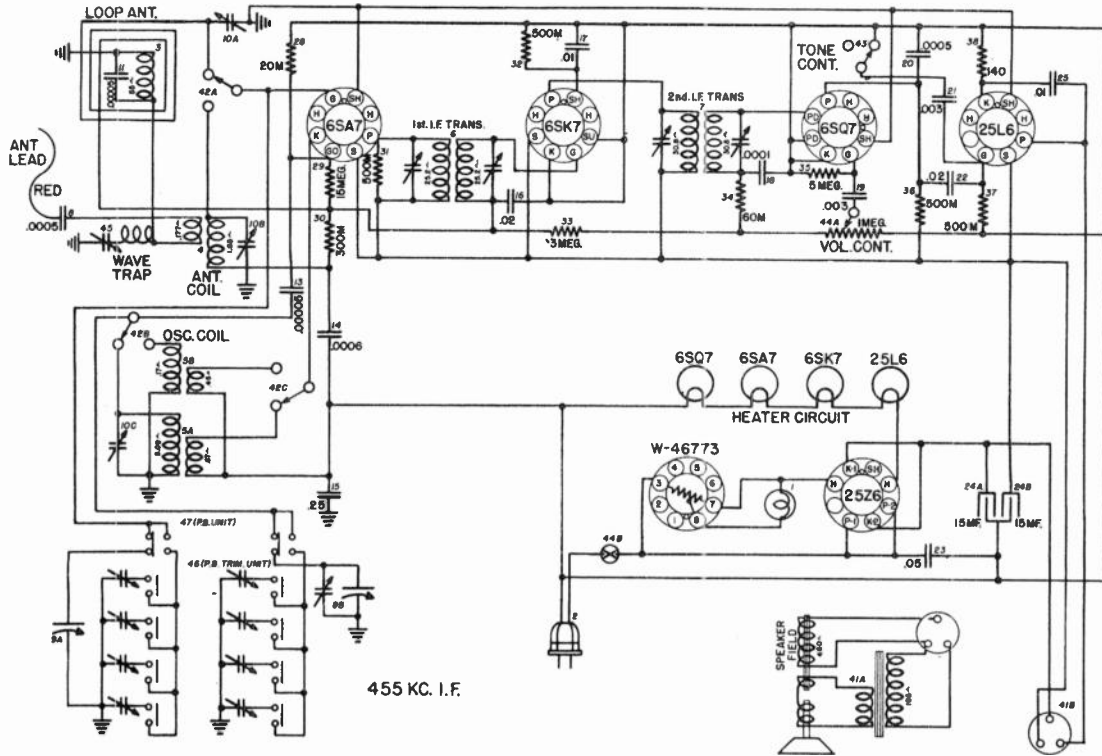
If necessary a small condenser (approx. a .001 mf.—400 Volt) should be connected in series with the ground lead of the generator and receiver chassis.



#### WAVE TRAP W MODELS

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Chassis Model 63



Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb, Dial Light—6.3 Volt	—49733	P. B. "Osc." Padder Condenser	
2	G3	Socket Assy.—Dial Light	—49733	P. B. "Ant." Padder Condenser	
3	—49775	Cable and Plug—Power	—49732	P. B. "Osc." Padder Condenser	
4	G1	Loop Assy.—Ant.	—49732	P. B. "Ant." Padder Condenser	
5	—49739	Bracket—Loop Mtg.	—49732	P. B. "Osc." Padder Condenser	
5A	—20989	Fibre Washer—Loop Mtg.	—49732	P. B. "Ant." Padder Condenser	
5B	—43811	Screw No. 8—32 x 1/4"—Loop Mtg.	—49732	P. B. "Osc." Padder Condenser	
6	G221—32000	Coil—H. F. Ant.	—49732	P. B. "Ant." Padder Condenser	
7	G230—32002	Coil—B. C. Osc.	—49732	P. B. "Osc." Padder Condenser	
8	G230—32002	Coil—H. F. Osc.	—49769	Bracket—For Mounting Padders	
9A	G240—32004	1st I. F. Trans.	—49764	P. B. Switch Only (No Buttons)	
9B	G242—32004	2nd I. F. Trans.	—49731	Bracket—P. B. Unit Rear Mtg.	
10A	G3	Cond., 500 Mmf. Mica.	—49771	Bracket—P. B. Unit Front Mtg.	
10B	—49737A	Var. Cond., Ant. Sect.	—49727	Bracket—Dial and P. B. R. Front	
10C	—49737A	Var. Cond., Ant. Sect.	—49899	Rubber Grommet—P. B. Unit Mtg.	
11	—49722	Cond. Trim., B. C. Ant.	—46460	Headed Bushing—P. B. Unit Mtg.	
12	—49722	Cond. Trim., H. F. Ant.	—13158	Dial Face	
13	—49722	Cond. Trim., B. C. Osc.	—49770	Trimount Stud—Dial Face Mtg.	
14	G5	Cond., 50 Mmf. Mica.	—49780	Pointer—Dial Hand	
15	G5	Cond., 50 Mmf. Mica.	—49665	Bearing—Drive Shaft (Riveted to Chassis)	
16	G21	Cond., 600 Mmf. Mica.	—49741	Drive Shaft	
17	—47413	Cond., .25 Mf. 160 Volt Paper	—28032	Spring—Drive Shaft Retaining	
18	—45780B	Cond., .02 Mf. 160 Volt Paper	G11	Drive Cord	
19	—23191B	Cond., .01 Mf. 400 Volt Paper	—41582	Spring Drive Cord Tension	
20	G2	Cond., 100 Mmf. Mica.	—51752	Rubber Grommet—Gang Mtg.	
21	—34002	Cond., .003 160 Volt Paper	—45580	(3 Req.)	
22	—60084	Cond., 500 Mmf. Mica	—45620	Headed Bushing—Gang Mtg.	
23	—50084	Cond., .003 160 V. Paper	O	Flat Washer—Gang Mtg. (3 Req.)	
24	—45780B	Cond., .02 Mf. 160 V. Paper	—130429	No. 8—32 x 1/4" Screw—Gang Mtg.	
24A	—45782B	Cond., .05 Mf. 120 V. A. C.	—49674	8 Prong Tube Socket	
24B	—49684B	Cond., 15 Mf. 140 V. Elect.	—49693	Tube Socket Insulator	
25	—49684B	Cond., 15 Mf. 140 V. Elect.	—45738	Lock Plate—Power Cord	
26	—23191A	Cond., .01 Mf. 400 V. Paper	—130033	Cabinet—Wood	
27	—36780	Res., 20,000 Ohms 1/4 W. Ins.	—130177	Back—Cabinet	
28	—50671	Res., 15 Meg. Ohms. 1/4 W. Ins.	S	No. 4 x 1/4" Wood Screw—Back Mtg. (FS-18)	
29	—35601	Res., 300,000 Ohms. 1/4 W. Ins.	—130034	Shipping Carton	
30	—36322	Res., 500,000 Ohms. 1/4 W. Ins.	—46953	Knob—Volume—Tone—Tuning	
31	—36322	Res., 500,000 Ohms. 1/4 W. Ins.	—41742	Spring—Knob Insert	
32	—36688	Res., 3 Meg. Ohms. 1/4 W. Ins.	—49940	Push Button (5 Req.)	
33	—3592R	Res., 60,000 Ohms. 1/4 W. Ins.	—130078	Escutcheon and Lens—Dial Window	
34	—47131	Res., 5 Meg. Ohms. 1/4 W. Ins.	—49917	Escutcheon—Call Letter Tab	
35	—36322	Res., 500,000 Ohms. 1/4 W. Ins.	—130017	Light Deflector Felt	
36	—36322	Res., 500,000 Ohms. 1/4 W. Ins.	—49970	Station Call Letter Tab Sheets	
37	—47512	Res., 140 Ohms. 3/4 W. Flex.	—49951	Instruction Booklet	
38	—49792	Speaker and Socket 6"	—40541	Envelope Assy.—Instructions and Call Letters	
39	—49797	Speaker Cable and Plug	—130480	No. 8—32 x 3/4" Screw—Chassis Mtg. (3 Req.) (FS-58)	
40	—49808A	Switch, B. C.	—45020	Flat Washer—Chassis Mtg. (3 Req.) (FS-58)	
41A	—49808A	Switch, B. C.	—130334	Felt Pad—Mtg. Screw Cover	
41B	—49808A	Switch, B. C.	MG17	Bottom Cover Assy.	
42A	—49808A	Switch, B. C.	—49770	Trimount Studs—Bottom Cover Mtg. (7 Req.)	
42B	—46159	Switch, Tone Control	—130130	Bottom Cover (Insulator)	
42C	—49774	Vol. Control, Imeg.	—130376	Cabinet Protector Cloth	
43	—49774	Switch, Power			
44A	G193—32004	Wave Trap (TA 62W)			
44B	MC9—49709	P. B. Trimmer Cond. Unit			
45	—49764	Push Button Unit			
46	—45979	Trimmer Cond. (Wave Trap)			
47	—49735A	P. B. "Ant." Padder Condenser (540-1,000 Kc.)			
	—49734A	P. B. "Osc." Padder Condenser (540-1,000 Kc.)			
	—49734A	P. B. "Ant." Padder Condenser (600-1,150 Kc.)			

# ALIGNMENT PROCEDURE— Chassis Model 64

## PRELIMINARY

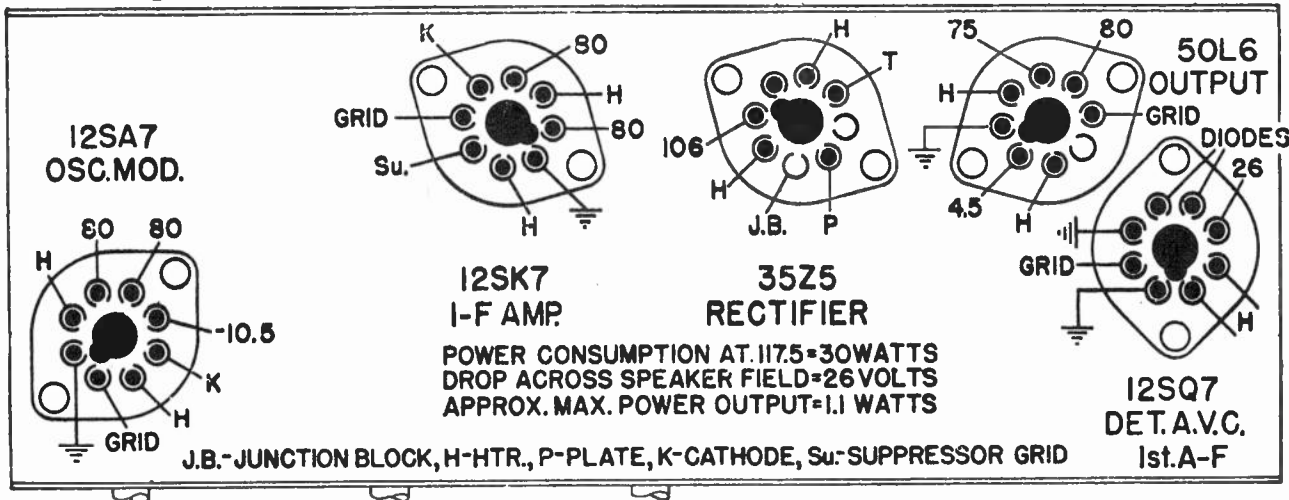
Output Meter Connections . . . . .	Plate and Screen 50L6GT
Generator Ground Connection . . . . .	See foot note (1)
Dummy Antenna in series with Generator Output . . . . .	See Chart below
Position of Volume Control . . . . .	Fully On

## ALIGNMENT CHART

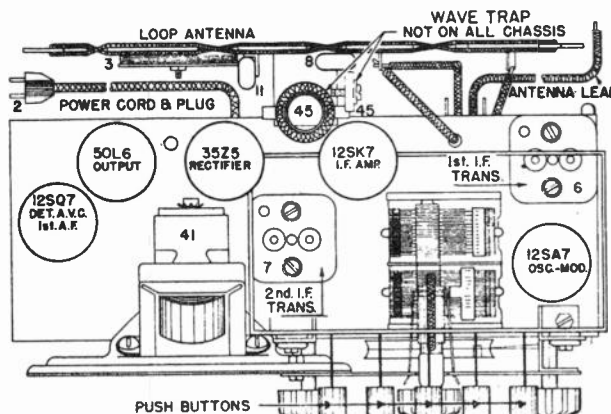
Sequence	SIGNAL GENERATOR			Band Switch	Tuning Cond. Setting	Trimmer Cond. Adjusted	Remarks
	Dummy Antenna	Frequency Setting	Input Connection To Radio				
1.	.05 Mf.	456 Kc.	Antenna	S. B.	Fully on	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2.	400 Ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (Rear section tuning cond.)	Adjust for maximum output.
3.	400 Ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "ANT" (Center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4.	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully on	B. C. "OSC" (Front trimmer right end of Chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 140 on dial	B. C. "ANT" (Rear trimmer right end of chassis)	Adjust for maximum output.

## IMPORTANT ALIGNMENT NOTES

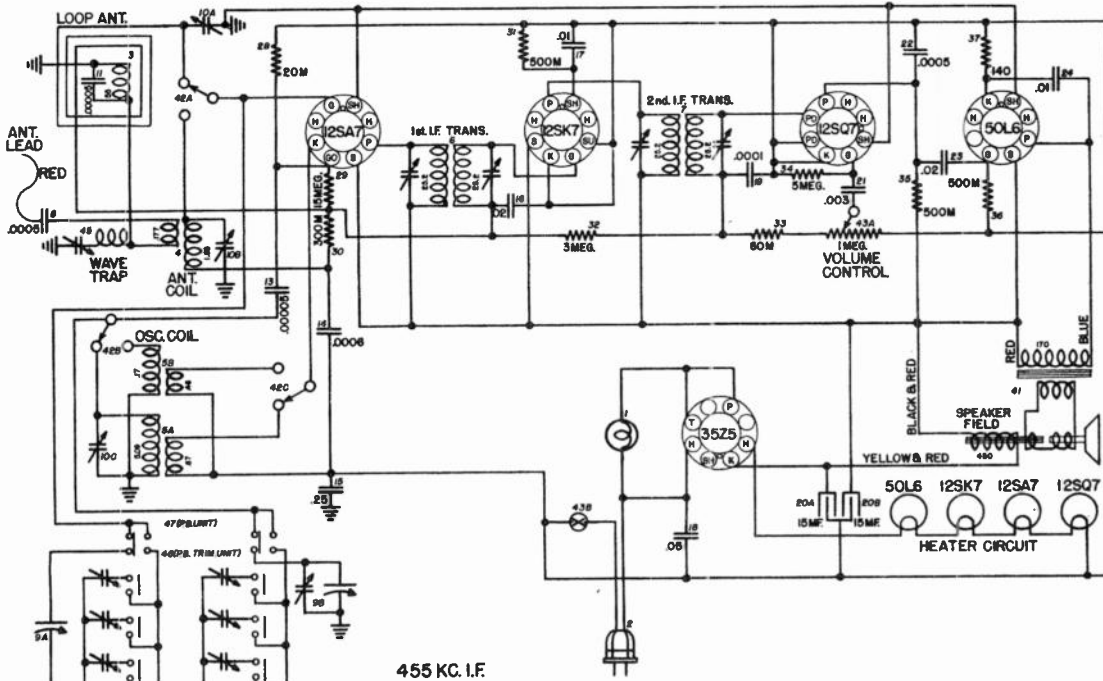
(Foot Note) (1). Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (approx. .001 mf. 400 V) should be connected in series with the ground lead of the generator and receiver chassis.



**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



Chassis Model 64



455 KC. I.F.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb Dial Light—6.3 Volt	—49734A	Push Button "Osc." Padder (540-1,000 Kc.)	
2	—49637	Socket Assy.—Dial Light	—49734A	Push Button "Ant." Padder (600-1,150 Kc.)	
3	—49775	Cable and Plug (Power)	—49733	Push Button "Osc." Padder (600-1,150 Kc.)	
	—45738	Insulating Lock Plate—Pwr. Cord	—49733	Push Button "Ant." Padder (600-1,400 Kc.)	
	—32008	Loop Assy.—Ant.	—49732A	Push Button "Osc." Padder (800-1,400 Kc.)	
	—49739	Brkt.—Loop Mtg.	—49732A	Push Button "Ant." Padder (1,000-1,650 Kc.)	
	—20989	Fibre Washer—Loop Mtg.	—49732A	Push Button "Osc." Padder (1,000-1,650 Kc.)	
	—23880	Thumb Screw—Loop Mtg.	—49789	Push Button Padder Mtg. Strap	
4	G221—32000	Coil H.F. Ant.	—49771A	Push Button Bracket—Switch Mtg. (FS-8)	
5A	G230—32002	Coil B.C. Osc.	—49731	Push Button Rear Support Bracket (FS-8)	
5B	G230—32002	Coil H.F. Osc.	—49728	Push Button—L. H. Support Brkt. (Front) (FS-8)	
6	G240—32004	1st I.F. Trans.	—49727A	Push Button—R. H. Support Brkt. (Front) (FS-8)	
7	G242—32004	2nd I.F. Trans.	—49899	Rubber Grommet—P. B. Mtg. (3 Req.)	
8	G3—34002	Cond. 500 Mmf. Mica	—46460	Headed Bushing—P. B. Mtg. (3 Req.)	
9A	—49737A	Var. Cond. Ant. Sect.	L-8	Shakeproof Washer—P. B. Mtg. (2 Req.)	
9B	—49737A	Var. Cond. Osc. Sect.	—6097	No. 8—32 x 1/4" Screw—Rear Mtg. to P. B. Assy. (FS-58)	
10A	—49722	Cond. Trim. B.C. Ant.	—131588	Dial Face	
10B	—49722	Cond. Trim. H.F. Ant.	—49780	Pointer—Dial Hand	
10C	—49722	Cond. Trim. B.C. Osc.	—49770	Trimount Stud—Dial Face Mtg. (FS-58)	
11	G5—34002	Cond. 50 Mmf. Mica	—49727	Screw—Dial Face Mtg.	
12			—49665	Bearing—Drive Shaft (Riveted to Chassis)	
13	G5—34002	Cond. 50 Mmf. Mica	—49741	Drive Shaft	
14	G21—34002	Cond. 800 Mmf. Mica	—28032	Spring—Drive Shaft Retaining	
15	—47413	Cond. .25 Mf. 160 V. Paper	G11—41582	Drive Cord	
16	—45780B	Cond. .02 Mf. 160 V. Paper	—51752	Spring—Drive Cord Tension	
17	—23191A	Cond. .01 Mf. 400 V. Paper	—49998	Cabinet	
18	—45782B	Cond. .05 Mf. 120 V. A.C.	—130174	Cabinet Back—AD Cabinet	
19	G2—34002	Cond. 100 Mmf. Mica	S—80	Wood Screws—Back Mtg. (FS-18)	
20A	—49664B	Cond. 15 Mf. 140 V. Elect.	—130334	Felt Pad (Mtg. Screw Cover)	
20B	—49664B	Cond. 15 Mf. 120 V. Elect.	—130001	Shipping Carton	
21	—50084	Cond. .003 Mf. 160 V. Paper	—46953	Knob—Tuning and Volume Control	
22	G3—34002	Cond. 500 Mmf. Mica	—41742	Spring—Knob Insert	
23	—45780B	Cond. .02 Mf. 160 V. Paper	—49940	Push Button only (5 Req.)	
24	—23191A	Cond. .01 Mf. 400 V. Paper	—49970	Station Call Letter Tab Set	
25			—130017	Light Deflector Felt	
26			—49917	Escutcheon—Call Letter Tab	
27			—130078	Escutcheon and Dial Lens complete	
28		Res. 20,000 Ohms 1/4 W. Ins.	—130490	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Req.)	
29	—50671	Res. 15 Meg. Ohms 1/4 W. Ins.	L-8	Washer—Chassis Mtg. (3 Req.)	
30	—35601	Res. 300,000 Ohms 1/4 W. Ins.	—49947A	Instruction Book	
31	—36322	Res. 500,000 Ohms 1/4 W. Ins.	—40541	Instructions, Call Tabs, etc., Envelope Assy.	
32	—36888	Res. 3 Meg. 1/4 W. Ins.	MG17—130115	Bottom Assy.	
33	—35928	Res. 60,000 Ohms 1/4 W. Ins.	—130130	Insulator—Bottom Cover	
34	—47131	Res. 5 Meg. Ohms 1/4 W. Ins.	—49770	Trimount Stud—Bottom Cover (7 Req.) (FS-58)	
35	—36322	Res. 500,000 Ohms 1/4 W. Ins.			
36	—36322	Res. 500,000 Ohms 1/4 W. Ins.			
37	—47512	Res. 140 Ohms 1/4 W. Flex.			
38					
39					
40					
41	G1—49688	Speaker 5"			
42A	—49808A	Switch—B. C.			
42B		Switch—B. C.			
42C		Switch—B. C.			
43A	—49774	Vol. Control 1 Meg.			
43B		Switch—Power			
44					
45	G193—32004	Wave Trap (TK52W).			
46	MG9—49709	P. B. Trimmer Cond. Unit.			
47	B—49764	Push Button Unit.			
	—45979	Trimmer Cond. (Wave Trap).			
	MG8—49709	Push Button Condenser and Switch Assy.			
	—49735A	Push Button "Ant." Padder (540-1,000 Kc.)			

# Chassis Model 65-J-W

## ALIGNMENT PROCEDURE

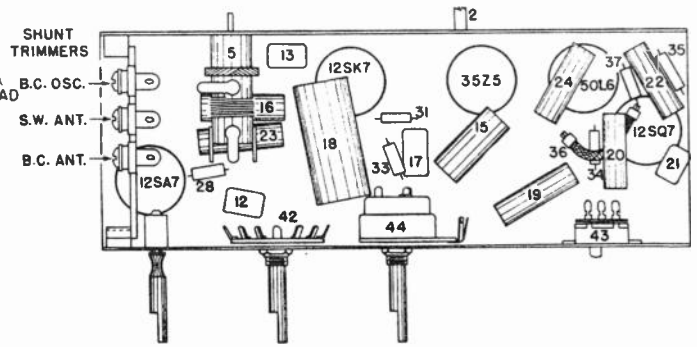
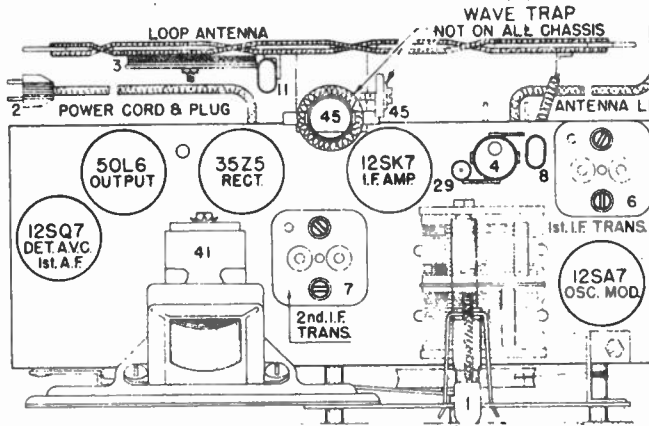


Fig. 3 — Bottom View

### 1.—Aligning I-F TO 455 Kc. Fig. 2

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two trimmer condensers on top of 2nd I-F assembly (Fig. 2) for maximum output.

(e) Adjust the two trimmer condensers on top of the 1st I-F assembly (Fig. 2) for maximum output.

(f) Repeat (d) and (e) for more accurate adjustments.

### 2.—Aligning R-F Amplifier.

The short wave band 6-15 mc., must be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).  
NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 2, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 2, for maximum output.

(k) Repeat (h) and (j) for more accurate adjustments.

### WAVE TRAP — 65W Chassis Only

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram.

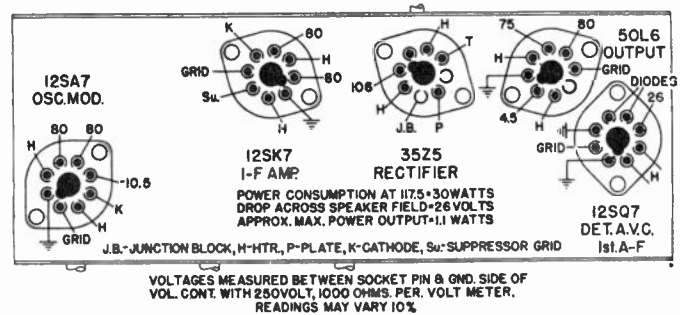


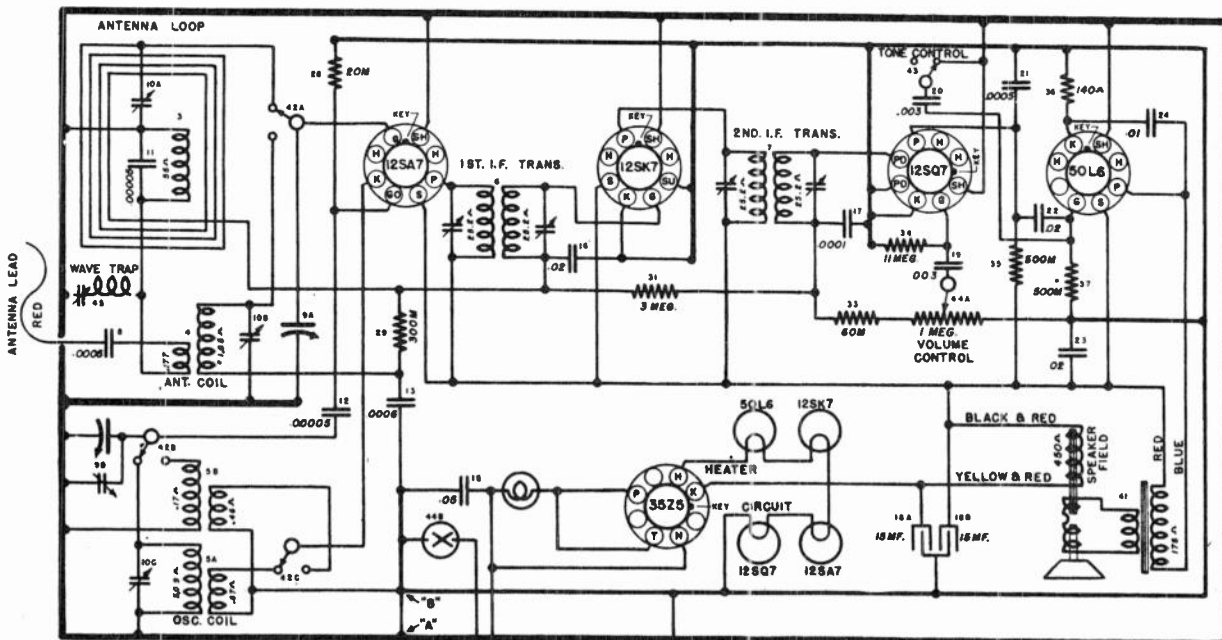
Fig. 4 — Socket Voltage Chart

# PARTS LIST, MODELS TH52, TH52W, TH52J CHASSIS MODEL 65

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	40	None	
	—49636	Socket Assy.—Dial Light	41	G1 —49698	Speaker
2	—49775	Power Cord and Plug	42	G3 —49698	Speaker
3	G1 —32008	Loop Antenna	42	—49808	Band Change Switch
4	G221—32000	Antenna Coil—6-15 Mc.	43	—46159	Tone Switch
5	G230—32002	Dual Oscillator Coil		—131516	Handle
		A—550 to 1,600 Kc. Coil		—49161	Handle Screws
		B—6.0 to 15.0 Mc. Coil	44	—49774	Volume Control (1 Meg.) and Line Sw.
6	G240—32004	1st I-F. Assy.—455 Kc.	45	G193—32004	Wave Trap—Model W-52
7	G241—32004	2nd I-F. Assy.—455 Kc.		—47413	Condenser, .25 Mf. 160 V.—Model J-53
8	G3 —34002	Condenser, .0005 Mf. Mica		—23191	Condenser, .01 Mi. 400 V.—Model J-53
9	—49737	Condenser—Variable Tuning Gang.		—36322	Resistor, 500,000 Ohms—Model J-53
10	—49722	Condenser—3 Section Shunt Trimmer		—131588	Dial Face
11	G5 —34002	Condenser, .00005 Mf. Mica		—130445	Bracket—Dial Face Mtg. (R. H.)
12	G5 —34002	Condenser, .00005 Mf. Mica		—49741	Drive Shaft (With Pulley)
13	G21—34002	Condenser, .00060 Mf. Mica		—49665	Bearing—Drive Shaft (Riveted to Chassis)
14	None			—28032	Spring—Shaft Retaining
15	—45782	Condenser, .05 Mf. 120 V.		G11 —41582	Drive Cord
16	—45780	Condenser, .02 Mf. 160 V.		—51572	Spring—Drive Cord Tension
17	G2 —34002	Condenser, .0001 Mf. Mica		—49780	Pointer—Dial Hand
18	—49664	Condenser—Dual Electrolytic		—49832	Celluloid Dial Lens
		A—15 Mf. 140 V.		BK	Cabinet—Ivory Bakelite
		B—15 Mf. 120 V.		—48758	Trimount Stud—Back Mtg. (4) (FS-18) (FS-18)
19	—50084	Condenser, .0003 Mf. 160 V.		—46953	Knobs—Tuning, Volume Control and Tone Control
20	—50084	Condenser, .003 MF. 160 V.		MG17—130115	Bottom Cover Assy.—Model TH52
21	G3 —34002	Condenser, .0005 Mf. Mica		—130127	Switch Hole Cover—Model TH52
22	—45780	Condenser, .02 Mf. 160 V.		—130130	Bottom Cover (Insulator) Model TH52
23	—45780	Condenser, .02 Mf. 160 V.		—49878	Hole Plug—Model TH52
24	—23191	Condenser, .01 Mf. 400 V.		—131940	Cabinet
25	None			—130097	Back—Cabinet
26	None			S —80	Screw—AE Back Mtg. (10) (FS-18)
27	None			—130552	Shipping Carton—Cabinet
28	—36760	Resistor, 20,000 Ohms ¼ W.		—46953	Knob—Tuning—Band Switch—Volume Control
29	—35601	Resistor, 300,000 Ohms ¼ W.		—41742	Spring—46953 Knob Insert
30	None			—49872	Knob—(Tail) Tone Control
31	—36688	Resistor, 3 Megohms ¼ W.		—49770	Trimount Stud—Bottom Cover Mtg. (7)
32	None			—49284	Short Wave Station Chart
33	—35928	Resistor, 60,000 Ohms ¼ W.			
34	—48693	Resistor, 11 Megohms ¼ W.			
35	—36322	Resistor, 500,000 Ohms ¼ W.			
36	—47512	Resistor, 140 Ohms ¼ W.			
37	—36322	Resistor, 500,000 Ohms ¼ W.			
38	None				
39	None				

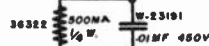
## WIRING DIAGRAM — MODELS TH52 — TH52W — TH52J Chassis Model 65



TUBES MAY BE METAL OR GT TYPES

455 KC. I.F.

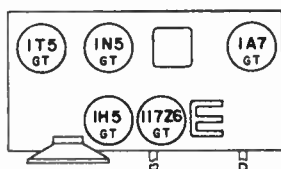
TO MAKE UNDERWRITERS APPROVED MODELS REMOVE CONNECTION BETWEEN "A" & "B" AND REPLACE WITH .25MF. 160V. CONDENSER W-47413



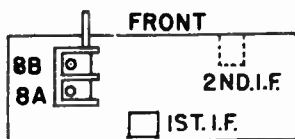
ON ALL U.L. APPR. MODELS ONLY INCORPORATE SHELL HOOKUP ON 12SK7 TUBE AS INDICATED

# SERVICE INFORMATION — Model 67 Chassis

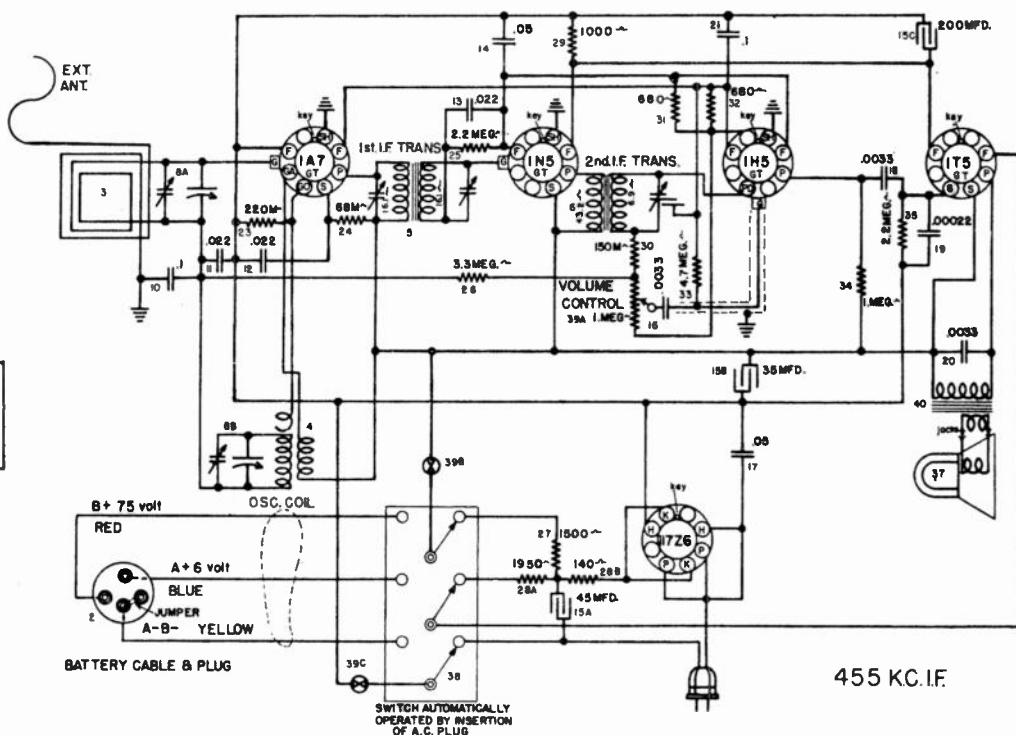
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



Item No.	Part No.	Description	Item No.	Part No.	Description
1	—132300-3	A.C. Cable and Plug	—44392		Screw
2	—132165-1	Battery Cable and Plug	—30409		Flat Washer
3	GB—132196-1	Loop Antenna	—132194		Baffle
4	G283—32002	Osc. Coil	38	—132161-1	Triple Pole O.T. Switch
5	G268—32004	1st I.F. Trans.		—132212-1	Switch Sticker
6	G289—32004	2nd I.F. Trans.	39A	B—130520-1	Volume Control 1 Meg.
7		None	39B		S.P.S.T. Switch on V.C.
8A	C—132168-2	Var. Cond. R.F. Section	39C		S.P.S.T. Switch on V.C.
8B		Var. Cond. Osc. Section	40	B—132197-1	Output Trans.
9	NONE			—132276	Handle—Top Grain Leather
10	G67—39001	Cond. .1 Mfd. 200 V.		—132279	Handle Bracket (2)
11	G63—39001	Cond. .022 Mfd. 200 V.		—132277	Handle Bracket Split Rivets (4)
12	G63—39001	Cond. .022 Mfd. 200 V.		—132278	Handle Bracket Split Rivets (2)
13	G63—39001	Cond. .022 Mfd. 200 V.		—132181-1	Rivet, Split Shoulder (2) in Chassis Shelf
14	G65—39001	Cond. .05 Mfd. 200 V.		—132272	Back Panel
15A	B—132144-1	Cond. 45 Mfd. Elect.		—132179-1	Back Clamp (2)
15B		Cond. 35 Mfd. Elect.		—132275	Back Clamp Rivets (2)
15C		Cond. 200 Mfd. Elect.		—132180-1	Back Plate (2)
16	G10—39001	Cond. .0033 Mfd. 600 V.		—132274	Back Plate Rivets (4)
17	G65—39001	Cond. .05 Mfd. 200 V.		—132273	Metal Feet Glides (4)
18	G10—39001	Cond. .0033 Mfd. 600 V.		—132153	67 Chassis Assem.
19	G9—39001	Cond. .00022 Mfd.		—132175-1	Cabinet
20	G10—39001	Cond. .0033 Mfd. 600 V.		—132176-1	Carton
21	G67—39001	Cond. .1 Mfd. 200 V.		—132193-1	Cab. Front and Lens
22	NONE			—132173-1	Dial Face
23	G21—39002	Res. 220 M Ohm 1/4 W.		NONE	Dial Mtg. Brkts.
24	G18—39002	Res. 68 M Ohm 1/4 W.		—132073-1	Knob—Tuning
25	G27—39002	Res. 3.3 Meg. Ohm 1/4 W.		—132073-2	Knob—V. C.
26	G28—39002	Res. 2.2 Meg. Ohm 1/4 W.		—48720A	"Off" Indicator
27	G8—39002	Res. 1500 Ohm 1/4 W.		—132183-1	Speed Nut
28A	—132159-1	Res. 1900 Ohm Candohm		—132119-2	Drive Shaft
28B		Res. 140 Ohm		—132206-1	Dial Pointer
29	G7—39002	Res. 1000 Ohm 1/4 W.			Drive Shaft Retaining Spring
30	G20—39002	Res. 150 M Ohm 1/4 W.		G—132167-2	Drive Cord Assy.
31	G6—39002	Res. 680 Ohm 1/4 W.		—51752	Drive Cord Spring
32	G6—39002	Res. 680 Ohm 1/4 W.		—132028	Drive Cord Rivet
33	G29—39002	Res. 4.7 Meg. Ohm 1/4 W.		—132123	Sockets
34	G25—39002	Res. 1 Meg. Ohm 1/4 W.		—46447	Tube Shields
35	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.		NONE	Speaker Cable or Leads
36	NONE			—49770	Trimount Studs
37	—130446-3	Speaker			

## ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

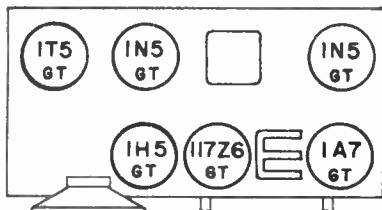
SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments  
Maximum power output @ 75 V. "B" — approx. 200 M. W. undistorted

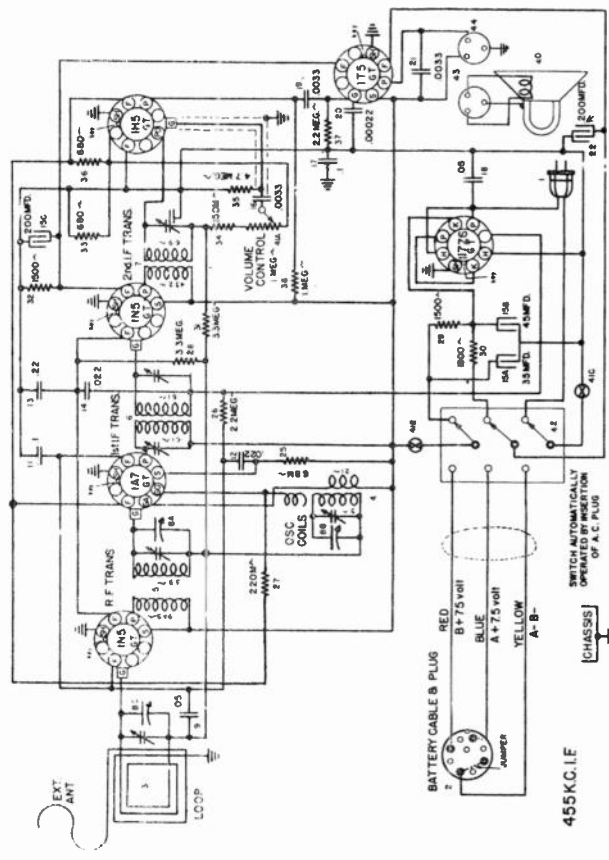
A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.  
Power consumption @ 117.5 volts line — 20 Watts

# SERVICE INFORMATION — Model 68 Chassis

**TUBE LAYOUT**



**WIRING DIAGRAM**



**PARTS LIST— MODELS 62-PA AND 62-PB**

Item No.	Part No.	Description
1	—49775	Power Cable and Plug
2	—132205-1	Battery Cable and Plug
3	GE—132196-1	Loop Antenna Assem.
4	G623—32002	Osc. Coil
5	G116—32001	R.F. Trans.
6	G268—32004	1st I.F. Trans.
7	Wd. Scr. (5)	2nd I.F. Trans.
8A	—132168-1	Var. Cond. R.F. Section
8B		Var. Cond. Osc. Section
8C		Var. Cond. Ant. Sect.
9	G65—39001	Cond. .05 Mf. 200 V.
10	None	
11	G67—39001	Cond. .1 Mf. 200 V.
12	G63—39001	Cond. .022 Mf. 200 V.
13	G69—39001	Cond. .22 Mf. 200 V.
14	G63—39001	Cond. .022 Mf. 200 V.
15A	—132144-1	Cond. 35 Mfd. Electro
15B		Cond. 45 Mfd. Electro
15C		Cond. 200 Mfd. Electro
16	G10—39001	Cond. .0033 Mf. 600 V.
17	G67—39001	Cond. .1 Mf. 200 V.
18	G65—39001	Cond. .05 Mf. 200 V.
19	G10—39001	Cond. .0033 Mf. 600 V.
20	G9—39004	Cond. .00022 Mf.
21	G10—39001	Cond. .0033 Mf. 600 V.
22	None	
23	None	
24	None	
25	G18—39002	Res. 68 M Ohm 1/4 W.
26	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.
27	G21—39002	Res. 220 M Ohm 1/4 W.
28	G28—39002	Res. 3.3 Meg. Ohm 1/4 W.
29	G8—39002	Res. 1500 Ohm 1/4 W.
30	—132502-1	Res. 1900 Ohm Candohm
31	G28—39002	Res. 3.3 Meg. Ohm 1/4 W.
32	G8—39002	Res. 1500 Ohm 1/4 W.
33	G6—39002	Res. 680 Ohm 1/4 W.
34	G20—39002	Res. 150 M Ohm 1/4 W.
35	G29—39002	Res. 4.7 Meg. Ohm 1/4 W.
36	G6—39002	Res. 680 Ohm 1/4 W.
37	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.
38	G25—39002	Res. 1 Meg. Ohm 1/4 W.
39	None	
40	—132670-2	Speaker, PA and PB
	—44392	Screw—Speaker, PA and PB
	—30409	Flat Washer
	—132194-2	Baffle
41A	—130520-1	Volume Control 1 Meg
41B		S.P.S.T. Switch
41C		S.P.S.T. Switch
42	—132160-1	Switch Assem.
	—132212-1	Switch Sticker
43	—132822-1	Speaker Cable
	—132276	Handle 62-PA and 62-PB
	—132421	Handle Bracket, Gold (62-PA)
	—132420	Handle Bracket Rivet (62-PB)
	—132279	Handle Bracket, 62-PA
	—132278	Handle Bracket Rivet (62-PA)
	—132132	Handle Bracket Rivet (62-PB)
	—132277	Handle Bracket Rivet (62-PA)
	—132289	Door Catch (62-PA) on 6u door
	—132290	Screw—Door Catch No. 3x3/8 Rd. Hd. Wd. Scr. (5)
	—132423	Door Catch (62-PB) on ea. door
	—132507	Back Lid—PA
	—132508	Back Lid—PB
	—132286	Back Lid Hinge—PA
	—132425	Back Lid Hinge—PB
	—132288	Back Lid Hinge Rivet (4)—PA
	—132426	Back Lid Hinge Rivet (4)—PB

Item No.	Part No.	Description
	132291	Rubber Foot—Black (4)
	132509	Front Lid—PA
	132510	Front Lid—PB
	—132287	Front Lid Slip Hinge (2)—PA
	—132424	Front Lid Slip Hinge (2)—PB
	132288	Front Lid Slip Hinge Split Rivet (4) PA
		Front Lid Slip Hinge Split Rivet (4)—PB
	—132181-1	Split Shoulder Rivet (2) in Chassis Shelf
	—132203	68 Chassis Assem.
	132210-1	Cabinet—PA
	—132210-2	Cabinet—PB
	—132211-1	Carton—PA and PB
	—132194-2	Cabinet Front and Lens.
	132177-1	Chassis Mtg. Clip
	132178	Chassis Mtg. Clip Speed Nut
	132193-2	Cab. Front and Lens
	—132173-1	Dial Face
	—132206-1	Dial Pointer
	—132073-3	Knob (PA and PB)
	—132073-2	Knob (PA and PB)
	—48720-A	"Off" Indicator
	—132183-1	Speed Nut
	—132119-2	Drive Shaft
	—132167-2	Drive Cord Assy.
	—51752	Drive Cord Spring Assem.
	132028	Drive Cord Rivet
	—132125	Sockets
	46447	Tube Shield
	—49770	Trimount Studs
	—132205	Battery Cable

**ALIGNMENT PROCEDURE**

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

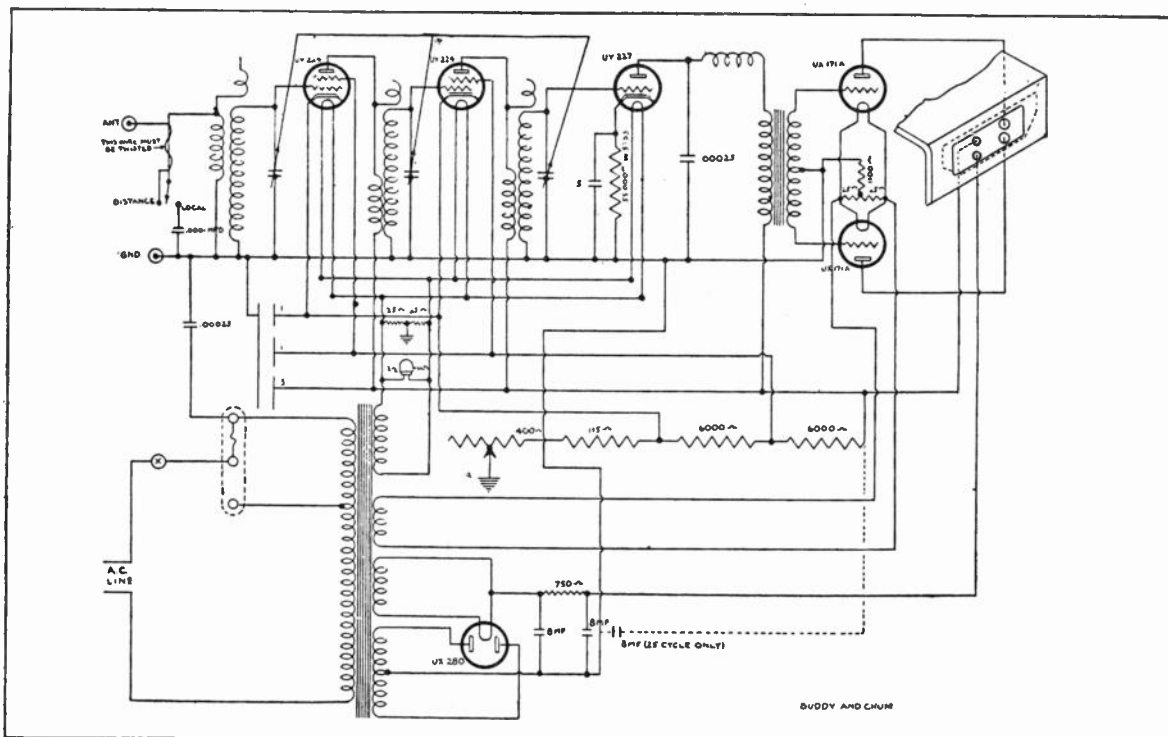
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F (1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 75 V. "B" — approx. 200 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ Power consumption @ 117.5 volts line — 25 Watts



## BUDDY and CHUM, CHASSIS MODEL 708



Qty.	Part No.	Description	Qty.	Part No.	Description
1	B-7901	Chassis .....			
1	W-7854	Cover (socket) .....			
1	W-6500	Push-pull transformer .....			
3	W-7020	Socket (4 prong) .....			
2	W-7291	Socket Guide (171-A) .....			
1	W-7057	Socket Guide (280) .....			
3	W-7021	Socket (3 prong) .....			
3	W-7125	Socket Guide .....			
12	M-20	.120 x 7-32 tubular rivet ...			
1	W-7740	R. F. transformer (antenna) .....			
2	W-7741	R. F. Transformer (inter-stage) .....			
2	W-7272-A	Tube Connections .....			
6	L-6	No. 6 Lockwashers .....			
6	N-5002	6-32 Hex. Nuts .....			
1	B-7278-A	R. F. Coil Shield (Detector) .....			
2	B-7279-A	R. F. Coil Shield .....			
1	W-7072	R. F. Shield Assem. (large) .....			
1	W-5910-A	Dial Light Clip .....			
1	B-7074	Shield Cover .....			
2	W-6474	Shield cover nut .....			
1	W-5750-B	Dial Light socket (without lamp) .....			
1	W-7704	Grommet .....			
1	W-7083	Variable Condenser gang assembly complete .....			
1	W-7154	Dial Gear .....			
1	W-5354-D	Dial Indicator .....			
1	W-7153	Dial Spider .....			
1	W-7870	3-32 x 5-8 Groove Pin .....			
1	W-5442	Pinion (Set Screw W-2320) .....			
1	W-5495	Pinion Washer .....			
1	W-7157-A	Pinion Spring .....			
1	W-7155	Pinion Bracket .....			
1	W-7156-B	Stop Bracket .....			
1	W-4907	Spring washer .....			
1	W-5720-A	Rotor thrust collar .....			
1	W-5596	8-32 S. H. Set Screw .....			
2	W-6906-B	Springs (Rotors) .....			
1	W-4943-A	Mershon Condenser .....			
	W-5253	Mershon Condenser (in 25 cycle units) .....			
1	W-4946-E	Condenser Cap .....			
1	W-4794	1-4" Stiffened sleeving (3 3/4" long) .....			
2	W-5033	Mounting clamps .....			
1	W-7751	Power Transformer 110 v. 60 cycle .....			
	7768	110 v. 25 cycle .....			
	7769	220 v. 25 cycle .....			
1	W-7496	Transformer shield .....			
					<b>PARTS UNDER CHASSIS</b>
1	W-4362-D	Plate Choke Assembly .....			
1	W-4076	Spacer .....			
1	W-4924	.00025 M. F. Fixed Condenser .....			
1	W-5753	55000 ohm resistance .....			
1	W-5713	Terminal Strip .....			
2	W-2478	Spacers .....			
1	W-4968	1-2 mfd. 2 paper fixed condenser .....			
1	W-4562	No. 6 Shakeproof Lug .....			
1	W-7424	Speaker terminal .....			
1	W-7430	Terminal Guide .....			
1	W-7640	Volume Control (400 Ohms) .....			
1	W-6703	6000 Ohm Resistance .....			
1	W-5713	Terminal Strip .....			
1	W-7732	115 Ohm Resistance .....			
2	W-3547	Spacers .....			
1	W-7733-A	.1 - .5 - .1 Mfd. Fixed Condenser .....			
1	W-6703	6000 Ohm Resistance .....			
1	W-5713	Terminal Strip .....			
1	W-20149	750 Ohm Fixed Resistance (Armored) .....			
1	W-7746	750 Ohm Fixed Resistance (used in first series) .....			
1	W-7876	1100 Ohm Fixed Resistance .....			
2	W-5864	Spacers .....			
1	W-7838	Terminal Board (Aerial & Ground) .....			
1	W-7059	Switch (Power) .....			
1	W-7079-E	Shaft Assembly .....			
1	W-7078-C	Bracket .....			
1	W-7192	Spacer .....			
1	W-7857-A	Switch (L-D) .....			
1	W-7865	Switch Bracket .....			
1	W-7866	Connecting Link .....			
1	W-7847	.0001 Mfd. Fixed Condenser .....			
2	W-5069	25-25 Ohm Fixed Potentiometer .....			
2	W-4476	Spacers (5-32) .....			
2	W-5864	Spacers (15-32) .....			
1	W-6587	Fuse panel .....			
1	W-7612	Fuse (1 amp.) .....			
1	W-4924	.00025 M. F. Fixed Condenser .....			
1	B-6867	Cable .....			
1	W-7704	Grommet .....			
1	W-4751-B	Cable Clamp .....			
1	W-5063	Rubber Tubing 1-2" long .....			
3	W-5634	Grommet (3-4") .....			
1	W-20053	Chassis Bottom .....			
6	W-5718-A	Bottom Double Nut .....			

# CHASSIS MODEL No. 70

## ALIGNMENT PROCEDURE

### Preliminary

Output Meter Connections.....	Plate to Plate of 6AC5G's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Master Tone Control.....	All Buttons Out

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

### TUBE VOLTAGE CHART

\* SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SA7—Converter.....		Gnd.	Gnd.	180	74	0	{0-S. W. 4.0 B. C.}	6.3 A. C.	0
6SK7—I. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.....		Gnd.	0	Gnd.	0	0	75	6.3 A. C.	Gnd.
6J5GT—Phase Inverter.....		Gnd.	Gnd.	145	J. B.	0	J. B.	6.3 A. C.	40
6J5GT(2)—P. P. A. F. Drivers.....		Gnd.	Gnd.	180	0	0	J. B.	6.3 A. C.	6.5
6AC5GT(2)—P. P. Output.....		Gnd.	Gnd.	304	J. B.	6.5	J. B.	6.3 A. C.	Gnd.
5Y3G—Rectifier.....		N. C.	310	J. B.	308 A. C.	J. B.	308 A. C.	J. B.	310

MAX. POWER OUTPUT.....12.0 WATTS

POWER CONSUMPTION.....90 WATTS

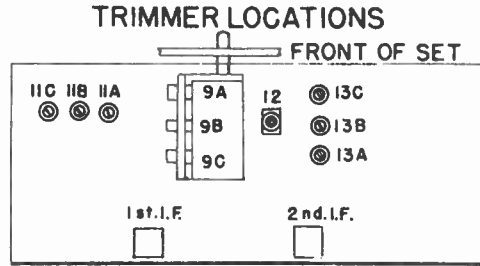
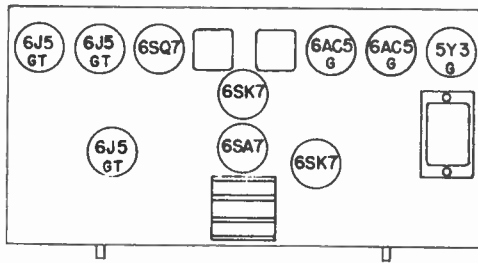
DROP ACROSS SPEAKER FIELD.....120 VOLTS

J. B.—Junction Block

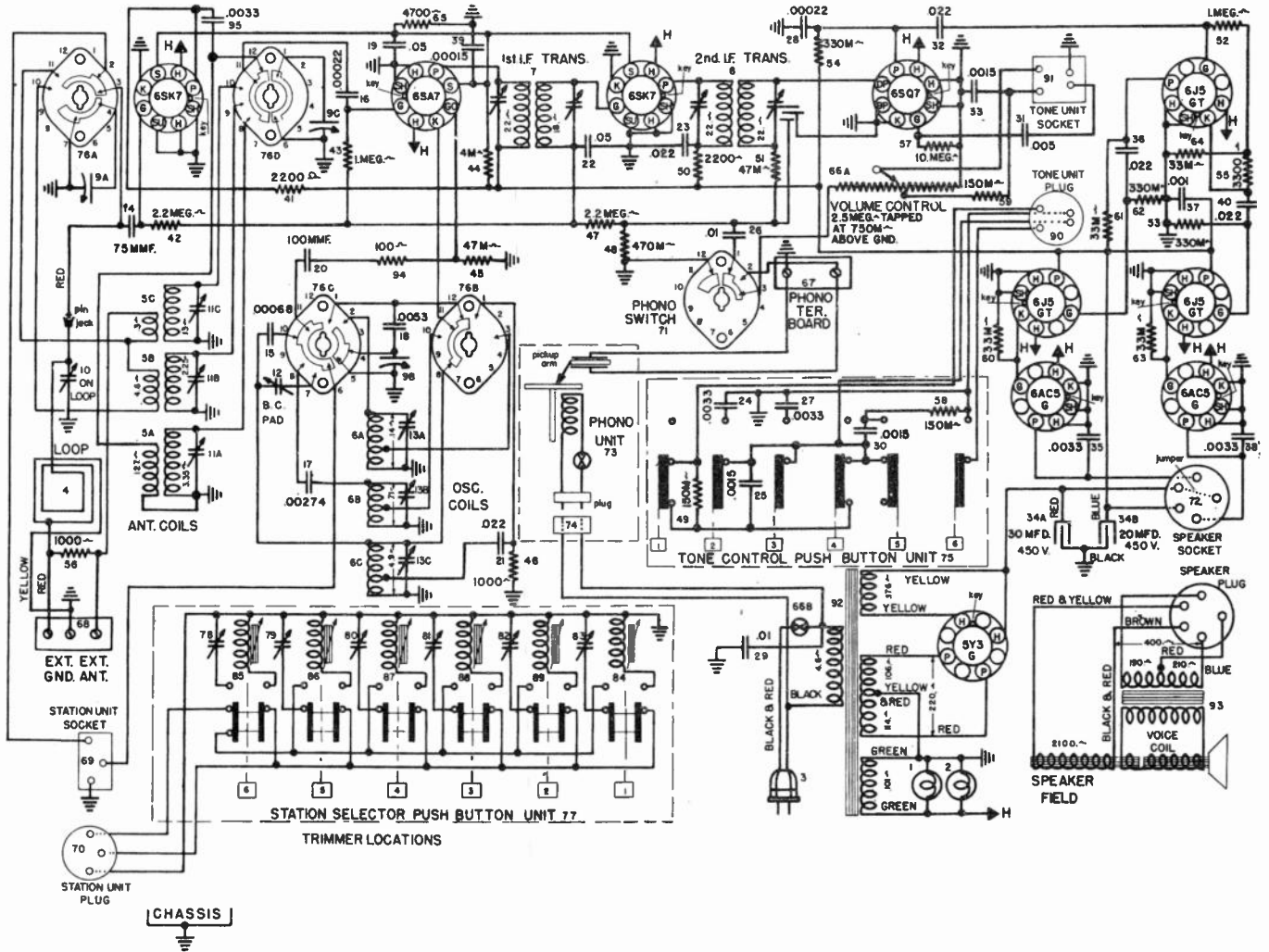
N. C.—No Connection

Voltages may vary 10% of values given.

# MODELS 02CP, 02CQ TUBE AND TRIMMER LAYOUT



## WIRING DIAGRAM, MODELS 02CP AND 02CQ — CHASSIS MODEL No. 70



## PARTS LIST, MODELS 02CP AND 02CQ — CHASSIS MODEL No. 70

Figures in first column refer to parts in Diagrams.

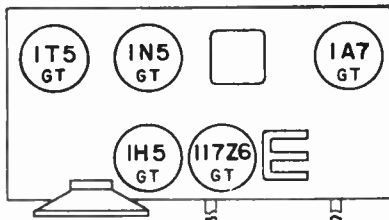
Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light.	71	—132297-1	Phono. Switch.
2	—48858	Dial Light.	72	G103—28807	Socket Speaker.
3	—49637-17	Dial Light Socket (2)	73	—132467	Record Changer & Phono. Assem.
4	—132300-2	Power Cord & Plug.	74	—132454-3	Cable & Plug—Phono. Assem.
		Antenna Loop.	75	—132411-1	Tone Sw. Assem.
5A	L—132384	Ant. Coil & Trimmer Assem.	76A	—132298-1	Band Chg. Sw. Ant. Sec.
5B	G236—32000	B. C. R. F. Coil.	76B		Band Chg. Sw. Osc. Sec.
5C		Pol. Band Ant. Coil.	76C		Band Chg. Sw. Osc. Sec.
		S-W Ant. Coil.	76D		Band Chg. Sw. R. F. Sec.
	L—132385	Osc. Coil & Trimmer Assem.	77	—132429	Sta. Selector Assem.
6A	G265—32002	S-W Osc. Coil.	78	—132436-4	Trimmer—Sta. Sel.
6B		Pol. Band Osc. Coil.	79	—132436-3	Trimmer—Sta. Sel.
6C		B. C. Osc. Coil.	80	—132436-3	Trimmer—Sta. Sel.
7	G272—32004	1st I. F. Trans.	81	—132436-2	Trimmer—Sta. Sel.
8	G273—32004	2nd I. F. Trans.	82	—132436-2	Trimmer—Sta. Sel.
9A	—132296-2	Var. Cond. Ant. Section.	83	—132436-1	Trimmer—Sta. Sel.
9B		Var. Cond. Osc. Section.	84	G269—32002	Coil—Sta. Sel.
9C		Var. Cond. B. C. R. F. Sec.	85	G267—32002	Coil—Sta. Sel.
10	—132418-1	Ant. Loop Trimmer.	86	G268—32002	Coil—Sta. Sel.
11A	—132386-1	B. C. R. F. Coil Trimmer.	87	G268—32002	Coil—Sta. Sel.
11B		Pol. Band Ant. Trimmer.	88	G270—32002	Coil—Sta. Sel.
11C		S. W. Ant. Coil Trimmer.	89	G270—32002	Coil—Sta. Sel.
12	—49652-1	Padder Cond. B. C. Osc. Coil.	90	—132437-1	Cable & Plug—Tone Sw.
13A	—132386-1	S. W. Osc. Coil Trimmer.	91	—132303-1	Socket—Tone Sw.
13B		Pol. Band Osc. Coil Trimmer.	92	—132313-1	Power Trans. (110-50-60)
13C		B. C. Osc. Coil Trimmer.	93	—132348-6	Speaker (02CQ Only)
14	G5 —39004	75 Mmf. Cond.			Output Trans.
15	G20 —131502	680 Mmf. Cond.		—131880-3	Speaker (02CP Only)
16	G9 —39004	220 Mmf. Cond.			Output Trans.
17	G35 —34005	.00274 Mf. Cond.	94	G1 —39002	100 Ohm 1/4 W. Res.
18	G34 —34005	.0053 Mf. Cond.		—52109	Tube Socket (10)
19	G41 —39001	.05 Mf. 400 V. Cond.		—131863	Clamp—Power Cable.
20	G27 —39004	100 Mmf. Cond.		—132231-2	Dial Face Assem.
21	G63 —39001	.022 Mf. 200 V. Cond.		—132320-1	Dial Pointer
22	G65 —39001	.05 Mf. 200 V. Cond.		—132167-4	Drive Cord Assem.
23	G15 —39001	.022 Mf. 600 V. Cond.		—132332-1	Drive Shaft.
24	G10 —39001	.0033 Mf. 600 V. Cond.		—49829B	Lock Spring—Dr. Shaft.
25	G8 —39001	.0015 Mf. 600 V. Cond.		—132321-1	Chassis Mtg. Feet (4)
26	G61 —39001	.01 Mf. 200 V. Cond.		—132403-1	Toggle Arm & Link.
27	G10 —39001	.0033 Mf. 600 V. Cond.		—132470-2	Cabinet (02CP)
28	G9 —39004	220 Mmf. Cond.		—132712-1	Cabinet (02CQ)
29	—39085	.01 Mf. 120 V. A. C. Cond.		—132799	Cabinet Door (02CQ)
30	G8 —39001	.0015 Mf. 600 V. Cond.		—132758	Cabinet Door (02CP)
31	G11 —39001	.005 Mf. 600 V. Cond.		—132471-1	Carton (02CP)
32	G39 —39001	.022 Mf. 400 V. Cond.		—132713-1	Carton (02CQ)
33	G8 —39001	.0015 Mf. 600 V. Cond.		—132371-1	Screw—Chassis Mtg. (4)
34A	—132301-2	30 Mf. Elect. Cond.		—44725	Washer—Chassis Mtg. (4)
34B		20 Mf. Elect. Cond.		—132322-1	Spring—Top—Chassis Mtg. (4)
35	G10 —39001	.0033 Mf. 600 V. Cond.		—132323-2	Spring—Bot.—Chassis Mtg. (4)
36	G39 —39001	.022 Mf. 400 V. Cond.		—45580A	Grommet—Spkr. Mtg. (4)
37	G7 —39001	.001 Mf. 600 V. Cond.		—37953	Washer—Spkr. Mtg. (4)
38	G10 —39001	.0033 Mf. 600 V. Cond.		—N8	Nut—Spkr. Mtg. (4)
39	G8 —39004	150 Mmf. Cond.		—L8	Lockwasher—Spkr. Mtg. (4)
40	G39 —39001	.022 Mf. 400 V. Cond.		—132346-1	Dial Glass.
41	G9 —39002	2200 Ohm 1/4 W. Res.		—132347-1	Rubber Gasket—Dial Glass.
42	G27 —39002	2.2 Megohm 1/4 W. Res.			Knob—Large (2)
43	G25 —39002	1 Megohm 1/4 W. Res.		—132393-1	Knob—Small (2)
44	—132458-1	4000 Ohm 3 W. Res.		—132341-1	Paper Washer—Knob (2)
45	G17 —39002	47000 Ohm 1/4 W. Res.		—132398-1	Escutcheon—Dial. (02CP Only)
46	G7 —39002	1000 Ohm 1/4 W. Res.		—132343-1	Escutcheon—Dial. (02CQ Only)
47	G27 —39002	2.2 Megohm 1/4 W. Res.		—132343-7	Speed Nut—P. B. Mtg. (8)
48	G23 —39002	470,000 Ohm 1/4 W. Res.		—90405	Push Button—Sta. Sel. (6)
49	G20 —39002	150,000 Ohm 1/4 W. Res.		—132396-1	Plate—Sta. Sel. P. B.
50	G9 —39002	2200 Ohm 1/4 W. Res.		—132345-2	Plate—Tone Sw. P. B.
51	G17 —39002	47,000 Ohm 1/4 W. Res.		—132397-1	Tone Button—No. 1.
52	G25 —39002	1 Megohm 1/4 W. Res.		—132397-2	Tone Button—No. 2.
53	G22 —39002	330,000 Ohm 1/4 W. Res.		—132397-3	Tone Button—No. 3.
54	G22 —39002	330,000 Ohm 1/4 W. Res.		—132397-4	Tone Button—No. 4.
55	G10 —39002	3300 Ohm 1/4 W. Res.		—132397-5	Tone Button—No. 5.
56	G7 —39002	1000 Ohm 1/4 W. Res.		—132397-6	Tone Button—No. 6.
57	G31 —39002	10 Megohm 1/4 W. Res.		—132430-1	Loop Spacer Assem. (1)
58	G20 —39002	150,000 Ohm 1/4 W. Res.		—131969-2	Loop Spacer (2)
59	G20 —39002	150,000 Ohm 1/4 W. Res.		—131970-2	Loop Spacer—Ecc. (1)
60	G16 —39002	33,000 Ohm 1/4 W. Res.		—132416-1	Brkt.—Loop Spacer (4)
61	G16 —39002	33,000 Ohm 1/4 W. Res.		—32657	Loop Ant. Wire—(72")
62	G22 —39002	330,000 Ohm 1/4 W. Res.		—132478-1	Instr. Envelope Assem.
63	G16 —39002	33,000 Ohm 1/4 W. Res.		—132434-1	Call Letter Sheet.
64	G16 —39002	33,000 Ohm 1/4 W. Res.		—132399-1	Call Letter Cover.
65	—132459-1	4700 Ohm 2 W. Res.		—132479-1	Instruction.
66A	—132299-2	Vol. Control 2.5 Megohm.		—132463-1	Hinge Assem.—R. H.
66B		A. C. On-Off Switch.		—132463-2	Hinge Assem.—L. H.
67	G61 —26719	Phono Term. Board.		—132472-1	Hinge Roller (2)
68	G51 —26719	Ant. Term. Board.		—132473-1	Hinge Roller Stud (2)
69	—47133	Socket—Sta. Selector.		—132403-2	Toggle Arm & Link Assem.
70	—132437-2	Cable & Plug—Sta. Selector.			

### RECORD CHANGER PARTS

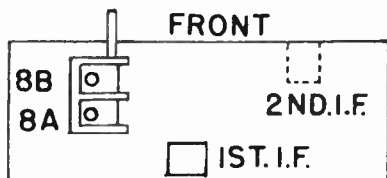
Part No.	Description	Part No.	Description
—132728	Turn Table Only.	—132743	Record Changer Shelf Cap.
—132729	Turntable Nut.	—132744	Record Clamp (Plastic)
—132	Offset Center Post.	—132745	Record Clamp Spring.
—132390-1	Changer Mounting Springs. (6)	—132746	Record Clamp Spring Pin.
—132389	Changer Mounting Screws. (3)	—132763	"Z" Bracket Spring
—132388-1	Changer Mtg. Nut (3)	—132765	Size Change Lever Spring.
—132732	Motor Only, 60 Cycle.	—132764	Lever Link Spring.
—132733	Idler Wheel.	—132767	A. C. Switch & Cover.
—131032	50 Cycle Spring.	—132768	A. C. Switch Lever Wire Spring.
—132735	Knob (Plastic—"Off—On")	—132769	Spring Washer.
—132736	Escutcheon (Plastic)	—132770	Bearing Assembly.
—132737	Tinnerman Clamps for Mtg.	—132771	Cork Washer.
—132741	Arm Rest.	—132772	Thrust Bearing.
—132742	Arm Rest Cap (Plastic)	—132773	Starting Bracket Spring.
—132738	Pickup Crystal Cartridge	—132774	Trigger Bracket Spring.
—132739	Needle Screw (Phillips Head)	—132526-1	Pickup Arm Tension Spring.
—132740	Mounting Screw (Crystal Cartridge)	—132557	Wrap Around
—132734	Pickup Arm Adjusting Screw.	—132542-1	Roller. (6)
—132760	Pickup Arm Adjusting Spring.	—132543-1	Roller Stud. (6)
—132526-1	Pickup Arm Tension Spring.	—32721-2	Acorn Nut. (2)
—132762	Pickup Arm Pivot Pin.	—132659-1	Needle Assem. (sapphire)

# SERVICE INFORMATION — Model 71 Chassis

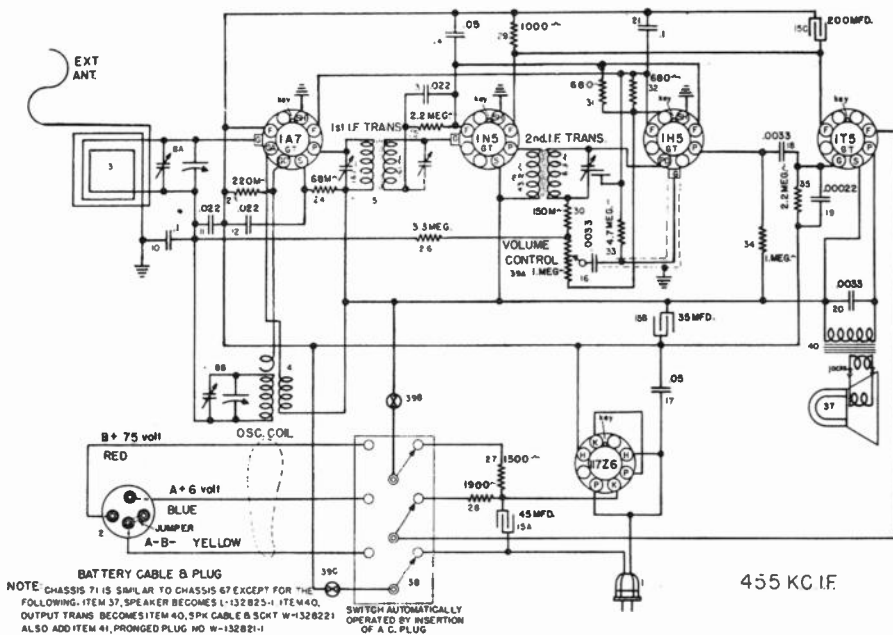
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



455 KC IF

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—132300-3	A.C. Cable and Plug		—41392	Screw
2	—132165-1	Battery Cable and Plug		—30409	Flat Washer
3	GB—132196-1	Loop Antenna		—132191	Baffle
4	G263—32002	Osc. Coil	38	—132161-1	Triple Pole O.T. Switch
5	G268—32004	1st I.F. Trans.		—132212-1	Switch Sticker
6	G269—32004	2nd I.F. Trans.	39A	B—130520-1	Volume Control 1 Meg.
7		None	39B		S.P.S.T. Switch on V.C.
8A	C—132168-2	Var. Cond. R.F. Section	39C		S.P.S.T. Switch on V.C.
8B		Var. Cond. Osc. Section	40	—132821-1	Speaker Plug
9	NONE			—132276	Handle—Top Grain Leather
10	G67—39001	Cond. .1 Mfd. 200 V.		—132279	Handle Bracket (2)
11	G63—39001	Cond. .022 Mfd. 200 V.		—132277	Handle Bracket Split Rivets (1)
12	G63—39001	Cond. .022 Mfd. 200 V.		—132278	Handle Bracket Split Rivets (2)
13	G63—39001	Cond. .022 Mfd. 200 V.		—132181-1	Rivet, Split Shoulder (2) in Chassis Shelf
14	G65—39001	Cond. .05 Mfd. 200 V.		—132272	Back Panel
15A	B—132144-1	Cond. 45 Mfd. Elect.		—132179-1	Back Clamp (2)
15B		Cond. 35 Mfd. Elect.		—132275	Back Clamp Rivets (2)
15C		Cond. 200 Mfd. Elect.		—132180-1	Back Plate (2)
16	G10—39001	Cond. .0033 Mfd. 600 V.		—132271	Back Plate Rivets (4)
17	G65—39001	Cond. .05 Mfd. 200 V.		—132273	Metal Foot Glides (1)
18	G10—39001	Cond. .0033 Mfd. 600 V.		—132827	Instructions
19	G9—39001	Cond. .00022 Mfd.		—132175-1	Cabinet
20	G10—39001	Cond. .0033 Mfd. 600 V.		—132176-1	Carton
21	G67—39001	Cond. .1 Mfd. 200 V.		—132193-1	Cab. Front and Lens
22	NONE			—132173-1	Dial Face
23	G21—39002	Res. 220 M Ohm 1/4 W.		—132073-1	Knob—Tuning
24	G18—39002	Res. 68 M Ohm 1/4 W.		—132073-3	Knob—V. C.
25	G27—39002	Res. 3.3 Meg. Ohm 1/4 W.		—48720A	"Off" Indicator
26	G28—39002	Res. 2.2 Meg. Ohm 1/4 W.		—132183-1	Speed Nut
27	G8—39002	Res. 1500 Ohm 1/4 W.		—132119-2	Drive Shaft
28A	—132502-1	Res. 1900 Ohm Candohm		—132206-1	Dial Pointer
28B		Res. 140 Ohm		G—132167-2	Drive Shaft Retaining Spring
29	G7—39002	Res. 1000 Ohm 1/4 W.		—51752	Drive Cord Assy.
30	G20—39002	Res. 150 M Ohm 1/4 W.		—132028	Drive Cord Spring
31	G6—39002	Res. 680 Ohm 1/4 W.		—132123	Drive Cord Rivet
32	G6—39002	Res. 680 Ohm 1/4 W.		—16447	Sockets
33	G29—39002	Res. 4.7 Meg. Ohm 1/4 W.		—132822-1	Tube Shields
34	G25—39002	Res. 1 Meg. Ohm 1/4 W.		—49770	Speaker Cable & Socket
35	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.			Trimount Studs
36	NONE				
37	—132825	Speaker			

### ALIGNMENT PROCEDURE

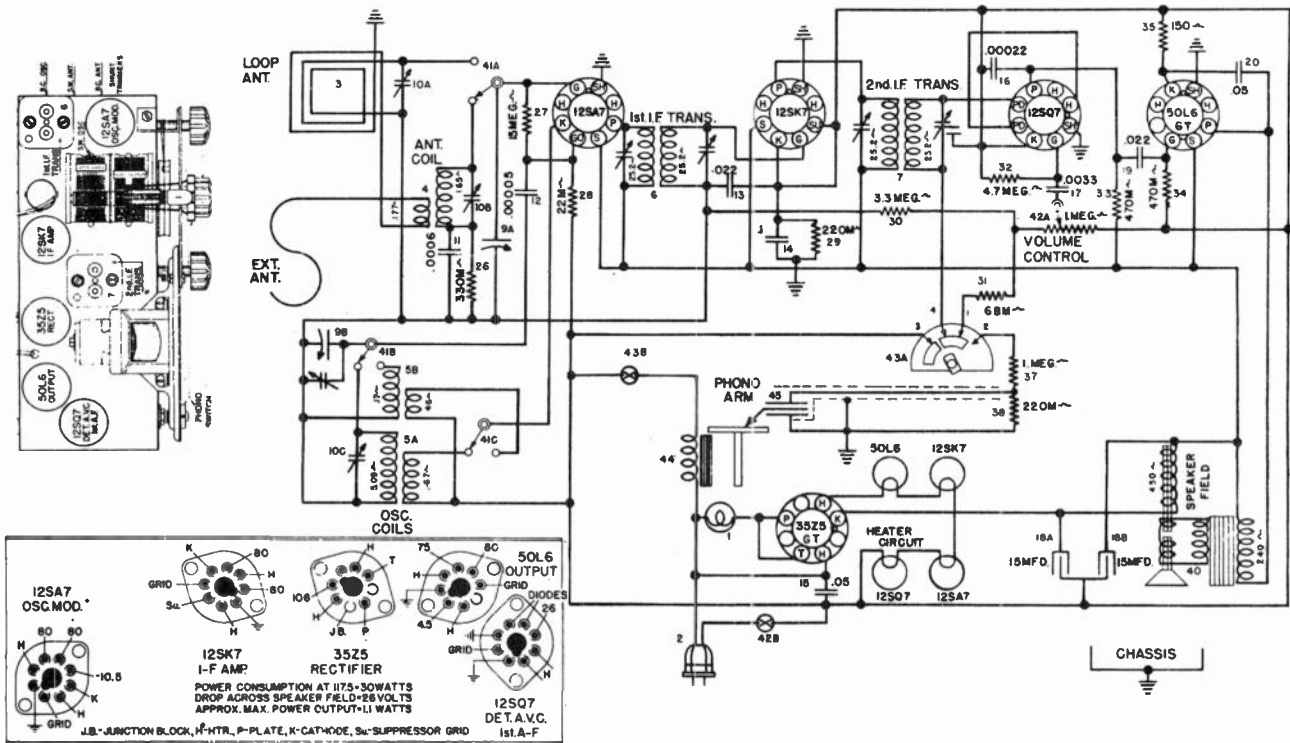
Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	2nd 1-F(1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments  
Maximum power output @ 75 V. "B" — approx. 200 M. W. undistorted

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.  
Power consumption @ 117.5 volts line — 20 Watts

WIRING DIAGRAM



Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb Dial Light 6.3V.	30	G28 —39002	Res. 3.3 Megohm 1/4 W.
	L—132109	Dial Light Socket Assm.	31	G18 —39002	Res. 68,000 Ohm 1/4 W.
	—132099-1	Dial Face.	32	G29 —39002	Res. 4.7 Megohm 1/4 W.
	—132097-5	Dial Pointer.	33	G23 —39002	Res. 470,000 Ohm 1/4 W.
	—132117	Celluloid Dial Lens.	34	G23 —39002	Res. 470,000 Ohm 1/4 W.
	L—132131	Drive Cord Assm.	35	G33 —39002	Res. 150 Ohm 1/4 W.
	—132119	Drive Shaft.	36	NONE	NONE
2	—132300-1	Power Cord & Plug.	37	G25 —39002	Res. 1 Megohm 1/4 W.
	45738	Lock Plate Power Cord.	38	G21 —39002	Res. 220,000 Ohm 1/4 W.
3	—132243-1	Loop Assem. Antenna.	39	NONE	NONE
	—132102	Spacer—Loop Mtg. (2)	40	—49675	Speaker.
	—23843	Screw—Loop Mtg. (2)	41A	—49808	Band Chg. S.W.
4	G234—32000	Coil H.F. Ant.	41B		Band Chg. S.W.
5A	G262—32002	Coil B.C. Osc.	41C		Band Chg. S.W.
5B		Coil H.F. Osc.	42A	—49774	Vol. Control—1 Megohm.
6	G266—32004	1st I.F. Trans.	42B		A. C. Power Switch.
7	G267—32004	2nd I.F. Trans.	43A	—132240-1	Phono Switch.
8	NONE		43B		Phono Switch.
9A	—49737-C	2 Gang Var. Cond. (Antenna Section.)	43C		Phono Switch.
		(Oscillator Section.)			
10A		(Cond. Trimmer B.C. Ant.)			
10B	G—132240-1	(Cond. Trimmer H.F. Ant.)			
10C		(Cond. Trimmer B.C. Osc.)			
11	G21 —34002	Cond. 600 Mmf. Mica.			
12	G5 —39004	Cond. 50 Mmf. Mica.			
13	G63 —39001	Cond. .022 Mfd., 200 V.			
14	G67 —39001	Cond. .1 Mfd., 200 V.			
15	G65 —39001	Cond. .05 Mfd., 200 V.			
16	G9 —39004	Cond. 200 Mmf.			
17	G10 —39001	Cond. .0033 Mfd., 160 V.			
18A	—49664-B	(Cond. 15 Mfd., 140 V. Elect.)			
18B		(Cond. 15 Mfd., 120 V. Elect.)			
19	G63 —39001	Cond. .002 Mfd., 200 V.	44	—130502	Phono Motor Assem.
20	G65 —39001	Cond. .05 Mfd., 200 V.	45	—132248-1	Tone Arm Assem.
21	NONE				
22	NONE				
23	NONE				
24	NONE				
25	NONE				
26	G22 —39002	Res. 330,000 Ohms 1/4 W.			
27	—50671	Res. 15 Megohm 1/4 W.			
28	G15 —39002	Res. 22,000 Ohms 1/4 W.			
29	G21 —39002	Res. 220,000 Ohms 1/4 W.			

FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	2nd 1-F(1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments  
 Maximum power output @ 75 V. "B" — approx. 200 M. W. undistorted

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.  
 Power consumption @ 117.5 volts line — 20 Watts

## CHASSIS MODEL No. 73

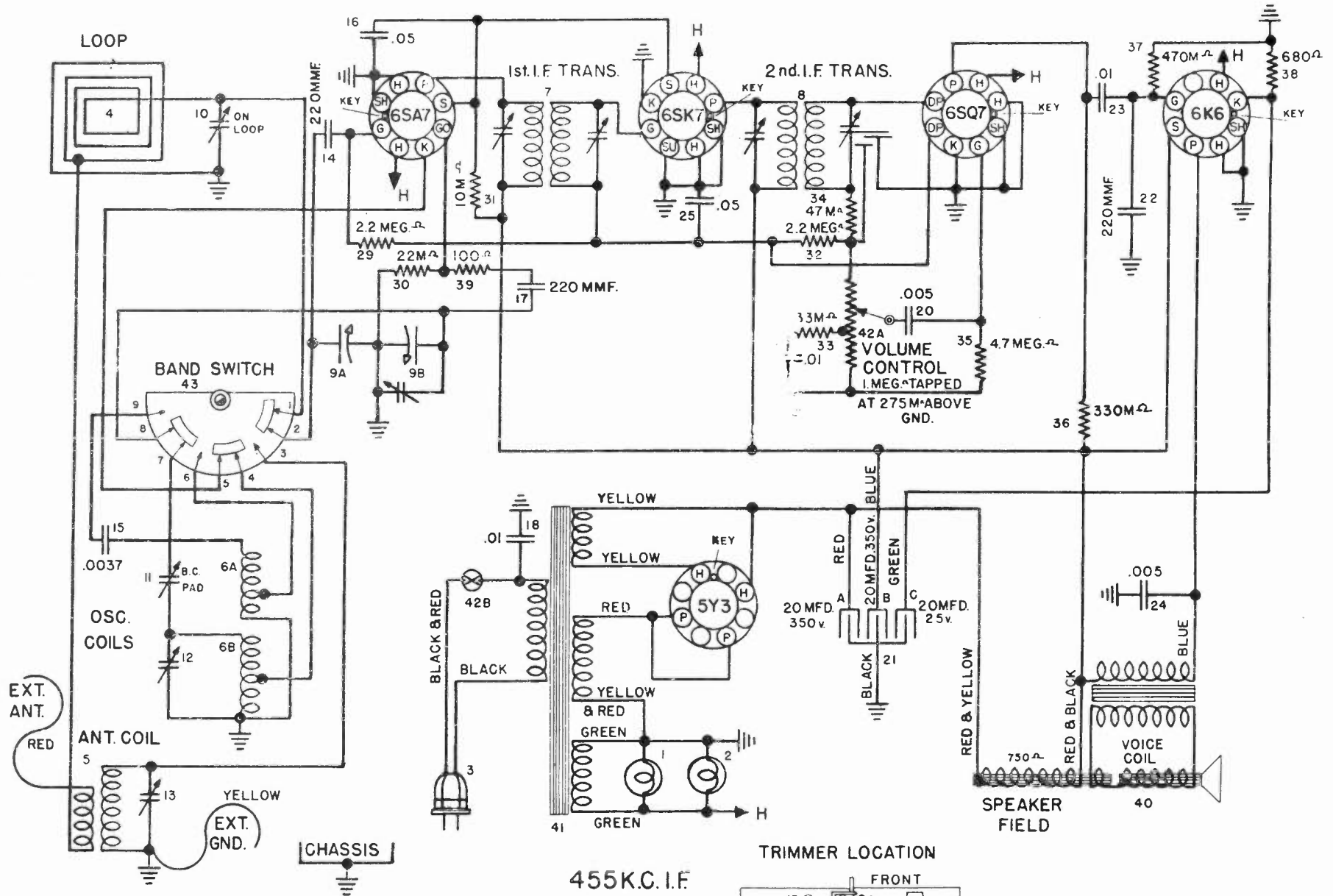
SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SA7—OSC.—Mod.		0	0	180	73		0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	73	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	68	6.3 A. C.	0
6K6G or GT—Output		0	0	160	180	0	180	6.3 A. C.	9
5Y3G—Rectifier		0	225		270 A.C.		270 A. C.		225

Item	Part No.	Description	Item	Part No.	Description
1	43567	Dial Light 6 V.	23	39001-G37	Cond. .01 Mf. 400 V. Paper.
2	43567	Dial Light 6 V.	24	39001-G11	Cond. .005 Mf. 600 V. Paper.
	49829-B	Lock Spring (Drive Shaft) (1)	25	39001-G65	Cond. .05 Mf. 200 V. Paper.
	49637-21	Light Socket Assem.	26		None.
	131930	Drive Shaft Bearing	27		None.
	132641-1	Drive Shaft.	28		None.
	G-132167-13	Drive Cord Assem.	29	39002-G27	Res. 2.2 Megohm ¼ W.
	132320-1	Dial Pointer.	30	39002-G15	Res. 22,000 Ohms ¼ W.
	132231-7	Dial Face Assem.	31	47100	Res. 10,000 Ohms 2 W.
	132688-1	Dial Lens.	32	39002-G27	Res. 2.2 Megohm ¼ W.
3	132300-1	Power Cable & Plug.	33	39002-G16	Res. 33,000 Ohms ¼ W.
4	G-132675-2	Loop Ant. Assem.	34	39002-G17	Res. 47,000 Ohms ¼ W.
5	32000-G241	S. W. Ant. Coil.	35	39002-G29	Res. 4.7 Megohm ¼ W.
6A	32000-G274	S. W. OSC. Coil.	36	39002-G22	Res. 330,000 Ohms ¼ W.
6B		B. C. OSC. Coil.	37	39002-G23	Res. 470,000 Ohms ¼ W.
7	32004-G282	1st I. F. Trans.	38	39002-G37	Res. 680 Ohm ½ W.
8	32004-G283	2nd I. F. Trans.	39	39002-G1	Res. 100 Ohm ¼ W.
9A	132150-2	Var. Cond. R. F. Sec.	40	132683-5	Speaker.
9B		Var. Cond. Osc. Sec.		49853	Grommet (3) (Speaker)
10		Trimmer Cond. Ant. Loop.		48828-2	Speaker Mtg. Plate (1)
11		Trimmer Cond. B. C. Pad.		49742	Screw, Spk. Mtg. (2)
12		Trimmer Cond. B. C. Osc.		46460	Headed Bushing—Spk. (3)
13		Trimmer Cond. S. W. Ant.		132648-1	Screw-dial Face Mtg. (2)
14	39004-G9	Cond. 220 Mmf. Mica.		132604	Speaker Gasket (1)
15	34005-G17	Cond. 3700 Mmf. Mica.	41	49838	Power Trans.
16	39001-G41	Cond. .05 Mf. 400 V. Paper.	42A	49793-1	Volume Control 1 Meg.
17	39004-G9	Cond. 220 Mmf. Mica.	42B		A. C. Switch.
18	30805	Cond. .01 Mf. 120 V. A. C.	43	49772-1	Band Change Switch.
19	39001-G61	Cond. .01 Mf. 200 V. Paper.		49817	Trans. Suppt. Strap
20	39001-G11	Cond. .005 Mf. 600 V. Paper.		5096	Nut
21A	132669-1	Cond. 20 Mfd. 350 V. Elect.		134015-1	TF Cabinet.
21B		Cond. 20 Mfd. 350 V. Elect.		132707-1	Tack Point—Dial Lens (16)
21C		Cond. 20 Mfd. 25 V. Elect.		39220-36A	Screw—Chassis Mtg. (3)
22	39004-G9	Cond. 220 Mmf. Mica.		45020	Washer—Chassis Mtg. (3)

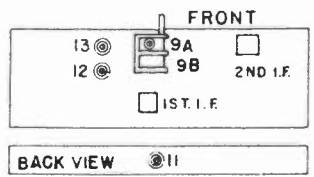
### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						



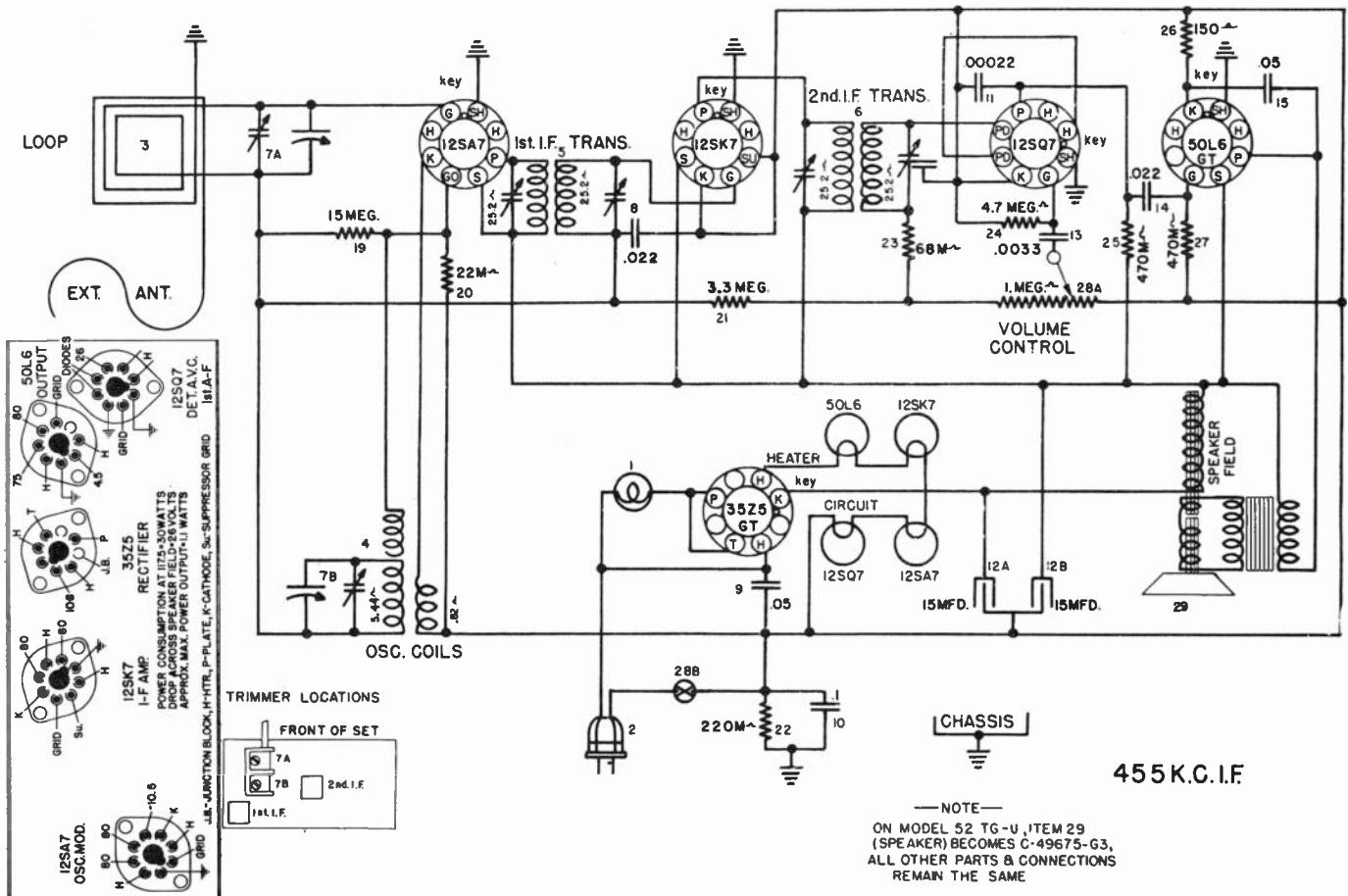
455K.C. I.F.

TRIMMER LOCATION





# CHASSIS No. 74-74U



## PARTS LIST — MODELS 74 AND 74-U CHASSIS

Figures in first column refer to parts in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb Dial Light 6.3V.	16	NONE	
	L-132109	Dial Light Socket Assm.	17	NONE	
	—132090-2	Dial Frce.	18	NONE	
	—132097-5	Dial F. Jinter.	19	—50671	Res. 15 Megohm 1/4 W.
	—132117-2	Celluloid Dial Lens.	20	G15 —39002	Res. 22,000 Ohms 1/4 W.
	L-132131	Drive Cord Assm.	21	G28 —39002	Res. 3.3 Megohm 1/4 W.
	—132119-4	Drive Shaft.	22	G21 —39002	Res. 220,000 Ohms 1/4 W.
	—51071	Retaining Ring—Dr. Shaft.	23	G18 —39002	Res. 68,000 Ohm 1/4 W.
	—132300-1	Power Cord & Plug.	24	G29 —39002	Res. 4.7 Megohm 1/4 W.
	—45735	Lock Plate Power Cord.	25	G23 —39002	Res. 470,000 Ohm 1/4 W.
3	LB-132110	Loop Assm. Antenna.	26	G33 —39002	Res. 150 Ohm 1/4 W.
	—132102	Spacer—Loop Mtg. (2)	27	G29 —39002	Res. 470,000 Ohm 1/4 W.
	—23843	Screw—Loop Mtg. (2)	—132138	Bracket—Speaker Mtg.	
4	G261 —32002	Coil B. C. Osc.	—49774	Vol. Control 1 Meg.	
5	G266 —32004	1st I. F. Trans.	—49675-2	Power Switch.	
6	G267 —32004	2nd I. F. Trans.	—49675-3	Speaker—74-U only.	
7A	—49736-1	2 Gang Var. Cond. { Antenna Sec.	—132136-2	Cabinet—Brown.	
7B		{ Oscillator Sec.	—48200	Trimount Stud—Dial Lens Mtg. (6)	
8	G63 —39001	Cond. .022 Mfd., 200V.	—132124	Trimount Stud—Cabt. Back (2)	
9	G65 —39001	Cond. .05 Mfd., 200V.	—132137	Shipping Carton.	
10	G67 —39001	Cond. .1 Mfd., 200V.	—131517	Knob (2 req.)	
11	G9 —39004	Cond. 200 Mmf., Mica.	—30409	Washer—Chassis Mtg. (3)	
12A	—49664-B	{ Cond. 15 Mfd., 140V., Elect.	—130490	Screw—Chassis Mtg. (3)	
12B		{ Cond. 15 Mfd., 120V., Elect.	—132123	Socket—8 Prong (3)	
13	G10 —39001	Cond. .0033 Mfd., 160V.	—49693	Insulator—Socket (3)	
14	G63 —39001	Cond. .022 Mfd., 200V.			
15	G65 —39001	Cond. .05 Mfd., 200V.			

## ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	1st I-F(2) 2nd I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1650 KC.	Antenna Lead	BC	Fully Open	B.C."Osc."	Adjust for maximum output. Gang does not have to tune through signal
3.	.0001 MF.	1400 KC.	Antenna Lead	BC	140 Dial	B.C."Ant."	Adjust for maximum output.

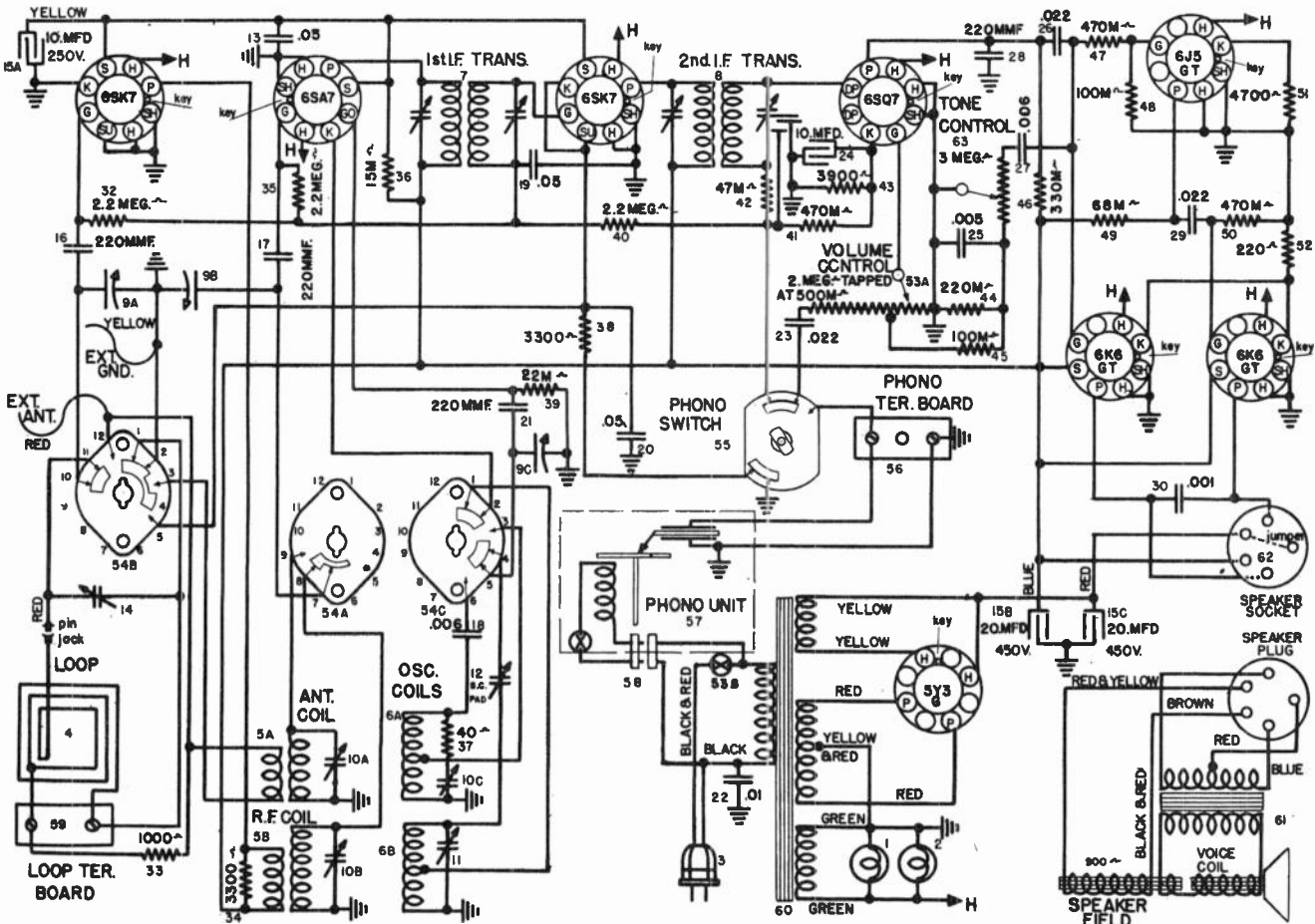
Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.B.C. circuit.

# CHASSIS MODEL NO. 75

## Signal Generator

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
7.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7GT—R. F. Amplifier.....		0	0	0	0	0	82	6.3 A. C.	210
6SA7GT—OSC.—Mod.....		0	0	210	82BC	0	0	6.3 A. C.	0
6SK7GT—I. F. Amplifier.....		0	0	0	0	-6.5BC - -OSW -	82	6.3 A. C.	210
6SQ7—Det. A. S. C. 1st A. F.....		0	0	1.4	0	0	78	6.3 A. C.	0
6J5GT—Phase Inverter.....		0	0	125	N. C.	0	0	6.3 A. C.	5.2
6K6GT(2)—Output.....		0	0	200	210	0	0	6.3 A. C.	13
5Y3G—Rectifier.....		N. C.	300	N. C.	338	J. B.	338 A. C.	J. B.	300



455K.C.I.F

**PARTS LIST, MODELS 82CP AND 82CQ—CHASSIS MODEL No. 75**

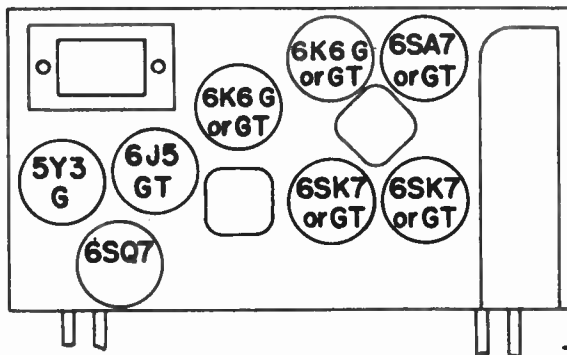
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Dial Light, 6 V.	44	G21 -39002	Res. 220 M. Ohm 1/4 W. Ins.
2	-43567	Dial Light, 6 V.	45	G19 -39002	Res. 100 M. Ohm 1/4 W. Ins.
	-132491-1	Escutcheon and Dial Glass—82 CQ	46	G22 -39002	Res. 330 M. Ohm 1/4 W. Ins.
	-132491-2	Escutcheon and Dial Glass—82 CP	47	G23 -39002	Res. 470 M. Ohm 1/4 W. Ins.
	-130158	Screw—Escutcheon	48	G19 -39002	Res. 100 M. Ohm 1/4 W. Ins.
	-132231-4	Dial Back Plate	49	G18 -39002	Res. 68 M. Ohm 1/4 W. Ins.
	-132374-1	Pointer Shaft	50	G23 -39002	Res. 470 M. Ohm 1/4 W. Ins.
	-132481-1	Pointer	51	G11 -39002	Res. 47 M. Ohm 1/4 W. Ins.
	-49829-B	Lock Spring	52	G65 -39002	Res. 220 Ohm 1 W. Ins.
	-132167-5	Drive Cord Assem.	53A	-132461-1	Volume Control 2 Megohm.
	-132300-2	Power Cable and Plug.	53B		A. C. Power Switch.
	-132493-2	Loop and Strap Assem.	54A	-132496-2	Band Switch.
3			54B		Band Switch.
4	G237-32000	H. F. Ant. Coil	54C		Band Switch.
5A		B. C. R. F. Coil	55	-132506-1	Phono. Switch.
5B	G271-32002	H. F. Osc. Coil	56	G64 -26719	Phono. Ter. Board.
6A		B. C. Osc. Coil	57		Phono. Unit & Rec. Chgr.
6B	G274-32004	1st I. F. Trans.	58	-132454-2	Cable—Phono. Unit & Rec. Chgr.
7	G275-32004	2nd I. F. Trans.	59	G63 -26719	Loop Ant. Ter. Board.
8	-49929	Ant. Sec.	60	-132513-2	Power Trans. (110 V.-50-60 Cy.)
9A		R. F. Sec. } Var. Cond.	61	-130146-4	Speaker—82CQ.
9B		Osc. Sec. }	62	-130146-3	Speaker—82CP.
9C			63	G103-28807	Speaker Socket.
10A	B-132462-1	Trimmer Cond. H. F. Ant. Coil		130741-A	Tone Control 3 Megohm.
10B		B. C. R. F. Coil		-132754	Cabinet Door—L. H. 82CQ.*
10C		H. F. Osc. Coil		-132753	Cabinet Door—R. H. 82CQ.*
11	-49652-2	Trimmer Cond. B. C. Osc. Coil		-132755	Cabinet Lid—82CP.*
12	-49652-3	Padder B. C. Osc.		-132380-1	Cabinet 82CP.*
13	G41-39001	Cond. .05 Mf. 400 V. Paper		-132486-1	Cabinet 82CQ.*
14	B-132462-2	Trimmer Cond. Loop Ant.		-132381-1	Carton 82CP.
15A	-132484-1	Cond. 10 Mfd. 250 V. Elect.		-132487	Carton 82CQ.
15B		Cond. 20 Mfd. 450 V. Elect.		-132756	Hinge (3)—82CP.*
15C		Cond. 20 Mfd. 450 V. Elect.		-132752	Hinge (4)—82CQ.*
16	G9-39004	Cond. 220 Mmf. Mica.		-130153	Knob—Tuning.
17	G3-39001	Cond. 220 Mmf. 600 V. Paper		-130154	Knob—Volume.
18	G36-34005	Cond. .006 Mf. Mica.		-130155	Knob—Tone.
19	G65-39001	Cond. .05 Mf. 200 V. Paper		-132382	Knob—B. S. S.
20	G65-39001	Cond. .05 Mf. 200 V. Paper.		-130254	Knob—Phono. Sw.
21	G3-39001	Cond. 220 Mmf. 600 V. Paper.		-42911	Paper Washer—Knob (5)
22	-30805	Cond. .01 Mf. 120 V. A. C.		-130423	Br kt Assem.—R. H. 82CP.
23	G63-39001	Cond. .022 Mf. 200 V. Paper.		-130426	Br kt Assem.—L. H. 82CP.
24	-132450-1	Cond. 10 Mfd. Elect.		-132489-1	Br kt & Roller Assem.—82 CQ.
25	G11-39001	Cond. .005 Mf. 600 V. Paper.		-132489-2	Br kt & Roller Assem.—82CQ.
26	G39-39001	Cond. .022 Mf. 400 V. Paper.		-132538-1	Bracket Only—R. H. 82CQ.
27	G11-39001	Cond. .006 400 V. Paper.		-132539-1	Bracket Only—L. H. 82CQ.
28	G3-39001	Cond. 220 Mmf. 600 V. Paper.		-132544-1	Roller (2) 82 CQ.
29	G39-39001	Cond. .022 Mf. 400 V. Paper.		-132541-1	Roller Stud (2) 82CQ.
30	G7-39001	Cond. .001 Mf. 600 V. Paper.		-132113	Screw (9)
31	None			-45580	Grommet—Spkr. (82CP & CQ) & Chassis (82CP) Mtg.
32	G27-39002	Res. 2.2 Megohm 1/4 W. Ins.		-45056	Grommet—Chassis Mtg. (82CQ)
33	G7-39002	Res. 1000 Ohm 1/4 W. Ins.		-132379-1	Instruction.
34	O10-39002	Res. 3300 Ohm 1/4 W. Ins.		-131512	Headed Bushing.
35	G27-39002	Res. 2.2 Megohm 1/4 W. Ins.		-23880-B	Nut
36	-130593	Res. 15 M. Ohm 2 W.		N-5096	Thumb Screw.
37	132482-1	Res. 40 Ohm 1/4 W. Ins.		G-132523-1	Record Changer Assem. 82CP.
38				-132488	Record Changer Assem. 82CQ.
39	G15-39002	Res. 22 M. Ohm 1/4 W. Ins.		-52109	Tube Socket (8)
40	G27-39002	Res. 2.2 Megohm 1/4 W. Ins.			
41	G23-39002	Res. 4.70 M. Ohm 1/4 W. Ins.			
42	G17-39002	Res. 47 M. Ohm 1/4 W. Ins.			
43	-132514-1	Res. 3900 Ohm 1/4 W. Ins.			

\*NOTE—In ordering complete cabinets or cabinet parts always specify cabinet model number stamped on rear of cabinet.

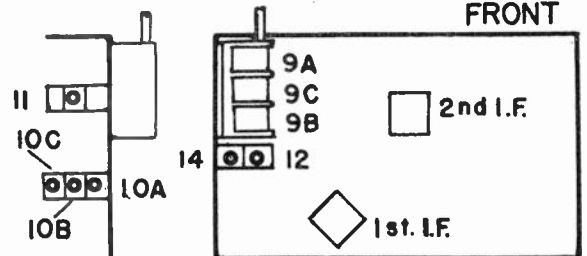
**RECORD CHANGER PARTS**

Part No.	Description	Part No.	Description
-132728	Turn Table Only.	-132743	Record Changer Shelf Cap.
-132729	Turntable Nut.	-132744	Record Clamp (Plastic)
-132438-1	Offset Center Post.	-132745	Record Clamp Spring.
-132390-1	Changer Mounting Springs. (6)	-132746	Record Clamp Spring Pin.
-132389	Changer Mounting Screws. (3)	-132763	"Z" Bracket Spring
-132388-1	Changer Mtg. Nut (3)	-132765	Size Change Lever Spring.
-132732	Motor Only, 60 Cycle.	-132764	Lever Link Spring.
-132733	Idler Wheel.	-132767	A. C. Switch & Cover.
-131032	50 Cycle Spring.	-132768	A. C. Switch Lever Wire Spring.
-132735	Knob (Plastic—"Off-On")	-132769	Spring Washer.
-132736	Escutcheon (Plastic)	-132770	Bearing Assembly.
-132737	Tinnerman Clamps for Mtg.	-132771	Cork Washer.
-132741	Arm Rest.	-132772	Thrust Bearing.
-132742	Arm Rest Cap (Plastic)	-132773	Starting Bracket Spring.
-132738	Pickup Crystal Cartridge	-132774	Trigger Bracket Spring.
-132739	Needle Screw (Phillips Head)	-132526-1	Pickup Arm Tension Spring.
-132740	Mounting Screw (Crystal Cartridge)	-132549-1	Wrap Around—82CQ.
-132734	Pickup Arm Adjusting Screw.	-132542-1	Roller (6)—82CQ.
-132760	Pickup Arm Adjusting Spring.	-132543-1	Roller Stud (6)—82CQ.
-132526-1	Pickup Arm Tension Spring.	-32721-2	Acorn Nut (2)—82CQ.
-132762	Pickup Arm Pivot Pin.	-132659-1	Needle Assem. (sapphire)

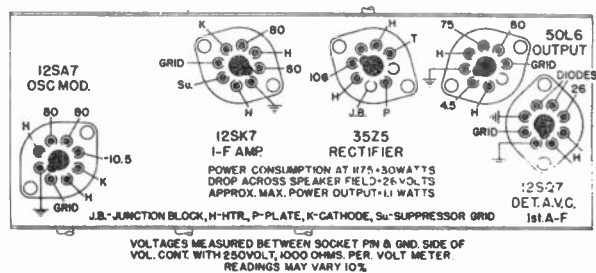
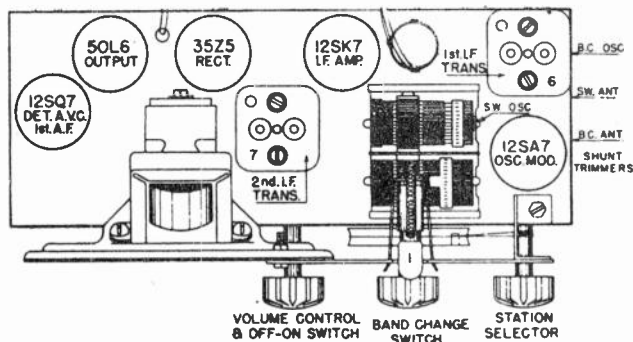


140

**TRIMMER LOCATIONS**



## MODELS 76 AND 77 CHASSIS



### ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	Signal Generator .0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	2nd I-F(2) 1st L-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead (red)	S.W.	Fully Open	"S.W." "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead (red)	S.W.	15 on Dial	"S.W." "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0001 MF.	1650 KC.	Antenna Lead (red)	BC	Fully Open	"B.C." "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
5.	.0001 MF.	1400 KC.	Antenna Lead (red)	BC	140 Dial	"B.C." "Ant."	Adjust for maximum output.

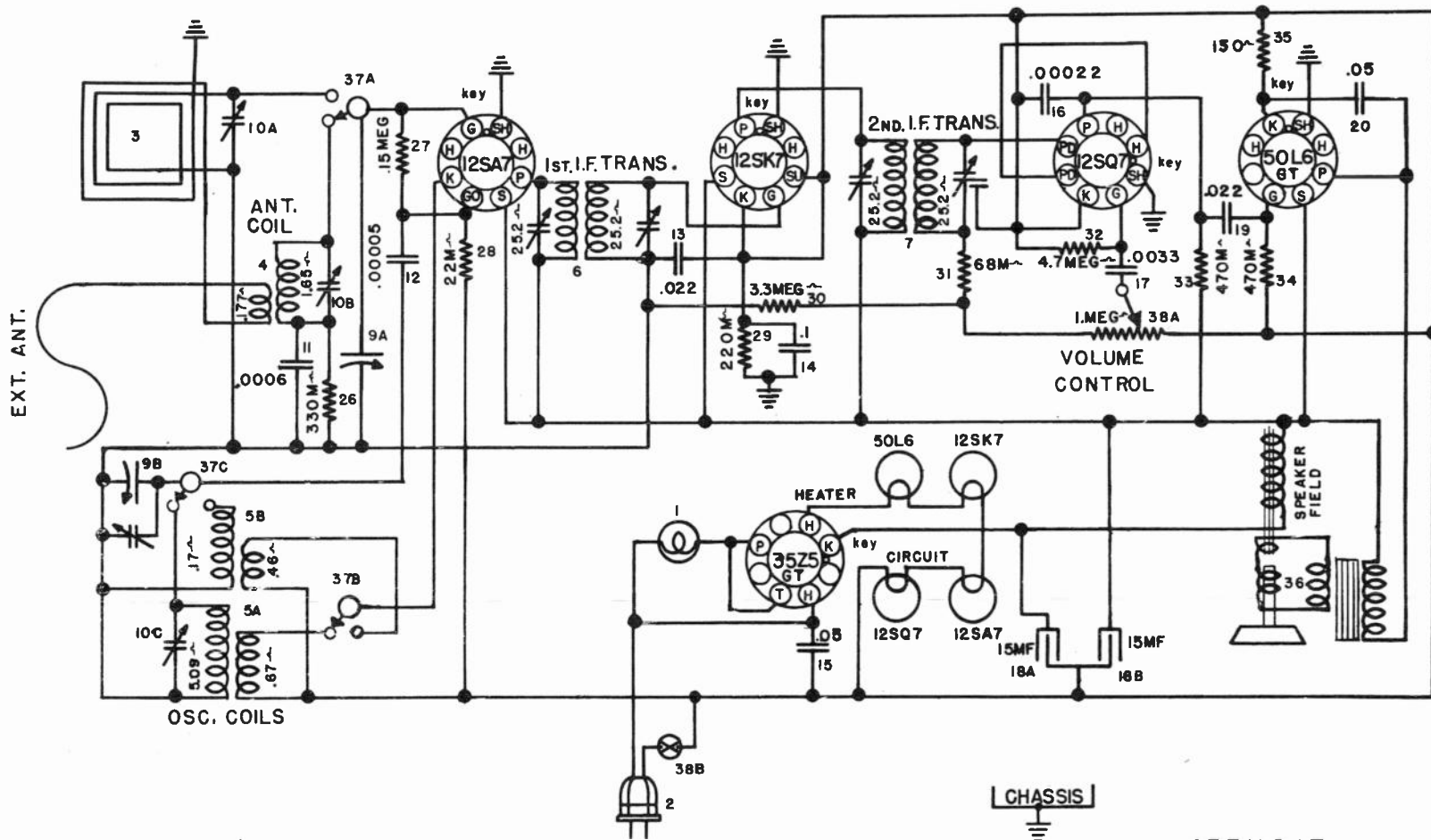
When aligning the shortwave band "OSC" trimmer, care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

Figures in first column refer to parts in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb Dial Light 6.3V.	26	G22 —39002	Res. 330,000 Ohms ¼ W.
	L—132109	Dial Light Socket Assm.	27	—50671	Res. 15 Megohm ¼ W.
	—132099	Dial Face	28	G15 —39002	Res. 22,000 Ohms ¼ W.
	—132097	Dial Pointer	29	G21 —39002	Res. 220,000 Ohms ¼ W.
	—132117	Celluloid Dial Lens	30	G28 —39002	Res. 3.3 Megohm ¼ W.
	L—132131	Drive Cord Assm.	31	G18 —39002	Res. 68,000 Ohm ¼ W.
	—132119	Drive Shaft	32	G29 —39002	Res. 4.7 Megohm ¼ W.
2	—49775	Power Cord & Plug	33	G23 —39002	Res. 470,000 Ohm ¼ W.
	—45738	Lock Plate Power Cord	34	G23 —39002	Res. 470,000 Ohm ¼ W.
3	LB—132110	Loop Assem. Antenna—77 Chassis	35	G33 —39002	Res. 150,000 Ohm ¼ W.
	—132245	Loop Assem. Antenna—76 Chassis	36	G2 —49675	Speaker
	—132102	Spacer—Loop Mtg. (2)		G3 —49875	Speaker—"U" Models
	—23843	Screw—Loop Mtg. (2)		—132138	Bracket—Speaker Mtg.
4	G234 —32000	Coll H.F. Ant.	37A	—49808-A	Band Change Sw.
5A	G262 —32002	Coll B.C. Osc.	37B		
5B		Coll H.F. Osc.	37C		
6	G266 —32004	1st I.F. Trans.	38A	—49774	Vol. Control 1 Meg.
7	G267 —32004	2nd I.F. Trans.	38B		Power Switch
8	NONE		39	NONE	
9A	—49737-C	2 Gang Var. Cond. { Antenna Section Oscillator Section	40	NONE	
9B					
10A	L—132107	Cond. Trimmer B.C. Ant.		—132019	Trimmer Only—2nd I.F. Assm.
10B		Cond. Trimmer H.F. Ant.		—132136	Cabinet—Brown Model TD
10C		Cond. Trimmer B.C. Osc.		—48200	Trimount Stud—Dial Lens Mtg. (6)
11	G21 —34002	Cond. 600 Mmf. Mica		—132124	Trimount Stud—Cabt. Back (2)
12	G5 —34002	Cond. 50 Mmf. Mica		—132137	Shipping Carton—52TD & 52TE
13	G63 —39001	Cond. .022 Mfd., 200 V., Paper	W1—132127	Knob—Brown (3 Req.) 52TD & 52TF	
14	G67 —39001	Cond. .1 Mfd., 200 V., Paper	W2—132127	Knob—Ivory (3 Req.) 52TE	
15	G65 —39001	Cond. .05 Mfd., 200 V., Paper		—132118	Cabinet—Ivory—Bakelite 52TE, 52TF-U
16	G9 —39004	Cond. 200 Mmf., Mica		—132098	Cabinet—Wood—52TF, 52TF-U
17	G10 —39001	Cond. .0033 Mfd., 160 V., Paper		—132100	Shipping Carton—52TF—52TF-U
18A	—49664-B	{ Cond. 15 Mfd., 140 V., Elect. { Cond. 15 Mfd., 120 V., Elect.	S—80	—132242	Cabinet Back—52TF
19	G63 —39001	Cond. .002 Mfd., 200 V., Paper		—132135	Screw—52TF Back Mtg.
20	G65 —39001	Cond. .05 Mfd., 200 V., Paper		—130126	Bottom Assembly (U-77 & U-76 Chassis)
21	NONE			—130127	Hole Cover (U-77 & U-76 Chassis)
22	NONE			—45020	Switch Hole Cover (U-77 & U-76 Chassis)
23	NONE			—130558	Washer—Chassis Mtg. (3) 52TF
24	NONE			—30409	Screw—Chassis Mtg. (3) 52TF
25	NONE			—130490	Washer—Chassis Mtg. (3) 52TD & 52TE
				—132123	Screw—Chassis Mtg. (3) 52TD & 52TE
				—49693	Socket—8 Prong (5)
					Insulator—Socket (3)

**MODELS 76, 77  
WIRING DIAGRAM**



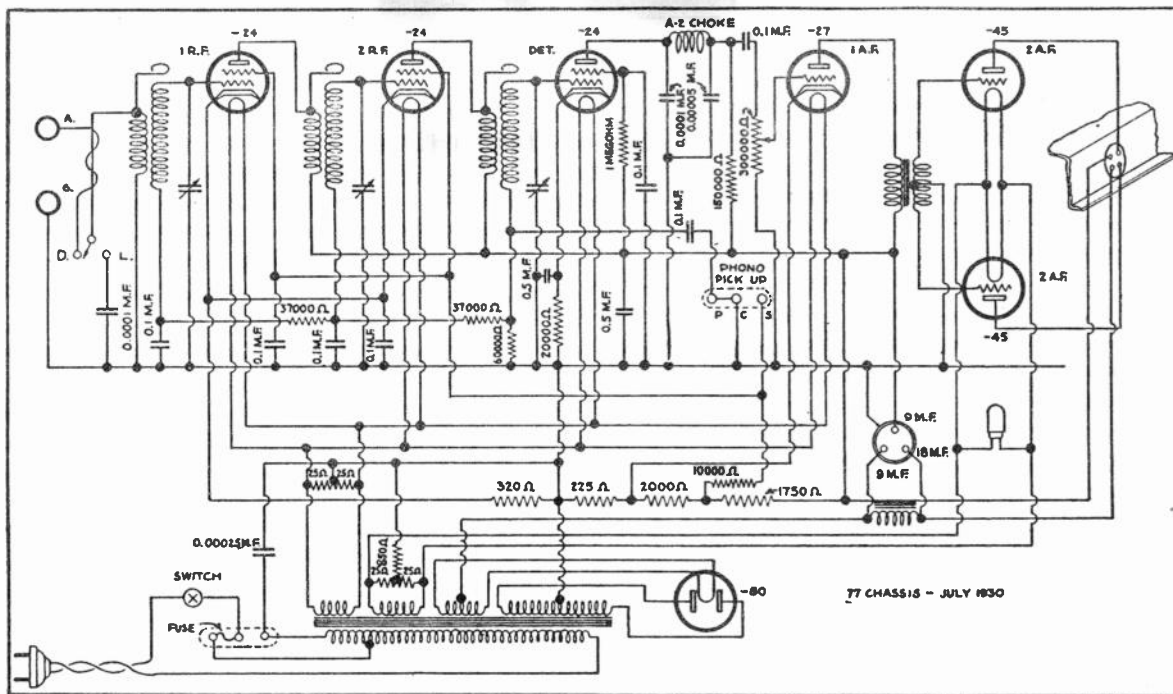
NOTE-ON 52TD-U, 52TE-U & 52TF-U, ITEM 36 (SPEAKER) BECOMES G3-49675, ALL OTHER PARTS & CONNECTIONS REMAIN THE SAME

NOTE-ON 52TF, ITEM 3 (LOOP ANT.) BECOMES GB132245-1 ALL OTHER PARTS & CONNECTIONS REMAIN THE SAME.

455 K.C.I.F



# Model 77



Qty.	Part No.	Description
1	D-20320	Chassis
1	W-20380	A. F. Transformer
4	W-7873	Sockets (5 prong)
4	W-7871	Sockets (4 prong)
5	W-7874	Socket Guide (5 prong)
3	W-7872	Socket Guide
1	W-20444	Antenna R. F. Transformer
2	W-20445	Interstage R. F. Transformer
3	W-7272-A	Screen Grid Connections
3	B-7558	R. F. Coil Shield
1	W-20439	Variable Condenser Gang Complete
	W-20456	Dial Assembly
	W-20443	Inner Bracket
	W-20209	Outer Bracket
	W-20431	Drive Pulley
	W-20435	Spring Washer
	W-5749	Drive Rope
	W-20434	Dial Stop
	W-20376	Shadow Box
1	C-20455	R. F. Shield Assembly
1	W-20381	Filter Choke
1	W-20341	Mershon Condenser (18-9-9)
1	W-4704	Stiffened Sleeving (5 3-4 in. long)
2	W-6762	Mounting Clamp
1	W-20453	Condenser Bottom Support
1	W-20150	Power Transformer (110 v. 60 c.)
	W-20469	Power Transformer (220 v. 25 c.)
	W-20470	Power Transformer (110 v. 25 c.)
1	W-20496	Fuse Panel
1	W-4639	Fuse (2 amp.)
1	C-20451	Power Unit Shield
<b>PARTS UNDER CHASSIS</b>		
1	W-4302-D	Plate Choke
1	W-7847	.0001 Mfd. Fixed Condenser
1	W-20389	.00005 Mfd. Fixed Condenser

Qty.	Part No.	Description
1	W-20447	.1 Mfd. 3 Paper Fixed Condenser
1	W-20454	Mounted Resistor Assembly
	W-20090	Mounting Strip
	W-20464	1 megohm Resistor (Brown green spot)
	W-5735	150000 ohm Resistor (Brown, yellow spot)
	W-4923	60000 ohm Resistor (Blue, orange spot)
	W-5370	20000 ohm Resistor (Red, orange spot)
1	W-20361	Mounted Resistor Assembly
	W-20467	Mounting Strip
	(2) W-7287	37000 ohm Resistor (Orange, violet)
	W-4921	10000 ohm Resistor (Brown, Orange spot)
1	W-7944	.1-1 Mfd. Fixed Condenser
1	W-20266	Terminal Strip (P. C. S.)
1	W-20304	Volume Control
1	W-20449	.1-5 Mfd. Fixed Condenser
1	W-20448	.1 Mfd. 2 Paper Fixed Condenser
1	W-20179	Support Bracket
1	W-20446	.1-5-1 Mfd. Fixed Condenser
1	W-20264	Terminal (A & G)
1	W-20452	Fixed Resistance (Candohms)
1	W-21009	On, off & tap Switch Assembly
		On, off Switch only
		Tap Switch Only
1	W-7847	.0001 Mfd. Fixed Condenser
1	W-7084	850 ohm Fixed Resistor
1	W-20300	Fixed Resistance Assembly (8 lugs)
1	W-4924	.00025 Mfd. Fixed Condenser
1	B-8867	Cable & Plug
7	W-20455	Spring Clips
1	C-20180	Bottom
1	W-20167	Knob (large)
2	W-20482	Knob (small)

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

# CROSLY EXPORT MODELS 78-CJ AND 78-CK

## ALIGNMENT PROCEDURE

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Screen of 8K6
Generator Ground Connection . . . . .	To Chassis or Ground Lead
Dummy Antenna to be in series with Generator Output . . . . .	See chart below
Position of Volume Control . . . . .	Fully on
Position of Tone Control . . . . .	Music—center position

## ALIGNMENT CHART

Alignment Sequence	Dummy Antenna	SIGNAL GENERATOR Frequency Setting	Input Connection To Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 Mf.	455 Kc.	Antenna Lead	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for maximum. Adjust for maximum.
2.	400 Ohm (Carbon)	22.5 Mc.	Antenna Lead	S. W.	Fully open	No. 7B "OSC" Trimmer	Adjust for peak; gang does not have to tune through signal.
3.	400 Ohm (Carbon)	22 Mc.	Antenna Lead	S. W.	Approx. 22 on dial	No. 8 "ANT" Trimmer	Adjust for maximum output while rocking gang through signal.
4.	400 Ohm (Carbon)	11.3 Mc.	Antenna Lead	Police	Fully open	No. 9D "OSC" Trimmer	Adjust for peak; gang does not have to tune through signal.
5.	400 Ohm (Carbon)	11 Mc.	Antenna Lead	Police	Approx. 11 on dial	No. 9B "ANT" Trimmer	Adjust for maximum output while rocking gang through signal.
6.	.0002 Mf.	1650 Kc.	Antenna Lead	B. C.	Fully open	No. 9C "OSC" Trimmer	Adjust for peak; gang does not have to tune through signal.
7.	.0002 Mf.	1400 Kc.	Antenna Lead	B. C.	Approx. 140 on dial	No. 9A "ANT" Trimmer	Adjust for maximum output to not touch Osc. trimmer.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

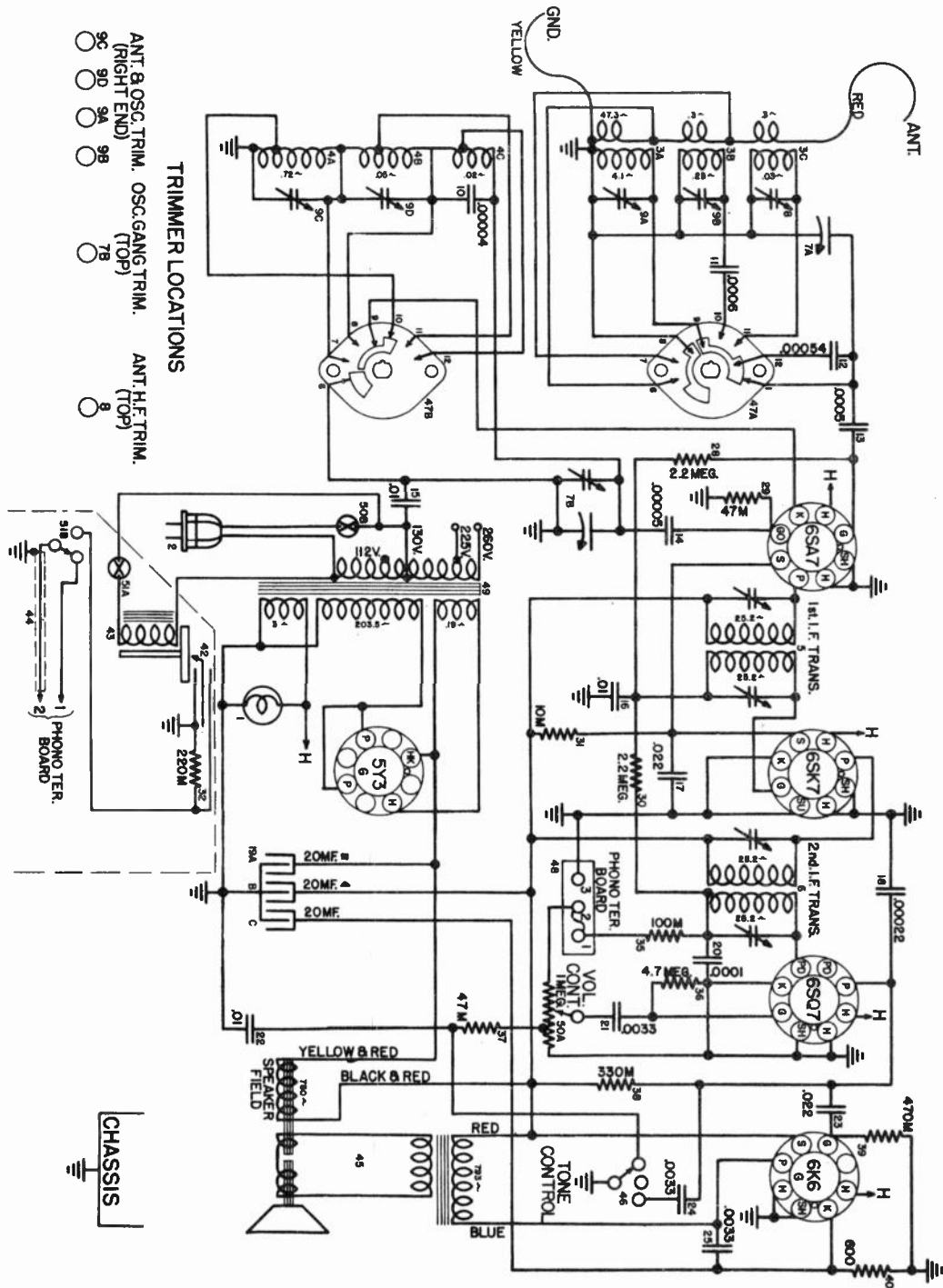
## PARTS LIST — MODEL 78CJ - 78CK

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb, Dial Light	40	—38918	Res. 600 Ohm ½ Ins.
	G12 —49637	Dial Light Socket Assembly	41	NONE	
	—131966	Dial and Support	42	—132041	Tone Arm Assm.—78CK only
	—49647	Drive Shaft	43	—130582	Phono Motor—60 cy.—110 V.—78CK only
	—28032-B	Retaining Spring		—130863	Phono Motor—60 cy.—220 V.—78CK only
	—49846	Dial Pointer		—130864	Phono Motor—50 cy.—220 V.—78CK only
	—50607-C	Spring	44	G328—34403	Shielded Lead Assm.—78CK only
	G39 —41852	Drive Cord (23" or 58.5 cm.)	45	G4 —49792-A	Speaker
	—45769-A	Power Cord and Plug		—130332-A	Rubber Bumpers (2 req.)
2	G233—32000	Ant. Coil 540-1600 Kc Band		—130323	Spkr. Mtg. Plate
3A		Ant. Coil 4.8-11 Mc. Band		—130310	Spkr. Support Brkt.
3B		Ant. Coil 11-22.5 Mc. Band		—130165	No. 832 x ¼ Hex. Head Mch. Scr.
3C		Osc. Coil 540-1600 Kc		—43885	No. 8 x ¼ Hex. Hd. P.K. Scr.
4A	G260—32002	Osc. Coil 4.8-11 Mc.		—131977	Switch—Tone Control
4B		Osc. Coil 11-22.5 Mc.	46	—45508	No. 8 x 5-16 Hex. Hd. P.K. Scr., 10 req.
4C		Osc. Coil 11-22.5 Mc.		G1 —130264	Switch Arm Hub Assm.—(T.C.)
5	G250—32004	1st I.F. Trans.		G3 —130264	Shaft Bearing Assm.—(T.C.)
6	G251—32004	2nd I.F. Trans.	47AB	—131931-A	Switch, Band Chg.
7A	—49879-C	Var. Gang Cond.—Ant. Section	48	G58 —26719	Ter. Board, Phono
7B		Osc. Section	49	—130514	Transformer, Power
	—45620	Headed Bushing—Gang Mtg.	50A	—130044-A	Vol. Control, 1 Meg.
8	—131925	Con. Trimmer SW No. 2 Ant.	50B		Power Switch
9A	MGS—131926	Cond. Trimmer St'd Bd. Ant.	51AB	—131503	Phono-Radio Switch, 78CK only
9B		Cond. Trimmer SW No. 1 Ant.		—131987	CJ Cabinet
9C		Cond. Trimmer St'd Bd. Osc.		—131200	Carton—CJ Cabinet
9D		Cond. Trimmer SW No. 1 Osc.		—131246	Knob—Vol. and Tone Control (2 req.)
10	G2 —131502	Cond. 40 Mmf. Mica		—41742	Knob Spring (Vol. and Tone Controls)
11	G19 —131502	Cond. 600 Mmf. Mica		—131980	Knob—B.C. Switch
12	G18 —131502	Cond. 540 Mmf. Mica		—49872	Knob, Tall (1 req.)
13	G31 —39004	Cond. 500 Mmf. Mica		—131163	Escutcheon
14	G25 —39004	Cond. 50 Mmf. Mica		—131205	Cabinet Back—CJ
15	G37 —39001	Cond. .01 Mf., 400 V., Paper	S-80	F8-18	No. 4 x ¼ Rd. Hd. Wd. Scr.
16	G37 —39001	Cond. .01 Mf., 400 V., Paper		—131991	CK Cabinet
17	G39 —39001	Cond. .022 Mf., 400 V., Paper		—131246	Carton
18	G29 —39004	Cond. .00022 Mmf. Mica		—131246	Knob—Vol. and Tone (2 req.)
19A	—49794-A	Cond. 20 Mf., 250 V., Elect.		—41742	Knob Spring (2 req.)
19B		Cond. 20 Mf., 250 V., Elect.		—131980	Knob—B.C. Switch (1 req.)
19C		Cond. 20 Mf., 250 V., Elect.		—49872	Knob, Tall (1 req.)
20	G27 —39004	Cond. 100 Mf. Mica		—131995	Knob—Phone-Radio (1 req.)
21	G10 —39001	Cond. .0033 Mf., 600 V., Paper		—131163	Escutcheon
22	G37 —39001	Cond. .01 Mf., 400 V., Paper		—131990	Cabinet Back
23	G39 —39001	Cond. .022 Mf., 400 V., Paper	S-80	F8-18	No. 4 x ¼ Rd. Hd. Wd. Scr. (9 req.)
24	G10 —39001	Cond. .0033 Mf., 600 V., Paper		—130780	Phono Mtg. Plate
25	G10 —39001	Cond. .0033 Mf., 600 V., Paper		—130825	No. 10—32 x 3 Mtg. Scr. (4 req.)
26	NONE			—38085	No. 10—32 Wing Nut (4 req.)
27	NONE			—130325	Shipping Board
28	G27 —39002	Res. 2.2 Megohm ¼ W.	L—10	—130628	No. 10 Lockwasher (4 req.)
29	G23 —39002	Res. 4.7 Megohm ¼ W.		—47724	Mounting Spring (8 req.)
30	G27 —39002	Res. 2.2 Megohm ¼ W.		—47724	Rubber Arm Rest
31	—47100	Res. 10,000 Ohm 2 W.		—477333	Rest Brkt.
32	G21 —39002	Res. 220,000 Ohm ¼ W.—78CK only	R—155		No. 8—32 x ¼ Rd. Hd. Mch. Scr.
33	NONE		N—8		No. 8—32 Hex. Nut
34	NONE			—131988	Instructions—CJ Cab.
35	G19 —39002	Res. 100,000 Ohm ¼ W.		—130842	Instructions—50 cycle
36	G29 —39002	Res. 4.7 Megohm ¼ W.		—49284	Short Wave Instructions
37	G17 —39002	Res. 47,000 Ohm ¼ W.		—47791	Needle Cup—CK Cabinet
38	G22 —39002	Res. 330,000 Ohm ¼ W. Ins.		—47790	Needle Cup Lid—CK Cabinet
39	G23 —39002	Res. 470,000 Ohm ¼ W. Ins.		—46364	Phono Needles—Chrome Tipped



**Wiring Diagram — Model 78CK  
Less Phono Assm. — Model 78CJ**



**SOCKET VOLTAGES — MODEL 78**

All voltages measured from socket contact to chassis using 1000 OHM/VOLT D. C. Voltmeter 250 Volt Range, except heaters.

TUBE	FUNCTION	SOCKET CONTACT							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1—6SA7	Oscillator-Mixer	Gnd.	Gnd.	203	92	—	—	6.3	Grid
1—6SK7	I-F Amplifier	Gnd.	Gnd.	Gnd.	Grid	0	92	6.3	203
1—6SQ7	Det.-A.V.C.—1st A-F Amp.	Gnd.	Grid	Gnd.	—	—	70	6.3	Gnd.
1—6K6G	Output	Gnd.	Gnd.	190	203	—	J. B.	6.3	13.2
1—5Y3G	Rectifier	N. C.	*245 D.C. 4.5 A.C.	N. C.	268 A. C.	J. B.	268 A. C.	J. B.	245 D. C. 4.5 A. C.

Gnd. = Ground. J. B. = Junction Block. N. C. = No Connection.

Voltage Drop Across Speaker Field = 42 volts.

Maximum Power Output @ 130 Volt Line = 4.05 watts.

Input Power @ 118 Volt Line = 42 watts.

# Model 72TA — Chassis Model No. 79

## TUBE VOLTAGE CHART

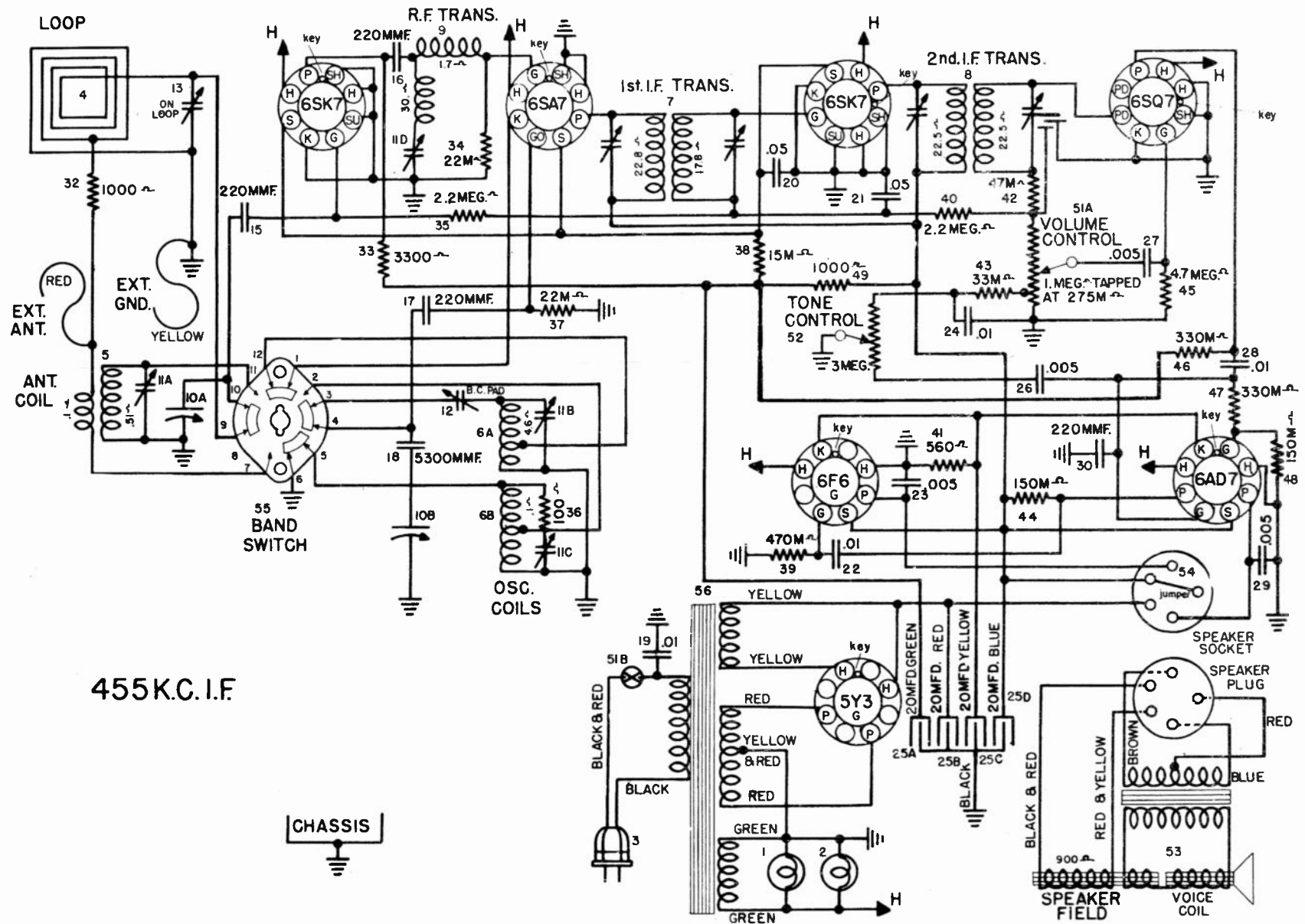
SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.....		0	0	260	80	0	0	6.3 A. C.	0
6SK7—I. F. Amplifier.....		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.....		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter and Output.....		0	0	255	260	0	180	6.3 A. C.	23
6F6—Output.....		0	0	255	260	0	235	6.3 A. C.	23
5Y3G—Rectifier.....		N. C.	330	J. B.	300A.C.	J. B.	300 A. C.	J. B.	330

### Signal Generator

Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

Item No.	Part No.	Description	Item No.	Part No.	Description
1	43567	Dial Light (6 V.)	25D		Cond. 20 Mf. 450 V. Elect.
2	43567	Dial Light (6 V.)	26	39001-11	Cond. .005 Mf. 600 V.
	49637-21	Dial Light Socket (2)	27	39001-11	Cond. .005 Mf. 600 V.
	132231-6	Dial Face.	28	39001-37	Cond. .01 Mf. 400 V.
	132320-1	Dial Pointer.	29	39001-11	Cond. .005 Mf. 600 V.
	132167-6	Drive Cord Assem.	30	39004-9	Cond. 220 Mf.
	131930	Drive Shaft Bearing.	31		
	132641-1	Drive Shaft.	32	39002-7	Res. 1000 Ohm 1/4 W.
	49829-B	Lock Spring.	33	39002-10	Res. 3300 Ohm 1/4 W.
	132648-1	Screw—Dial Face (2)	34	39002-15	Res. 22000 Ohm 1/4 W.
3	132300-2	A. C. Cord & Plug.	35	39002-27	Res. 2.2 Megohm 1/4 W.
4	132691-2	Loop Antenna & Back Assem.	36	39002-1	Res. 100 Ohm 1/4 W.
5	32000-240	Antenna Coil.	37	39002-15	Res. 22000 Ohm 1/4 W.
6A	32002-273	Osc. Coil—B. C.	38	130593	Res. 15000 Ohm. 2 W.
6B		Osc. Coil—S. W.	39	39002-23	Res. 470000 Ohm. 1/4 W.
7	32004-282	1st I. F. Trans.	40	39002-27	Res. 2.2 Megohm 1/4 W.
8	32004-283	2nd I. F. Trans.	41	132636-1	Res. 560 Ohm. 2 1/4.
9	32001-113	R. F. Coil.	42	39002-17	Res. 47000 Ohm. 1/4 W.
10A	132428-2	Var. Cond. Ant. Sec.	43	39002-16	Res. 33000 Ohm. 1/4 W.
10B		Var. Cond. Osc. Sec.	44	39002-20	Res. 150000 Ohm. 1/4 W.
11A	132386-4	Trim. Cond. S. W. Ant.	45	39002-20	Res. 4.7 Megohm 1/4 W.
11B		Trim. Cond. B. C. Osc.	46	39002-22	Res. 330000 Ohm. 1/4 W.
11C		Trim. Cond. S. W. Osc.	47	39002-22	Res. 330000 Ohm. 1/4 W.
11D		Trim. Cond. Wave Trap.	48	39002-20	Res. 150000 Ohm. 1/4 W.
12	132267-3	Trim. Cond. B. C. Osc. Pad.	49	39002-69	Res. 1000 Ohm. 1 W.
13	132267-3	Trim. Cond.—Loop.	50		
14			51A	49793-1	Vol. Control.
15	39004-9	Cond. 220 Mmf.	51B		A. C. Power Switch.
16	39004-9	Cond. 220 Mmf.	52	131547-1	Tone Control.
17	39004-9	Cond. 220 Mmf.	53	132674-2	Speaker.
18	34005-34	Cond. 5300 Mmf.	54	28807-103	Speaker Socket.
19	30805	Cond. .01 Mf. 400 V.		52109	Tube Socket.
20	39001-41	Cond. .05 Mf. 400 V.		130860	Tube Clamp.
21	39001-65	Cond. .05 Mf. 200 V.		132697-1	Cabinet T. A.
22	39001-37	Cond. .01 Mf. 400 V.		132698-1	Carton.
23	39001-11	Cond. .005 Mf. 600 V.		132721-1	Screw—Cab. Mtg. (3)
24	39001-61	Cond. .01 Mf. 200 V.		130197	Knob (4)
25A	132807-1	Cond. 20 Mf. 450 V. Elect.		42911	Washer—Paper (4)
25B		Cond. 20 Mf. 450 V. Elect.		132708-2	Dial Lens.
25C		Cond. 20 Mf. 25 V. Elect.			



455K.C.I.F.

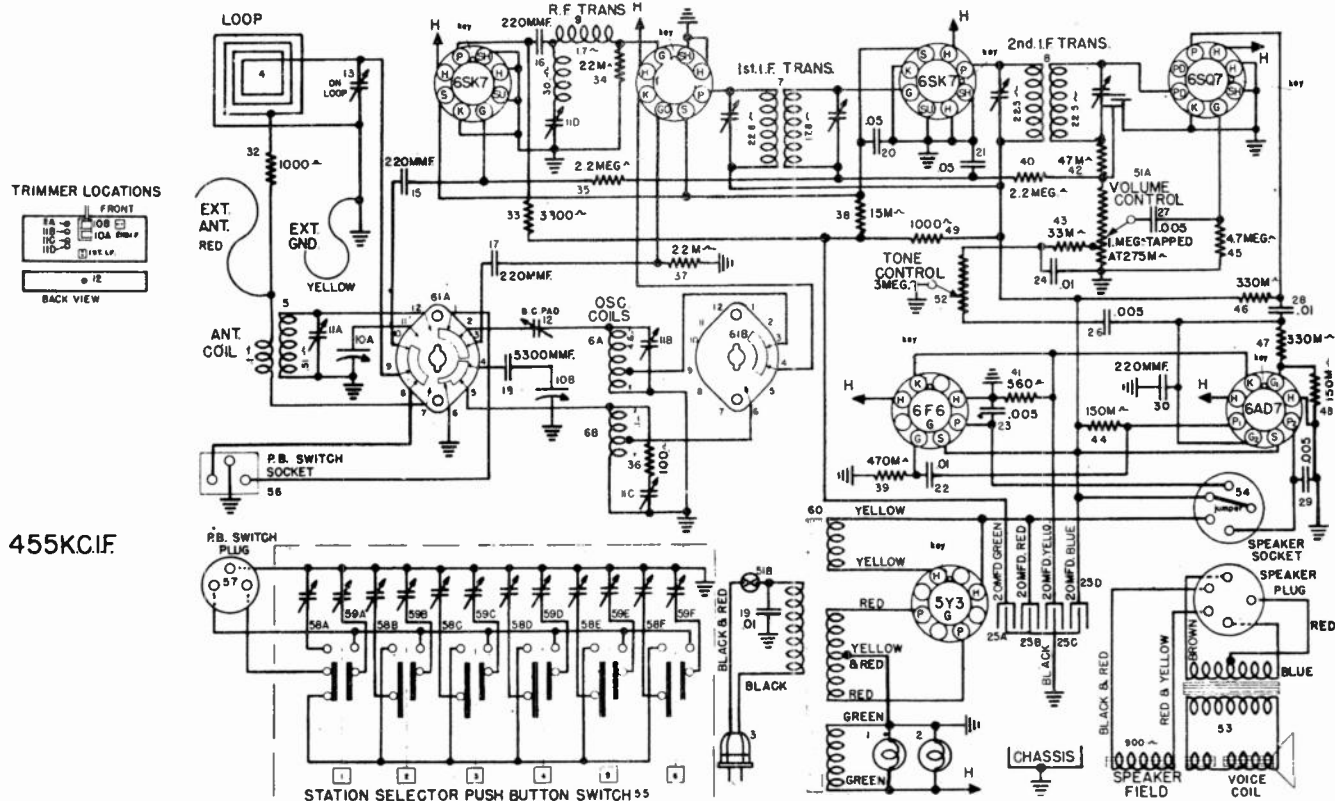
# Chassis Model No. 80

Output Meter Connections.....Plate of 6AD7 to Plate of 6F6  
 Generator Ground Connection.....To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuned Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully Open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rock- ing gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B.C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)



**WIRING DIAGRAM  
149**

## TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.		0	0	260	80	0	0	6.3 A. C.	Q
6SK7—I. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter		0	0	255	260	0	*180	6.3 A. C.	23
6F6—Output		0	0	255	260	0	235	6.3 A. C.	23
5Y3G—Rectifier		N. C.	330	J. B.	300A.C.	J. B.	300 A. C.	J. B.	330

MAX. POWER OUTPUT.....6.5 WATTS  
POWER CONSUMPTION..... 85 WATTS  
DROP ACROSS SPEAKER FIELD..... 70 VOLTS  
J. B.—Junction Block. N. C.—No Connection

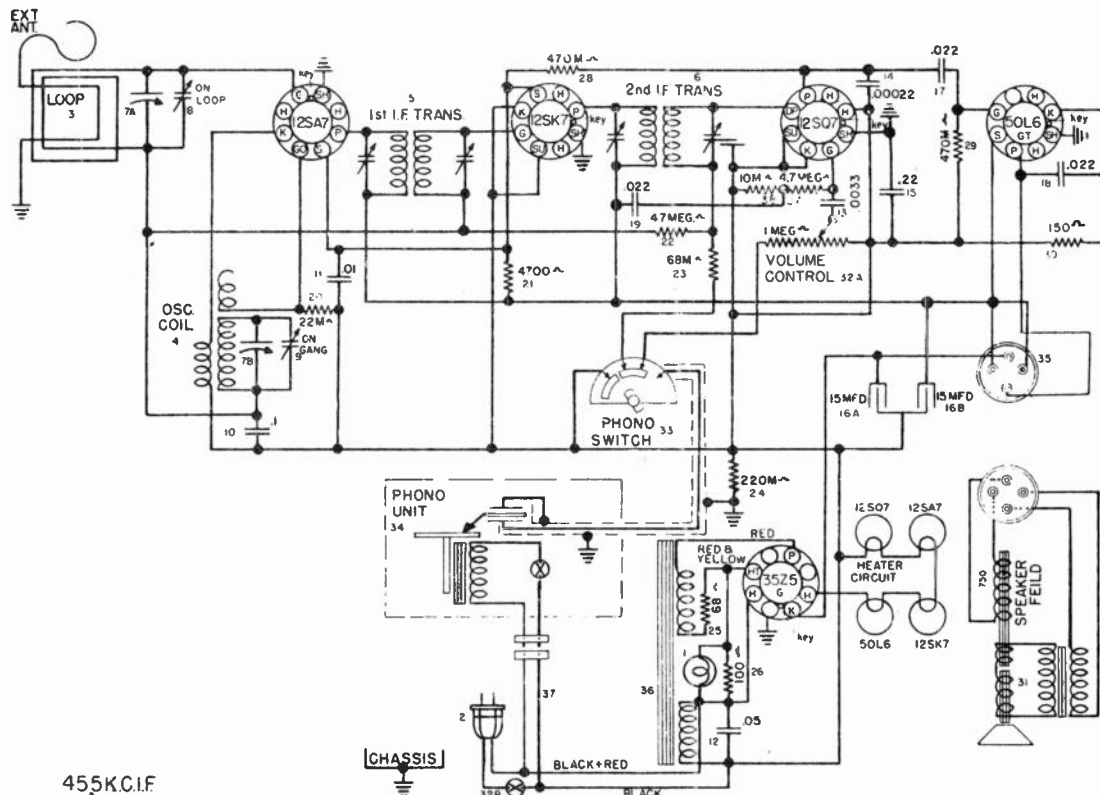
Voltages may vary 10% of values given.

## PARTS LIST, MODEL 72CA — CHASSIS MODEL No. 80

Item No.	Part No.	Description	Item No.	Part No.	Description
1	43567	Dial Light (6 V.)	39	39002-23	Res. 470000 Ohm. ¼ W.
2	43567	Dial Light (6 V.)	40	39002-27	Res. 2.2 Megohm ¼ W.
	49637-21	Dial Light Socket (2)	41	132636-1	Res. 580 Ohm. 2 W.
	132231-8	Dial Face.	42	39002-17	Res. 47000 Ohm. ¼ W.
	132320-1	Dial Pointer.	43	39002-16	Res. 33000 Ohm. ¼ W.
	132167-6	Drive Cord Assem.	44	39002-20	Res. 150000 Ohm ¼ W.
	131930	Drive Shaft Bearing.	45	39002-29	Res. 4.7 Megohm ¼ W.
	132641-1	Drive Shaft.	46	39002-22	Res. 330000 Ohm. ¼ W.
	49829-B	Lock Spring.	47	39002-22	Res. 330000 Ohm. ¼ W.
	132648-1	Screw—Dial Face (2)	48	39002-20	Res. 150000 Ohm. ¼ W.
3	132300-2	A. C. Cord & Plug.	49	39002-69	Res. 1000 Ohm. 1 W.
4	132727-1	Loop Antenna Assem.	50		
5	32000-240	Antenna Coil.	51A	49793-1	Vol. Control.
6A	32002-273	Osc. Coil—B. C.	51B		A. C. Power Switch.
6B		Osc. Coil—S. W.	52	131547-1	Tone Control.
7	32004-282	1st I. F. Trans.	53	132674-1	Speaker.
8	32004-283	2nd I. F. Trans.	54	28807-103	Speaker Socket.
9	32001-118	R. F. Coil.	55	L-132705	Push Button Sw. Assem.
10A	132428-2	Var. Cond. Ant. Sec.	56	47133	P. B. Sw. Socket.
10B		Var. Cond. Osc. Sec.	57	132437-4	Push Button Cable.
11A	132386-4	Trim. Cond. S. W. Ant.	58A	132722-1	Trimmer Cond.
11B		Trim. Cond. B. C. Osc.	58B		Trimmer Cond.
11C		Trim. Cond. S. W. Osc.	58C		Trimmer Cond.
11D		Trim. Cond. Wave Trap.	58D		Trimmer Cond.
12	132267-3	Trim. Cond. B. C. Osc. Pad.	58E		Trimmer Cond.
13	132267-3	Trim. Cond.—Loop.	58F	132722-1	Trimmer Cond.
14			59A		Trimmer Cond.
15	39004-9	Cond. 220 Mmf.	59B		Trimmer Cond.
16	39004-9	Cond. 220 Mmf.	59C		Trimmer Cond.
17	39004-9	Cond. 220 Mmf.	59D		Trimmer Cond.
18	34005-34	Cond. 5300 Mmf.	59E		Trimmer Cond.
19	30805	Cond. .01 Mf. 400 V.	59F		Trimmer Cond.
20	39001-41	Cond. .05 Mf. 400 V.	60	132313-4	Power Trans.
21	39001-65	Cond. .05 Mf. 200 V.	61A	132640-1	Band Chg. Sw.
22	39001-37	Cond. .01 Mf. 400 V.	61B		Band Chg. Sw.
23	39001-11	Cond. .005 Mf. 600 V.		132668-1	Trans. Screen.
24	39001-61	Cond. .01 Mf. 200 V.		52109	Tube Socket.
25A	132807-1	Cond. 20 Mf. 450 V. Elect.		130860	Tube Clamp.
25B		Cond. 20 Mf. 450 V. Elect.		26719-50	Term. Bd. Assem.
25C		Cond. 20 Mf. 25 V. Elect.		132701-1	Cabinet.
25D		Cond. 20 Mf. 450 V. Elect.		132702-1	Carton.
26	39001-11	Cond. .005 Mf. 600 V.		132721-1	Screw—Cabt. Mtg. (3)
27	39001-11	Cond. .005 Mf. 600 V.		130197	Knob (4)
28	39001-37	Cond. .01 Mf. 400 V.		42911	Washer—Paper (4)
29	39001-11	Cond. .005 Mf. 600 V.		132708-2	Dial Lens.
30	39004-9	Cond. 220 Mf.		131412	Screw—P. B. Mtg. (2)
31				130223-3	Escutcheon—P. B.
32	39002-7	Res. 1000 Ohm. ¼ W.		130324	Screw—P. B. Esc. (4)
33	39002-10	Res. 3300 Ohm. ¼ W.		132478-3	Envelope Assem.
34	39002-15	Res. 22000 Ohm. ¼ W.		132704-1	Instruction.
35	39002-27	Res. 2.2 Megohm ¼ W.		130186-B	Call Letter Sheet.
36	39002-1	Res. 100 Ohm. ¼ W.		130187	Call Letter Cover.
37	39002-15	Res. 22000 Ohm. ¼ W.		130159-4	Push Button (6)
38	130593	Res. 15000 Ohm. 2 W.			

*Twenty-five years ago the Crosley Corporation supplied the service man's need for crystal detectors. It can supply the infinitely greater radio service needs of today's fast moving industry.*

# CHASSIS No. 83



455KC.I.F

## PARTS LIST—MODEL 52-TQ—CHASSIS No. 83

Figures in first column refer to parts in diagrams.

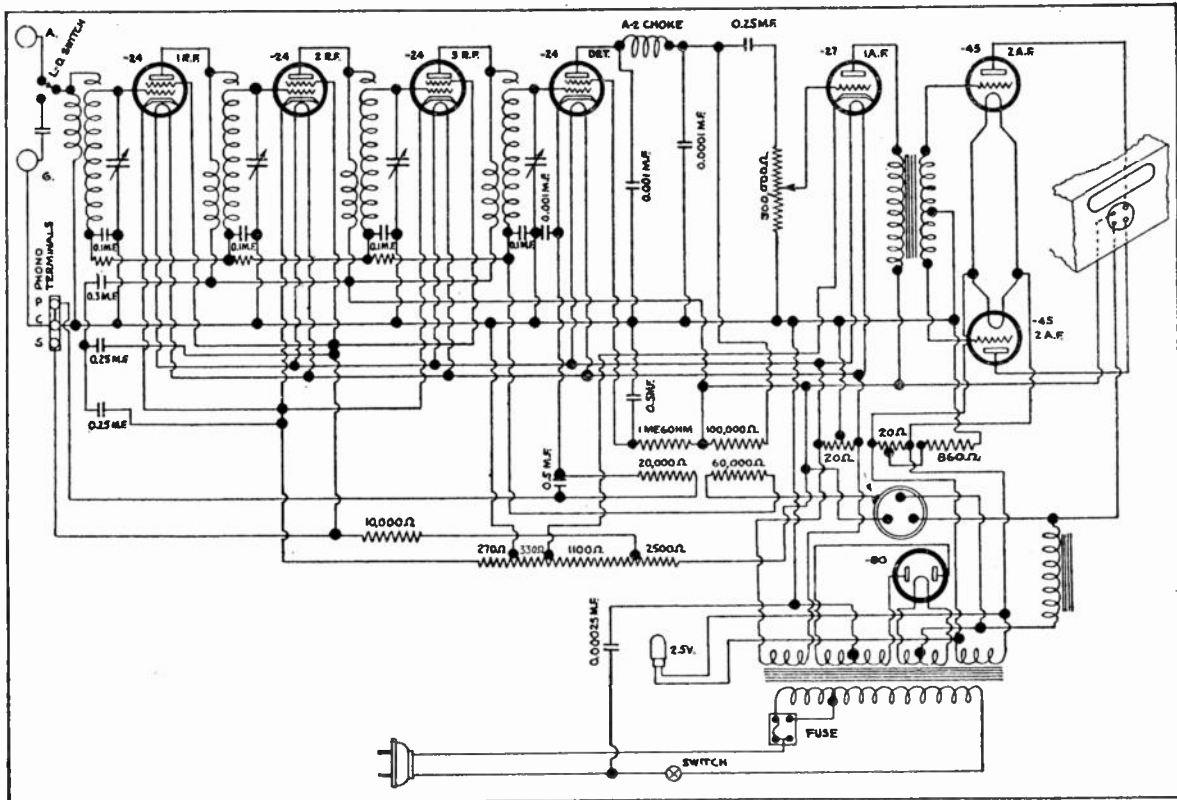
Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light.	24	G21—39002	Res. 220,000 Ohms 1/4 W.
	L—132109	Dial Light Socket Assm.	25	—133526-1	Res. 68 Ohms 2 W.
	—132089-2	Dial Face.	26	G63—39002	Res. 100 Ohm 1 W.
	—132087-5	Dial Pointer.	27	G39—39002	Res. 4.7 Megohm 1/4 W.
	—132117-2	Celluloid Dial Lens.	28	G23—39002	Res. 470,000 Ohm 1/4 W.
	L—132131	Drive Cord Assm.	29	G23—39002	Res. 470,000 Ohm 1/4 W.
	—132119-7	Drive Shaft.	30	G33—39002	Res. 150 Ohms 1/4 W.
2	—132300-1	A. C. Cord & Plug.	31	G—132683-2	Speaker (750 Ohm Field)
	—43738	Lock Plate Power Cord.	32A	—49774	Volume Control (1 Meg.)
3	—132142	Ant. Loop Assm.	32B	—49774	A. C. Power Switch.
	—132102	Spacer—Loop Mtg. (2)	33	—130265	Phono Switch.
	—23843	Screw—Loop Mtg. (2)	34	L—133542	Phono Unit.
4	G—32002-276	Osc. Coil (1)	35	W—133475	Speaker Cable.
5	G—32004-266	1st I. F. Trans.	36	L—133528-2	Power Trans. (110 V.—60 Cycle)
6	G—32004-267	2nd I. F. Trans.	37	L—133588	Motor Cable Assm.
7A	—49736-2	Var. Cond. Ant. Sec.	30	G13—39002	Resistor 10,000 Ohm 1/4 W.
7B		Var. Cond. Osc. Sec.		—133443-2	Cabinet.
8	—49652-2	Ant. Trimmer Cond.		—130313A	Knob (3)
9	On Gang	Osc. Trimmer Cond.		—41742	Knob Spring (3)
10	G67—39001	Cond. .1 Mf., 200 V.		L—133542	Record Changer (115 V.—60 Cycle)
11	G61—39001	Cond. .01 Mf., 200 V.		—133524	Screw Changer (3)
12	G65—39001	Cond. .05 Mf., 200 V.		—133523-1	Spring Motor Bd. Assm. (3)
13	G10—39001	Cond. .0033, 600 V.		—29614-2	Nut Motor Bd. Assm. (3)
14	G9—39004	Cond. .00022, Mica.		—133525-1	Washer Motor Bd. Assm. (3)
15	G69—39001	Cond. .22, 200 V. Paper.		—46279	Grommet Motor Bd. Assm. (1)
16A	—133474-1	Cond. 15 Mfd., 200 V.	N—6	N—6	Nut—Speaker (1)
16B	—133474-1	Cond. 15 Mfd., 150 V.	O—6	O—6	Washer—Speaker (1)
17	G63—39001	Cond. .022, 200 V.		—133540-1	Lead Weight—Crystal Dampner.
18	G63—39001	Cond. .022, 200 V.		—132659-1	Needle Assm.—(Floating Jewel)
19	G63—39001	Cond. .022, 200 V.		—133569-1	Spring—Motor Bd. Assm.
20	G15—39002	Res. 22,000 Ohms 1/4 W.		—132221-1	Screw—Chassis (3)
21	G42—39002	Res. 4700 Ohms 1/2 W.		—30409	Washer—Chassis (3)
22	G29—39002	Res. 4.7 Megohm 1/4 W.	L—8	L—8	Lockwasher—Chassis (3)
23	G18—39002	Res. 68,000 Ohms 1/4 W.		—133587-1	Record Changer Instructions.

### ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Phono. Radio Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	Radio	Fully Open	1st I-F(2) 2nd I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1650 KC.	Antenna Lead (red)	Radio	Fully Open	B.C."Osc."	Adjust for maximum output. Gang does not have to tune through signal.
3.	.0001 MF.	1400 KC.	Antenna Lead (red)	Radio	140 Dial	B.C."Ant."	Adjust for maximum output.

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.

# Model 84



Qty.	Part No.	Description	Qty.	Part No.	Description
1	D-20204-C	Chassis .....			
1	W-20173	A. F. Transformer .....			
5	W-7873	Tube Socket—5 Prong .....			
4	W-7871	Tube Socket—4 Prong (1 for loud speaker) .....			
8	W-7874	Socket guides .....			
1	W-7872	Socket guide (loud speaker) .....			
1	W-20273	Variable Condenser gang assembly .....			
1	W-20208	Inner bracket .....			
1	W-20209	Outer bracket .....			
1	W-20431	Dial Stop .....			
1	W-20435	Spring Washer .....			
1	W-20431	Drive Pulley .....			
1	W-20436	Dial Assembly .....			
1	W-5749	Drive rope .....			
1	W-20376	Shadow box escutcheon assembly .....			
4	W-7272-A	Screen Grid connections .....			
1	C-20206	Condenser & tube shield assembly .....			
1	C-20363	Condenser & tube shield cover .....			
1	W-20341	Mershon Condenser (9-9-18) .....			
1	W-6764	Mershon Condenser cap .....			
1	W-4742	Jar Cap Screw .....			
1	W-4741	4-36 Square Nut .....			
2	W-6762	Mounting Clamp .....			
1	W-20150	Power Transformer (110 v. 60 c.) .....			
	W-20469	Power Transformer (110 v. 25 c.) .....			
	W-20470	Power Transformer (220 v. 25 c.) .....			
1	W-7496	Transformer shield .....			
1	W-20171	Fuse Panel Assembly .....			
1	W-7983	Fuse (3 amp.) .....			
1	W-20321	Fuse guard .....			
1	W-20322	Fuse guard insulator .....			
1	W-20175	A & G terminal .....			
1	W-20266	Phone pick-up terminal .....			
		<b>Miscellaneous</b>			
	W-20178	Grommets .....			
	W-7578	Spaghetti Tubing .....			
	W-20485	Knob, Large .....			
	W-20474	Knob, Small (set screw type) .....			
	W-20486	Knob, Small (spring type) .....			
					<b>PARTS UNDER CHASSIS</b>
2	W-4313	.5 mfd fixed Condenser .....			
1	W-4362	R. F. Plate Choke .....			
1	W-7847	.0001 mfd fixed Condenser .....			
1	W-20187	.25 mfd fixed Condenser .....			
1	W-20622	Mounted Resistor Assembly .....			
	W-20099	Terminal Strip Assembly .....			
	W-20464	1 meg. fixed resistance (brown, green dot) .....			
	W-5469	100,000 ohm fixed resistance (brown, yellow dot) .....			
	W-5370	20,000 ohm fixed resistance (red, orange dot) .....			
	W-4923	60,000 ohm fixed resistance (blue, orange dot) .....			
1	W-20452	Candohm fixed resistance (5 taps) .....			
1	W-5370	20,000 ohm fixed resistance .....			
1	W-5713	Terminal Strip .....			
1	W-20185	Volume Control .....			
2	W-6754	.001 mfd Condenser .....			
1	W-20186	.25-.3-.25 mfd Condenser .....			
3	W-4923	60,000 fixed resistance .....			
3	W-5098	Rubber Tubing .....			
4	W-20188	.1 mfd fixed condenser .....			
1	R-20330	Coil Mounting Strip .....			
1	W-20374	Antenna R. F. Transformer Assembly .....			
3	W-20375	R. F. Transformer Asscm. .....			
4	W-20330	R. F. Coil Shield .....			
4	W-20491	Rubber Washer .....			
1	W-21012	On, Off, and Tap Switch Assembly .....			
		Power Switch only .....			
		Tap Switch only .....			
1	W-20499	.00025 mfd fixed Condenser .....			
1	W-20176	Candohm fixed resistance (8 taps) .....			
1	W-20172	Filter Choke .....			
1	W-20499	.00025 mfd fixed Condenser .....			
1	B-6867	Cable and Plug .....			
1	C-20205	Chassis Bottom .....			
2	W-20177	Brackets for Bottom .....			

# Chassis Model No. 85

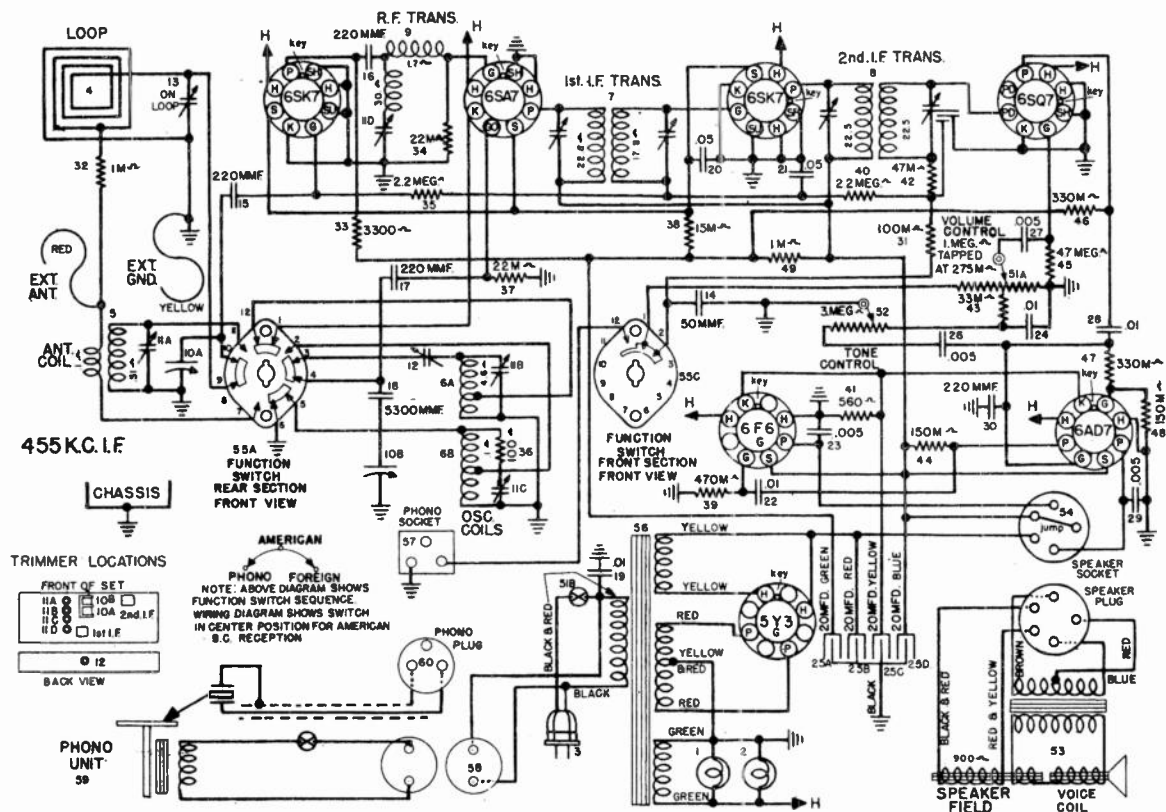
## ALIGNMENT PROCEDURE

Output Meter Connections.....Plate of 6AD7 to Plate of 6F6  
 Generator Ground Connection.....To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

### ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully Open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B.C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)



WIRING DIAGRAM



## TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.....		0	0	260	80	0	0	6.3 A. C.	0
6SK7—I. F. Amplifier.....		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.....		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter and Output.....		0	0	255	260	0	180	6.3 A. C.	23
6F6—Output.....		0	0	255	260	0	235	6.3 A. C.	23
5Y3G—Rectifier.....		N. C.	330	J. B.	300A.C.	J. B.	300A.C.	J. B.	330

MAX. POWER OUTPUT..... 6.5 WATTS  
POWER CONSUMPTION..... 85 WATTS  
DROP ACROSS SPEAKER FIELD..... 70 VOLTS  
J. B.—Junction Block. N. C.—No Connection

Voltages may vary 10% of values given.

## PARTS LIST, MODEL 72CP — CHASSIS MODEL No. 85

Item No.	Part No.	Description	Item No.	Part No.	Description
1	43567	Dial Light.	42	G-39002-17	Res. 47,000 Ohms, 1/4 W.
2	43567	Dial Light.	43	G-39002-16	Res. 33,000 Ohms, 1/4 W.
	132708-2	Dial Lens.	44	G-39002-20	Res. 150,000 Ohms, 1/4 W.
	132707	Tack Point (14) Dial Lens Mtg.	45	G-39002-29	Res. 4.7 Megohms, 1/4 W.
	132231-13	Dial Face Assem.	46	G-39002-22	Res. 330,000 Ohm, 1/4 W.
	132648-1	Screw—(2)—Dial Face Mtg.	47	G-39002-22	Res. 330,000 Ohm, 1/4 W.
	132320-1	Dial Pointer.	48	G-39002-20	Res. 150,000 Ohm, 1/4 W.
	49637-21	Light Socket Assem.	49	G-39002-69	Res. 1,000 Ohm, 1 W.
3	132300-1	A. C. Cord & Plug.	50	None	
4	G-133630-1	Loop Ant. Assem.	51A	49793-1	Volume Control.
	131133	Screw—(4)—Loop Ant. Mtg.		46662	Palnut—Vol. Control (1)
5	G-32000-240	Ant. Coil.	51B		A. C. Power Switch.
6A	G-32002-273	Osc. Coil—B. C.	52	131547-1	Tone Control.
6B	G-32002-273	Osc. Coil—H. F.		46662	Palnut—Tone Control (1)
7	G-32004-282	1st I. F. Trans.	53	130146-4	Speaker Assem.
8	G-32004-283	2nd I. F. Trans.	54	G-28807-103	Spk. Socket.
9	133593	R. F. Coil.	55A	133652-1	Function Switch.
10A	132428-2	Var. Cond. Ant. Sec.	55B		Function Switch.
10B		Var. Cond. Osc. Sec.	56	732313-4	Power Trans.
11A	432386-4	Trim. Cond. H. F. Ant.	57	47133	Phono Socket.
11B		Trim. Cond. B. C. Osc.	58	132454-3	Motor Cable.
11C		Trim. Cond. H. F. Osc.	59	132530-1	Phono. Assem.
11D		Trim. Cond. Wave Trap.	60	133704	Phono Cable & Plug.
12	132267-3	Trim. Cond. B. C. Osc. Pad.		132453-1	Phono Cable Plug.
13	132267-1	Trim. Cond. Loop.		133429-3	72CP Cabinet.
14	G-39004-5	Cond. 50 Mmf.		133629	Carton.
15	G-39004-9	Cond. 220 Mmf.		132721	Screw—(2)—Chassis Mtg.
16	G-39004-9	Cond. 220 Mmf.		45579	Washer—(2)—Chassis Mtg.
17	G-39004-9	Cond. 220 Mmf.		130197	Knob (4)
18	G-34003-34	Cond. 5300 Mmf.		42911	Cab. Protector (4)
19	30805	Cond. .01 Mf. 120 V. A. C.		45580-A	Grommet—(4)—Spk. Mtg.
20	G-39001-41	Cond. .05 Mf. 400 V.		37933	Flat Washer—(4)—Spk. Mtg.
21	G-39001-63	Cond. .05 Mf. 200 V.		N-8	Nut—(4)—Spk. Mtg.
22	G-39001-37	Cond. .01 Mf. 400 V.		N-8	Lockwasher—(4)—Spk. Mtg.
23	G-39001-11	Cond. .005 Mf. 600 V.		49796	Headed Bushing (4) Spk. Mtg.
24	G-39001-61	Cond. .01 Mf. 200 V.		132478-9	Envelope Assembly. ①
25A	132807-1	Cond. 20 Mfd. 450 V. Electro.		133734	Record Changer Assem. ①
25B		Cond. 20 Mfd. 450 V. Electro.		132489-1	Brkt. & Roller Assem.
25C		Cond. 20 Mfd. 25 V. Electro.		132537-3	Slide Rail (3)
25D		Cond. 20 Mfd. 450 V. Electro.		131133	Screw—Wood—Slide Rail.
26	G-39001-11	Cond. .005 Mf. 600 V.		133703	Instructions ②
27	G-39001-11	Cond. .005 Mf. 600 V.		132918-1	Tone Arm Supp. Pad. ②
28	G-39001-37	Cond. .01 Mf. 400 V.		133745	Instr. Manual (G. I.)
29	G-39001-11	Cond. .005 Mf. 600 V.		133744	Record Changer Assem. ③
30	G-39004-9	Cond. 220 Mf.		33055	Rubber Sleeve (2) Chassis Mtg.
31	G-39002-19	Res. 100,000 Ohms, 1/4 W.		47265	Flat Washer (2) Chassis Mtg.
32	G-39002-7	Res. 1,000 Ohms, 1/4 W.		132831-1	Screw (2) Chassis Mtg.
33	G-39002-10	Res. 3,300 Ohms, 1/4 W.		132660-1	Chassis Suppt. Brkt.
34	G-39002-15	Res. 22,000 Ohms, 1/4 W.		45056	Grommet (2) Chassis Brkt.
35	G-39002-25	Res. 2.2 Megohms, 1/4 W.		49796	Headed Bushing (2) Chassis Brkt.
36	G-39002-1	Res. 100 Ohms, 1/4 W.		132520-1	Screw (2) Chassis Brkt.
37	G-39002-7	Res. 22,000 Ohms, 1/4 W.		131930	Drive Shaft Bearing.
38	130393	Res. 15,000 Ohms, 2 W.		132641-1	Drive Shaft.
39	G-39002-23	Res. 470,000 Ohms, 1/4 W.		49829-B	Lock Spring (1)
40	G-39002-27	Res. 2.2 Megohms, 1/4 W.		130860	Tube Clamp.
41	132636-1	Res. 560 Ohm, 2 W.		132167-13	Drive Cord Assem.

*Your Crosley Distributor will be happy to give you complete information regarding Crosley Twice Tested Service Parts.*

# Chassis No. 86

## TUBE VOLTAGE CHART

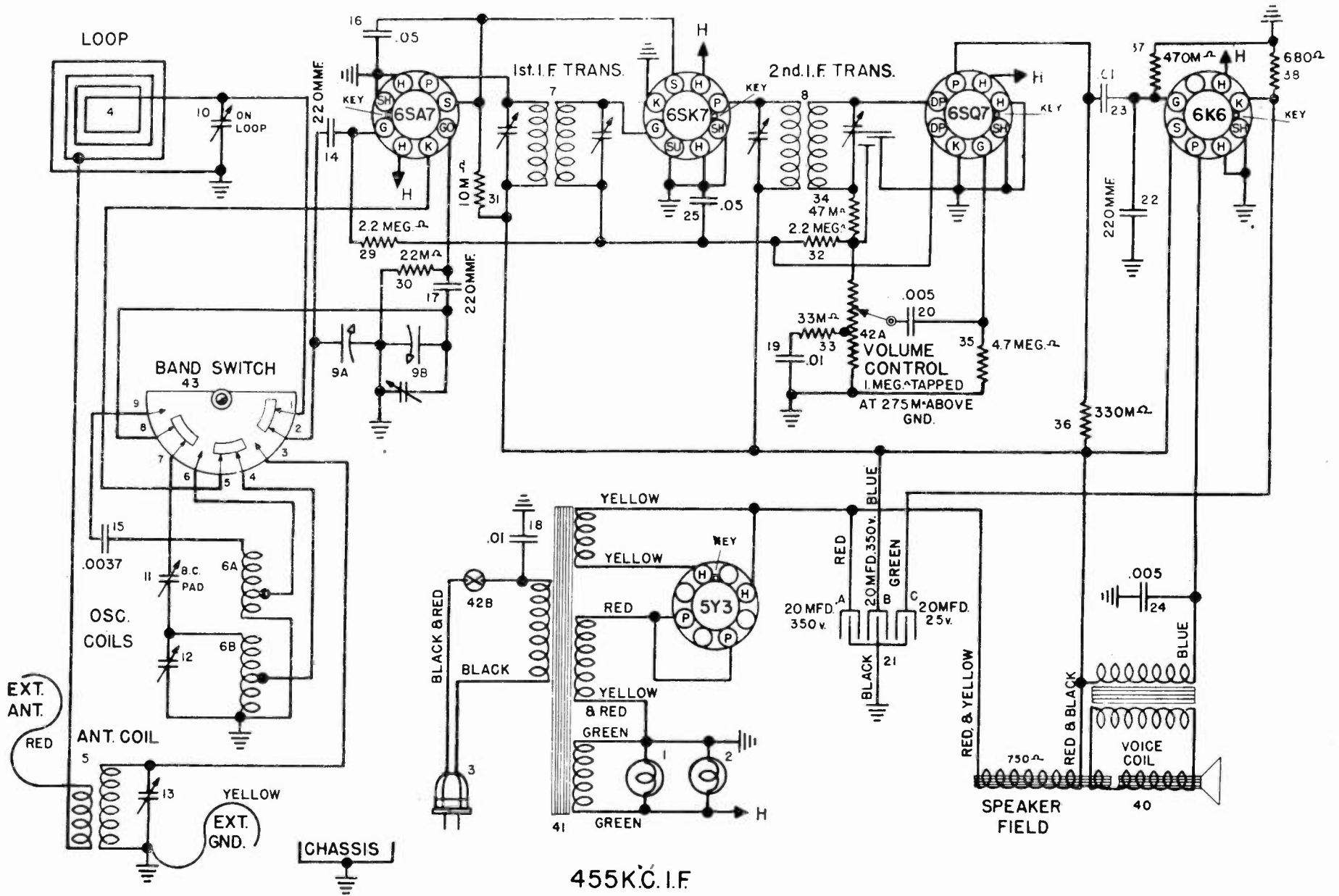
SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SA7—OSC.—Mod.		0	0	180	73		0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	73	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	68	6.3 A. C.	0
6K6G or GT—Output		0	0	180	180	0	180	6.3 A. C.	9
5Y3G—Rectifier		0	225		270 A.C.		270 A. C.		225

### Signal Generator

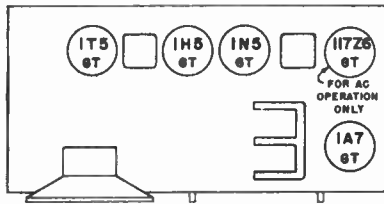
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum Adjust for Maximum.
2.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer
7.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

Item	Part No.	Description	Item	Part No.	Description
1	43567	Dial Light 6 V.	22	39004-G9	Cond. 220 Mmf. Mica.
2	43567	Dial Light 6 V.	23	39001-G37	Cond. .01 Mf. 400 V. Paper.
	49637-21	Light Socket Assem.	24	39001-G11	Cond. .005 Mf. 600 V. Paper.
	132641-1	Drive Shaft.	25	39001-G65	Cond. .05 Mf. 200 V. Paper.
	G-132167-6	Drive Cord Assem.	26		None.
	132320-1	Dial Pointer.	27		None.
	132231-12	Dial Face Assem.	28		None.
	132708-2	Dial Lens.	29	39002-G27	Res. 2.2 Megohm ¼ W.
3	132300-1	Power Cable & Plug.	30	39002-G15	Res. 22,000 Ohms ¼ W.
4	G-132675-2	Loop Ant. Assem.	31	47100	Res. 10,000 Ohms 2 W.
5	32000-G241	S. W. Ant. Coil.	32	39002-G27	Res. 2.2 Megohm ¼ W.
6A	32000-G274	S. W. OSC. Coil.	33	39002-G16	Res. 33,000 Ohms ¼ W.
6B		B. C. OSC. Coil.	34	39002-G17	Res. 47,000 Ohms ¼ W.
7	32004-G282	1st I. F. Trans.	35	39002-G29	Res. 4.7 Megohm ¼ W.
8	32004-G283	2nd I. F. Trans.	36	39002-G22	Res. 330,000 Ohms ¼ W.
9A	132150-2	Var. Cond. R. F. Sec.	37	39002-G23	Res. 470,000 Ohms ¼ W.
9B		Var. Cond. Osc. Sec.	38	39002-G37	Res. 680 Ohm ¼ W.
10		Trimmer Cond. Ant. Loop.	39		None.
11		Trimmer Cond. B. C. Pad.	40	132683-5	Speaker.
12		Trimmer Cond. B. C. Osc.	41	49838	Power Trans.
13		Trimmer Cond. S. W. Ant.	42A	49793-1	Volume Control 1 Meg.
14	39004-G9	Cond. 220 Mmf. Mica.	42B		A. C. Switch.
15	34005-G17	Cond. 3700 Mmf. Mica.	43	49772-1	Band Change Switch.
16	39001-G41	Cond. .05 Mf. 400 V. Paper.		133564-1	52 TL Cabinet.
17	39004-G9	Cond. 220 Mmf. Mica.		GC-132691-3	Loop & Back Assem. 52 TK & Fl.
18	30805	Cond. .01 Mf. 120 V. A. C.		132127	Knob (3 Req.)
19	39001-G61	Cond. .01 Mf. 200 V. Paper.		132707-1	Tack Point—Dial Lens (11 Req.)
20	39001-G11	Cond. .005 Mf. 600 V. Paper.		S-80	Screw—Loop & Back Assem. 52 TL
21A	132669-1	Cond. 20 Mfd. 350 V. Elect.		44772	Screw—Chassis Mtg. (3 Req.)
21B		Cond. 20 Mfd. 350 V. Elect.		U-48744	Washer—Chassis Mtg. (3 Req.)
21C		Cond. 20 Mfd. 25 V. Elect.			

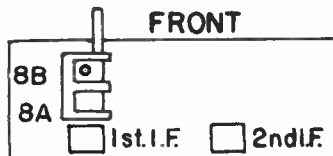


# SERVICE INFORMATION — Model 90 Chassis

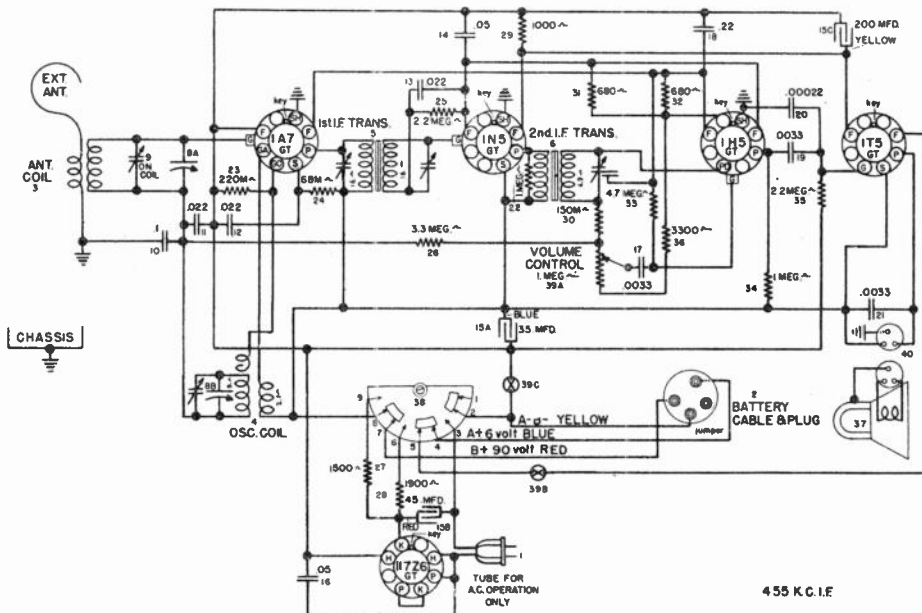
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



Tube	Function	@ 117.5-Volt Line				Battery Pack			
		Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	90	36	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	90	90	.....
1H5GT	Det.-A. S. C. 1st A. F	2.6	7	.....	.....	3.0	8	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	88	90	.....
1I7Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	115	.....	.....	.....	.....

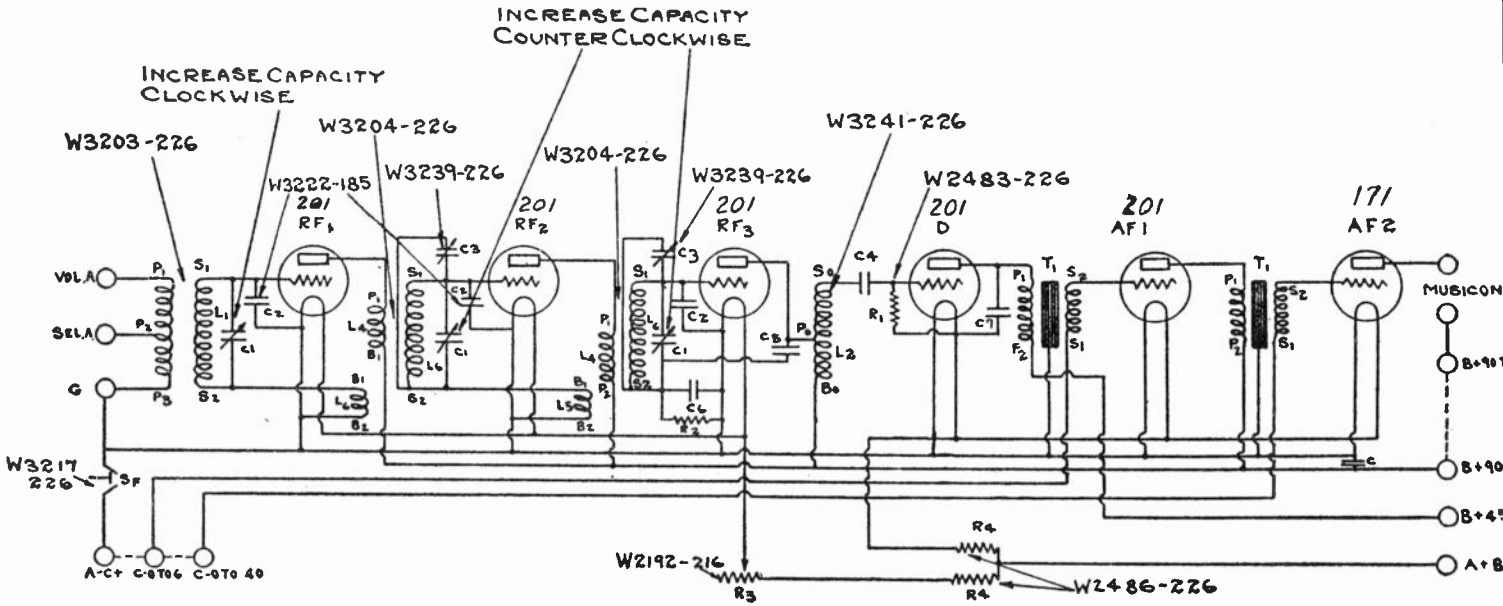
## ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

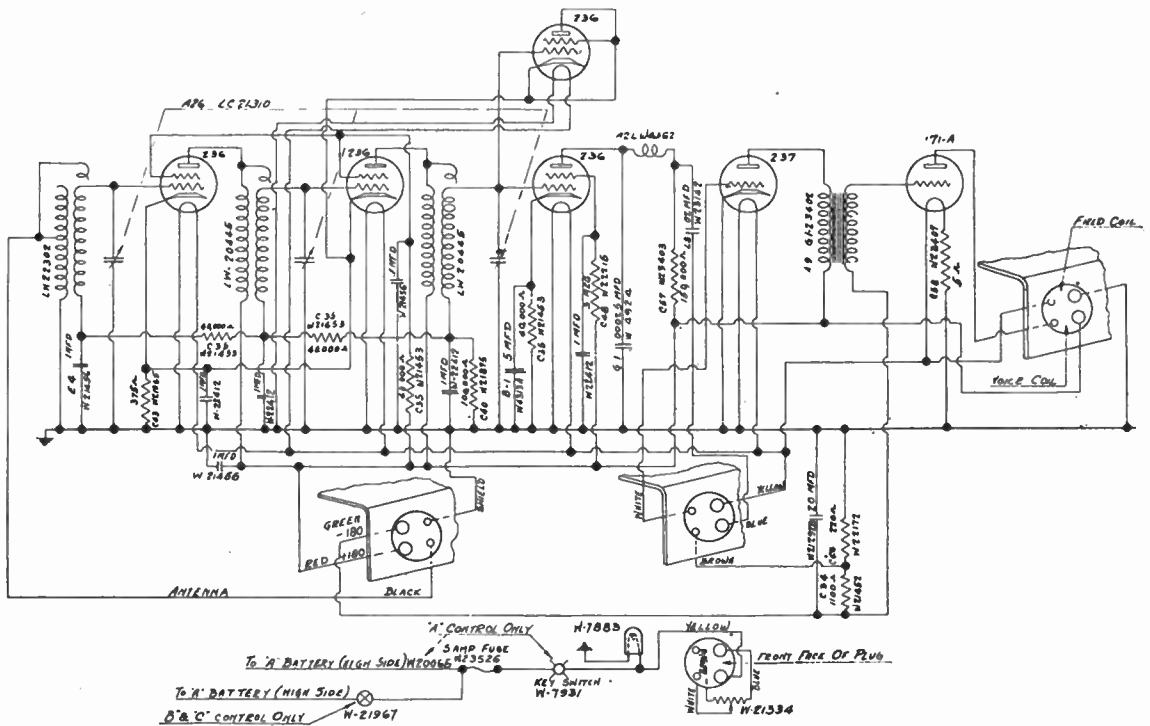
SIGNAL GENERATOR						
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)		REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)		Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)		Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang		Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on loop		Adjust for maximum output.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-1	A. C. Cable and Plug	30	39002-G20	Res. 150000 Ohm. 1/4 W.
2	132503-1	Battery Cable and Plug	31	39002-G6	Res. 680 Ohm. 1/4 W.
3	32000-G242	Ant. Coil	32	39002-G6	Res. 680 Ohm. 1/4 W.
4	32002-G272	Osc. Coil	33	39002-G29	Res. 4.7 Meg. 1/4 W.
5	32004-G268	1st I.F. Trans.	34	39002-G25	Res. 1 Meg. 1/4 W.
6	32004-G276	2nd I.F. Trans.	35	39002-G27	Res. 2.2 Meg. 1/4 W.
7	NO ITEM		36	39002-G10	Res. 3300 Ohm. 1/4 W.
8A	132150-1	Var. Cond. R.F. Sec.	37	132832	Speaker
8B		Var. Cond. Osc. Sec.	38	49772-1	Bat. Switch
9	132267-1	Trimmer Cond.	39A	130520-2	Vol. Control—1 Meg.
10	39001-G67	Cond. .1 Mfd. 200 V.	39B		S. P. S. T. Switch
11	39001-G63	Cond. .022 Mfd. 200 V.	39C		S. P. S. T. Switch
12	39001-G63	Cond. .022 Mfd. 200 V.	40	W-132822-1	Spr. Cable Assm.
13	39001-G63	Cond. .022 Mfd. 200 V.		133598-2	Cabinet
14	39001-G65	Cond. .05 Mfd. 200 V.		130558	Mtg. Screw
15A	132501-1	Cond. 35 Mfd. Elec.		132127-1	Knob (3)
15B		Cond. 45 Mfd. Elec.		42911	Cabinet Protector (3)
16C		Cond. 200 Mfd. Elec.		G-132231-9	Dial Assem.
16	39001-G65	Cond. .05 Mfd. 200 V.		132258-1	Dial Lens
17	39001-G10	Cond. .0033 Mfd. 600 V.		132097-6	Dial Pointer
18	39001-G69	Cond. .22 Mfd. 200 V.		132167-3	Drive Cord Assem.
19	39001-G10	Cond. .0033 Mfd. 600 V.		132119-3	Drive Shaft
20	39004-G9	Cond. .00022 Mfd.		51071	Retaining Ring
21	39001-G10	Cond. .0033 Mfd. 600 V.		132123	Tube Socket
22	39001-G25	Res. 1 Meg. Ohm 1/4 W.		45580-A	Grommet—Spkr. Mtg. (3)
23	39002-G21	Res. 22000 Ohm. 1/4 W.		46460	Headed Bushing—Spkr. Mtg. (3)
24	39002-G18	Res. 68000 Ohm. 1/4 W.		132546-1	Speaker Brkt.—L.H.
25	39002-G27	Res. 2.2 Meg. Ohm. 1/4 W.		130181	Screw—Spkr. Mtg. (4)
26	39002-G28	Res. 3.3 Meg. Ohm. 1/4 W.		132520-1	Screw—Spkr. Mtg. (3)
27	39002-G8	Res. 1500 Ohm. 1/4 W.		N-5096	Nut—Spkr. Mtg. (3)
28	132502-1	Res. 1900 Ohm. Candohm.		132829-1	Speaker Brkt.—R.H.
29	39002-G7	Res. 1000 Ohm. 1/4 W.			

# Model RFL-90

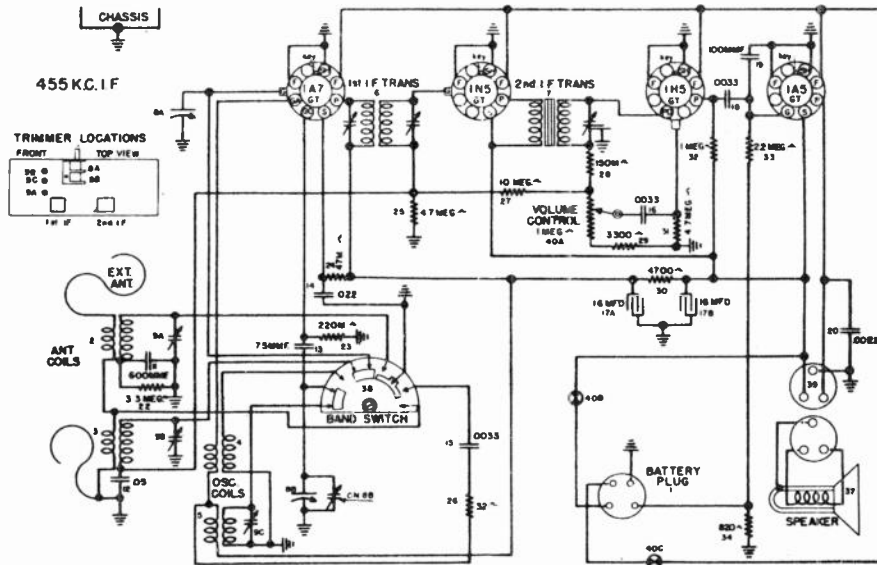


# MODEL 92



# SERVICE INFORMATION — MODEL 91 CHASSIS

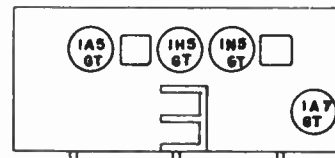
## WIRING DIAGRAM



Item	Part No.	Description	Item	Part No.	Description
1	B-130493-A	Battery Cable & Plug	29	G-39002-10	Res. 3300 ohm 1/4 W.
2	G-32000-245	H. F. Antenna Coil	30	G-39002-11	Res. 4700 ohm
3	G-32000-244	B. C. Antenna Coil	31	G-39002-29	Res. 4.7 megohm
4	G-32002-278	H. F. Oscillator Coil	32	G-39002-25	Res. 1. megohm
5	G-32002-278	B. C. Oscillator Coil	33	G-39002-27	Res. 2.2 megohm
6	G-32004-287	1st I. F. Transformer	34	W-133758-1	Res. 820 ohm
7	G-32004-288	2nd I. F. Transformer	35	None	
8-A	C-133775-1	Var. Cond. Ant. Sec.	36	None	
8-B		Var. Cond. Osc. Sec.	37	C-133786-1	Speaker
9-A	B-132386-5	H. F. Ant. Trimmer	38	W-133712-1	Band Switch
9-B		B. C. Ant. Trimmer	39	W-132822-1	Spk. Plug & Cable
9-C		B. C. Osc. Trimmer	40-A	B-130520-2	Volume Control
10	None		40-B		Power Switch
11	G-34002-21	Cond. 600 Mmf. Mica	40-C		Power Switch
12	G-39001-65	Cond. .05 Mf. 200 V.		B-133720-5	Variable Cond. Brkt. (1)
13	G-39004-6	Cond. 75 Mmf. Mica		G-132231-14	Dial Assem.
14	G-39001-9	Cond. .022 Mf. 600 V.		G-132167-12	Drive Cord Assem.
15	G-39001-10	Cond. .0033 Mf. 600 V.		W-132119-6	Drive Shaft
16	G-39001-10	Cond. .0033 Mf. 600 V.		B-132320-1	Dial Pointer
17-A	W-49664-B	Cond. 16 Mfd. Elect.		G-34403-387	Antenna Grad. Lead (1)
17-B		Cond. 16 Mfd. Elect.		W-51071	Retaining Ring (1) Drive Shaft
18	G-39001-10	Cond. .0033-Mf. 600 V.		D-133727-1	Cabinet
19	G-39004-7	Cond. 100 Mmf. Mica		133728	Carton
20	G-39001-9	Cond. .0022 Mf. 600 V.		133818	Screw (3) Chassis Mtg.
21	None			W-45579	Washer (3) Chassis Mtg.
22	G-39002-28	Res. 3.3 megohm 1/4 W.		W-130197	Knob (3)
23	G-39002-21	Res. 220,000 ohm		C-132708-2	Dial Lens
24	G-39002-17	Res. 47,000 ohm 1/4 W.		133729	Instructions
25	G-39002-29	Res. 4.7 megohm		W-133731-1	Battery Pack (CR-69)
26	45981	Res. 32 ohm 1/2 W.		132707	Tack point
27	G-39002-31	Res. 10 megohm		W-46447	Tube Shield
28	G-39002-20	Res. 150,000 ohm 1/4 W.			

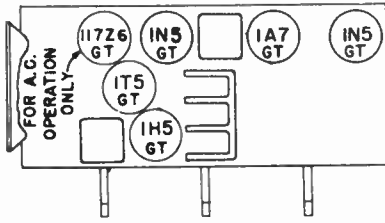
Align. Seq.	Dummy Antenna	Freq'y Setting	Connec'n to Radio	Band Switch	Tun'g Cond. Setting	Trimmer Adjusted	Remarks
<b>Signal Generator</b>							
1.	.02 MF	455 KC.	Antenna Lead	BC	Fully Open	2nd I-F(1) 1st I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead	S.W.	Fully Open	S. W. "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead	S.W.	15 on Dial	S.W. "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0002 MF.	1650 KC.	Antenna Lead	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
5.	.0002 MF.	1400 KC.	Antenna Lead	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

Tube		Battery Pack (CR-69)			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Osc. Anode
1A7GT	Osc. Modulator	1.5	72	40	72
1N5GT	I. F. Amplifier	1.5	84	84	....
1H5GT	Det.-A. S. C. 1st A. F.	1.5	17	....	....
1A5GT	Out Put	1.5	81	84	....

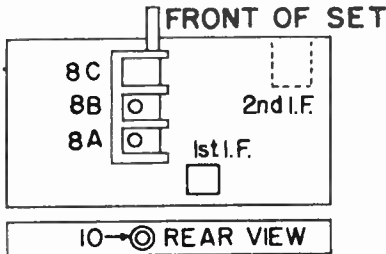


# SERVICE INFORMATION — Model 93 Chassis

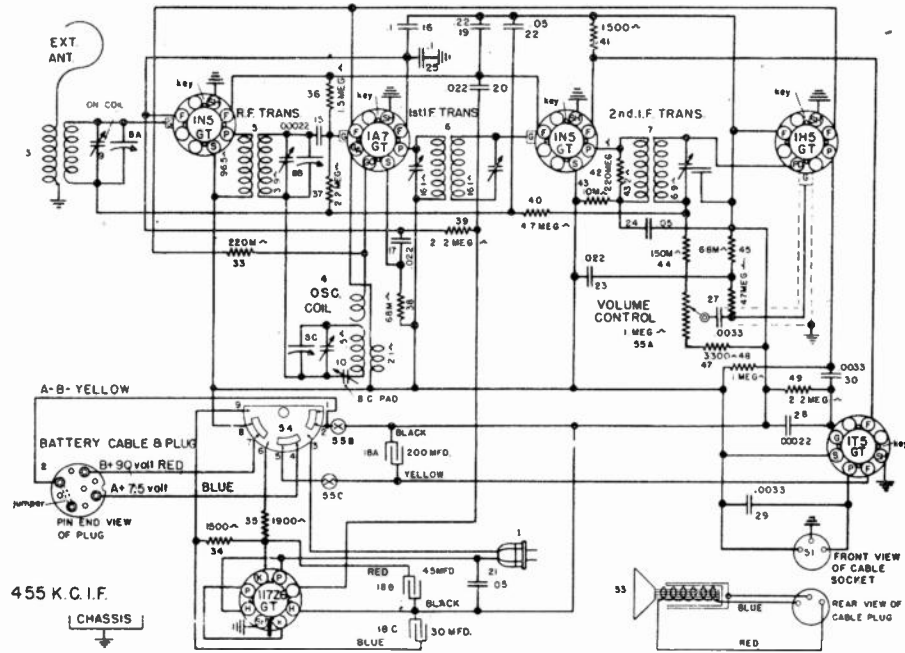
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-1	A. C. Cable & Plug	39	39002-G27	Res. 2,200,000 Ohm. 1/4 W.
2	132809-1	Battery Cable & Plug	40	39002-G29	Res. 4,700,000 Ohm. 1/4 W.
3	G-32300-244	Ant. Coil	41	39002-G8	Res. 1,500 Ohm. 1/4 W.
4	32002-G275	Osc. Coil	42	39002-G23	Res. 220,000 Ohm. 1/4 W.
5	32001-G119	R. F. Trans.	43	39002-G13	Res. 10,000 Ohm. 1/4 W.
6	32004-G285	1st I.F. Trans.	44	39002-G20	Res. 1,500,000 Ohm. 1/4 W.
7	32004-G286	2nd I.F. Trans.	45	39002-G18	Res. 68,000 Ohm. 1/4 W.
8A	132759-1	Vari. Cond. Ant. Sec.	46	39002-G29	Res. 4,700,000 Ohm. 1/4 W.
8B	132759-1	Vari. Cond. R. F. Sec.	47	39002-G10	Res. 3,900 Ohm. 1/4 W.
8C	132759-1	Vari. Cond. Osc. Sec.	49	39002-G27	Res. 2,200,000 Ohm. 1/4 W.
9	132267-1	Trimmer Cond. Ant. Shunt	50	None	
10	132267-2	Trimmer Cond. Osc. Series	51	132822-2	Speaker Cable & Socket
11	None		52	None	
12	None		53	132731	Speaker Assem.
13	None			133786-1	Speaker
14	None			26090	Screw (Speaker) (2)
15	39004-G9	Cond. .00022 Mf. Mica.		2118	Washer (Speaker) (2)
16	39001-G67	Cond. .1 Mf. 200 V. Paper		N-3062	Hex. Nut (Speaker) (2)
17	39001-G63	Cond. .002 Mf. 200 V. Paper		O-6	Flat Washer (Speaker Mtg.) (8)
18A	132501-1	Cond. 200 Mfd. 30 V. Elect.		33265	Lock Washer (Speaker Mtg.) (2)
18B	132501-1	Cond. 45 Mfd. 200 V. Elect.	54	49772-3	Function Switch
18C	132501-1	Cond. 35 Mfd. 200 V. Elect.	55A	130520-3	Volume Control
19	39001-G69	Cond. .22 Mf. 200 V. Paper	55B		Power Switch
20	39001-G63	Cond. .022 Mf. 200 V. Paper	55C		Power Switch
21	39001-G65	Cond. .05 Mf. 200 V. Paper		133646-1	Cabinet 63 FB.
22	39001-G65	Cond. .05 Mf. 200 V. Paper		132721-1	Screw—Chassis Mtg. (3)
23	39001-G63	Cond. .002 Mf. 200 V. Paper		45020	Washer—Chassis Mtg. (3)
24	39001-G65	Cond. .05 Mf. 200 V. Paper		132127-1	Knob (3)
25	39001-G67	Cond. .1 Mf. 200 V. Paper		132708-2	Dial Lens
26	None			132707-1	Tack Points (14)
27	39001-G10	Cond. .0033 Mf. 600 V. Paper		132331-11	Dial Face Assn.
28	39004-G9	Cond. .00022 Mf. Mica.		132648-1	Screw—Dial Face—(2)
29	39001-G10	Cond. .0033 Mf. 600 V. Paper		132320-1	Dial Pointer
30	39001-G10	Cond. .0033 Mf. 600 V. Paper		CR-134048	4 1/2 V. Battery (2)
31	None			CR-134049	45 V. Battery (2)
32	None			132641-1	Drive Shaft
33	39002-G23	Res. 220,000 Ohm. 1/4 W.		49829-B	Retaining Spring—Drive Shaft
34	39002-G8	Res. 1,500 Ohm. 1/4 W.			Cable—Individual Batteries Adapter
35	132502-1	Res. 1900 Ohm. Candelom		132167-13	Drive Cord Assy.
36	39002-G26	Res. 1,500,000 Ohm. 1/4 W.		132490-1	Junction Block (2)
37	39002-G27	Res. 2,200,000 Ohm. 1/4 W.			
38	39002-G18	Res. 68,000 Ohm. 1/4 W.			

### ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	"OSC." Series Pad	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 7.5 volts, .05 Amp.; "B" Battery drain @ 90 V., 12.5 M. A.;  
Power consumption @ 117.5 volts line — 22 Watts

# Chassis Model No. 95

Preliminary

Output Meter Connections.....Plate to Plate of Adjacent 6K6's  
 Generator Ground Connection.....To Chassis or Ground Lead  
 Dummy Antenna to be in Series with Generator Output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Master Tone Control.....All Buttons Out

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Seq.	Dummy Antenna	Frequency Setting	Input Co.nnection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02MF.	455Kc.	Stator lug Rear section of Gang Cond.	B.C.	Fully open	2nd 1-F (2) 1st 1-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002MF.	1620Kc.	Antenna Terminal	B.C.	Fully open	B.C."OSC" 62A	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002MF.	1400Kc.	Antenna Terminal	B.C.	Approx. 140 on dial	B.C."Ant." <sup>64</sup> B.C."R-F" 60A	Adjust for max. output. Do not touch B.C. Osc. trimmer. Adjust for maximum output.
4.	.0002MF.	600Kc.	Antenna Terminal	B.C.	Approx. 60 on dial	B.C."OSC" Series 81	Adjust for max. output while rocking gang thru signal.
5.	400 ohm (Carbon)	6.5Mc.	Antenna Terminal	Police	Fully open	Pol "OSC" 62P	Adjust for peak; gang does not have to tune thru signal. And repeat No. 3
6.	400 ohm (Carbon)	6.0Mc	Antenna Terminal	Police	Approx. 6.0	Pol "ANT." 60B	Adjust for maximum output.
8.	400 ohm (Carbon)	18.3Mc.	Antenna Terminal	S.W.	Fully open	S.W."OSC" 62C	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (Carbon)	18.0Mc	Antenna Terminal	S.W.	Approx. 18	S.W."ANT." 60C	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

**IMPORTANT ALIGNMENT NOTES:** When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

## TUBE VOLTAGE CHART

Socket voltages measured at 117.5 V. Line (between socket pin and chassis) with 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D.C.)

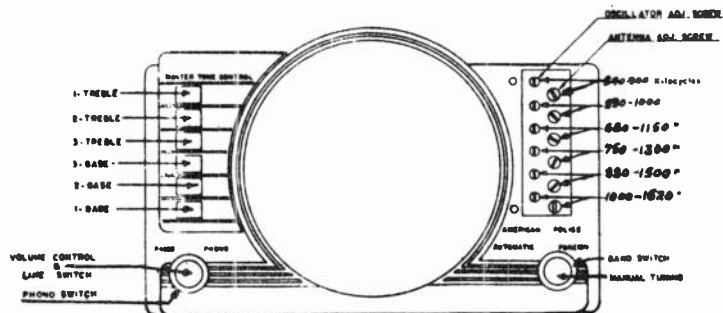
TUBE FUNCTION		1	2	3	4	5	6	7	8
6SK7	R. F. Amplifier	Gnd	Gnd	Gnd	0	Gnd	80	6.3 A.C.	175
6SA7	Converter	Gnd	Gnd	175	80	Neg	0	6.3 A.C.	0
6SK7	1.F Amplifier	Gnd	Gnd	Gnd	0	Gnd	80	6.3 A.C.	175
6SQ7	Det. A. V. C. 1st A. F.	Gnd	0	Gnd	Gnd	0	87	6.3 A.C.	Gnd
6J5GT	Phase Inverter	Gnd	Gnd	125	..	0	..	6.3 A.C.	Gnd
6K6GT	(4) P. P. Parallel Output	Gnd	Gnd	295	175	0	..	6.3 A.C.	..
5Y3G	Rectifier	N.C.	300	..	A.C.	..	A.C.	..	300

Max. Power Output... 12.0 Watts  
 Voltages may vary 10% of values given.

Power Consumption... 90 Watts

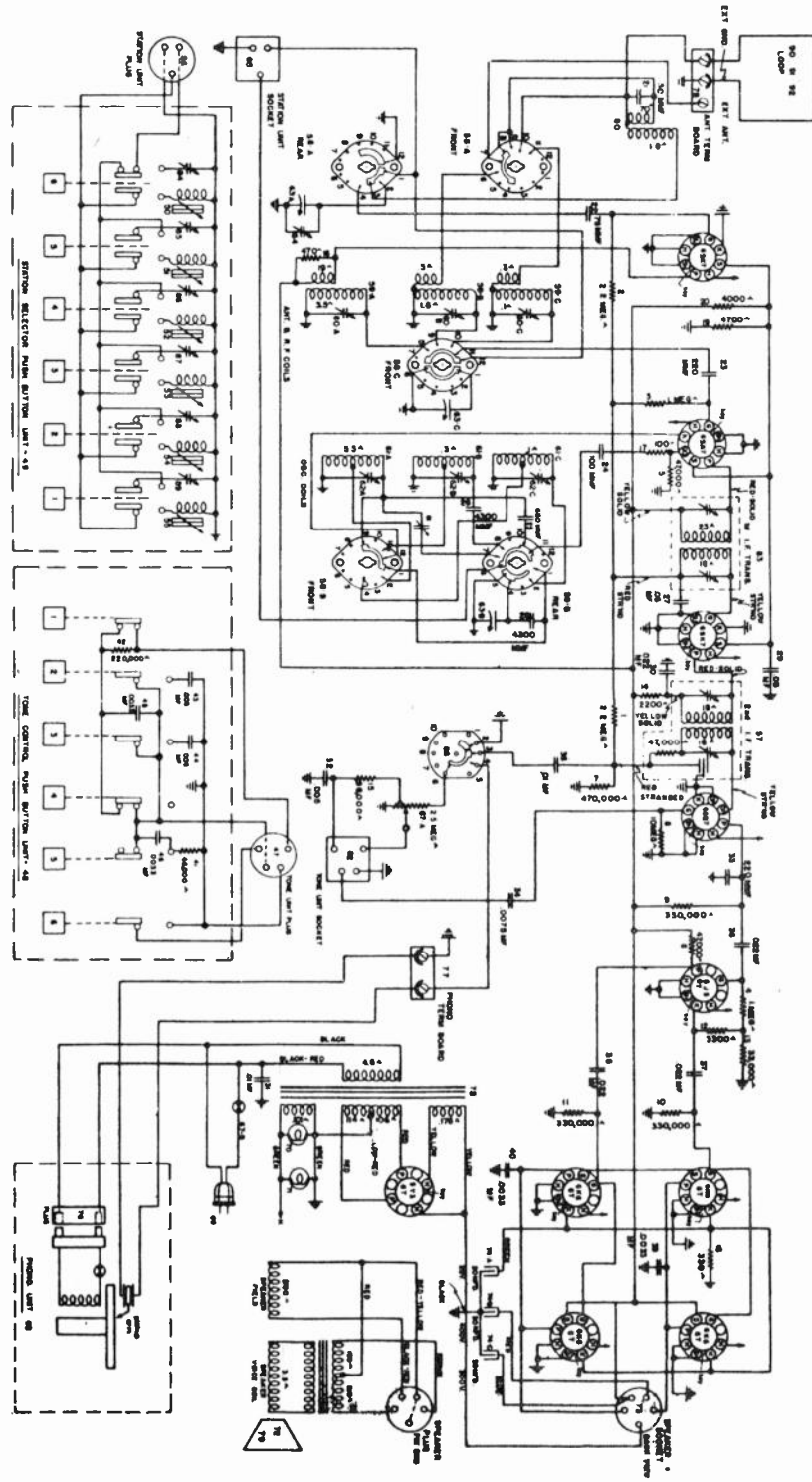
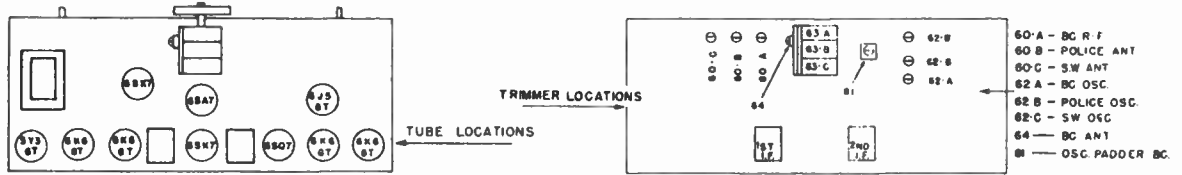
Drop Across Speaker Field... 125 Volts

**GROSLEY**  
*Twice Tested*  
**SERVICE PARTS**





# WIRING DIAGRAM — CHASSIS No. 95





## CHASSIS MODEL No. 96

Output Meter Connections..... Plate to Plate of 6K6  
 Generator Ground Connection..... To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug front sec- tion of Gang Cond.	A	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug front sec- tion of Gang Cond.	A	Fully open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	400 ohm (carbon)	15.3 Mc.	Ant. Terminal	F	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
4.	400 ohm	15.0 Mc.	Ant. Terminal	F	Approx. 15	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal. Do not touch B. C. Osc. Trimmer.
5.	.0002 MF.	1630 Kc.	Ant. Terminal	A	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
6.	.0002 MF.	600 Kc.	Ant. Terminal	A	Approx. 60 on dial	B. C. "OSC" Series	Adjust iron core on rear of chassis for maximum output.
7.	.0002 MF.	1400 Kc.	Ant. Terminal	A	Approx. 140 on dial	B. C. "ANT" Trimmer Rear Chassis	Adjust for maximum output. Do not touch B. C. Osc. Trimmer.
8.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

### TUBE VOLTAGE CHART

Socket voltages measured at 117.5 V. Line (between socket pin and chassis) with 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D.C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7GT—R. F. Amplifier.....		0	0	0	0	0	70	6.3 A. C.	175
6SA7GT—OSC.—Mod.....		0	0	235	70	0	0	6.3 A. C.	0
6SKFGT—I. F. Amplifier.....		0	0	0	0	0	70	6.3 A. C.	235
6BQ7GT—Det. A. S. C. 1st A. F.....		0	0	0	0	0	40	6.3 A. C.	0
6J6GT—Phase Inverter.....		0	0	155	0	0	0	6.3 A. C.	45
6K6GT—(2)—Output.....		0	0	230	235	0	0	6.3 A. C.	16
5Y3G—Rectifier.....			330		355A.C.		355A.C.	J. B.	320

MAX. POWER OUTPUT..... 6.8 WATTS  
 POWER CONSUMPTION..... 85 WATTS  
 DROP ACROSS SPEAKER FIELD..... 95 VOLTS  
 PHONO MOTOR..... 25 WATTS

Voltages may vary 10% of values given.

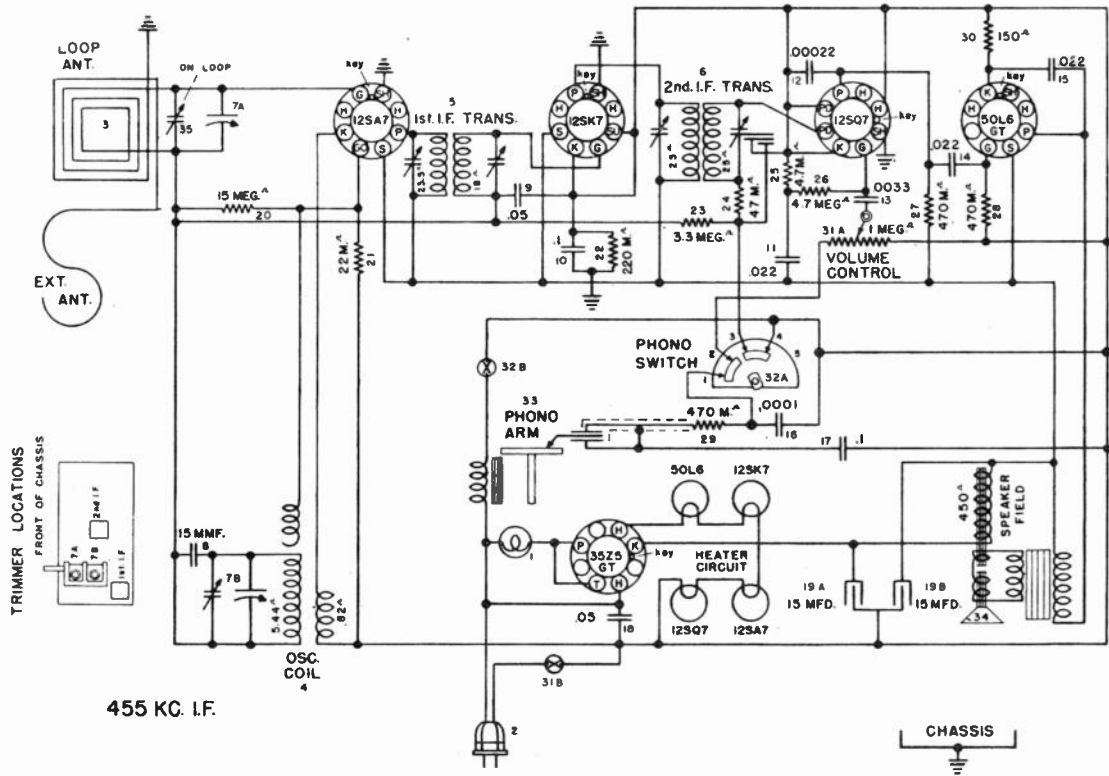


# CHASSIS No. 100

Alignment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Phono. Radio Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 Kc.	Antenna Lead	Radio	Fully Open	1st I-F (2) 2nd I-F (2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1620 Kc.	Antenna Lead (red)	Radio	Fully Open	B. C. "Osc."	Adjust for maximum output. Gain does not have to tune through signal.
3.	.0001 MF.	1400 Kc.	Antenna Lead (red)	Radio	140 Dial	B. C. "Ant."	Adjust for maximum output.

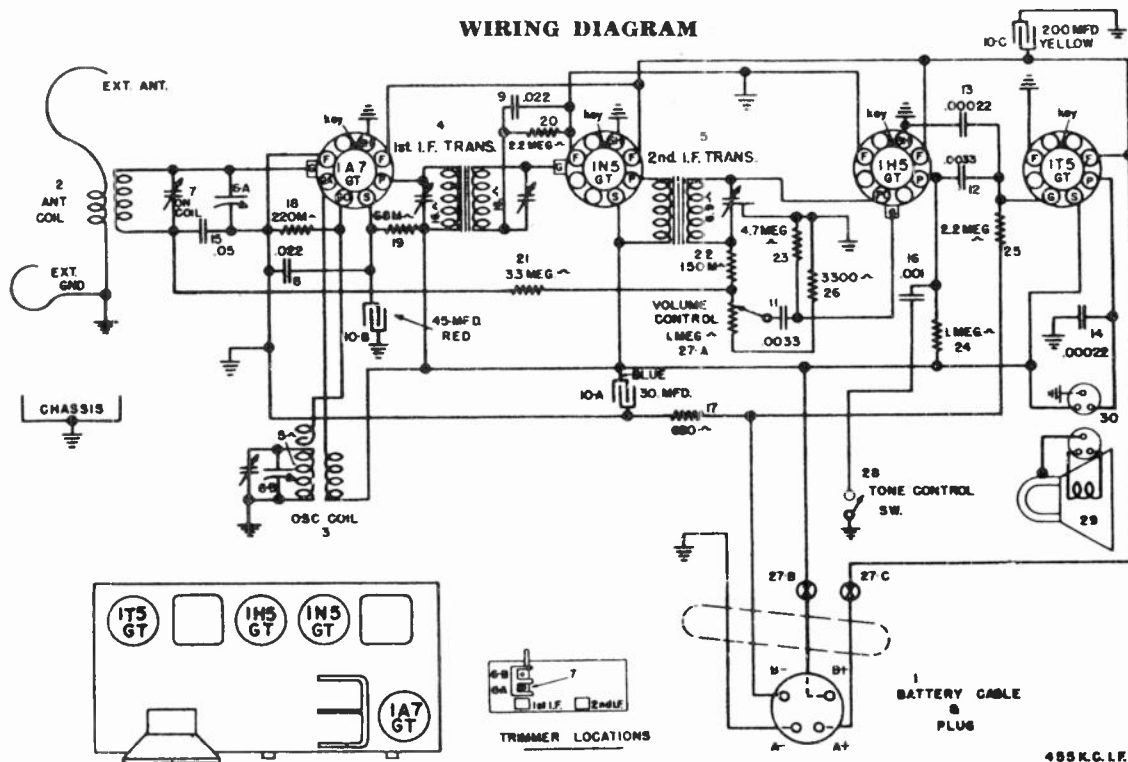
TUBE	FUNCTION	1	2	3	4	5	6	7	8
12SA7	Osc. Mod.			85	85	Neg.	0		Neg.
12SK7	I. F. Amp.			0	Neg.	0	85		85
12SQ7	Det., Etc.		0	0	0	Neg.	40		0
50L6	B. P. O.			80	85	0			
35Z5	Rect.						117.5A.C.		110



Item No.	Part No.	Description	Item No.	Part No.	Description
1	W18858	Dial Light	1301129		Bottom
2	H132300 1	Power Cable & Plug	W132119 7		Drive Shaft
3	GH134107 1	Loop Antenna	W51071		Retaining Ring Drive Shaft
4	G130902 285	Osc. Coil	W49570		Trimount Stud (16)
5	G130901 280	1st I. F. Trans.	W49570		Dial & Bottom Mtg.
6	G130901 291	2nd I. F. Trans.	G132099 4		Dial Face
7A	G130902	Var. Cond. Ant. Sec.	W132097 8		Dial Pointer
7B	G130902	Var. Cond. Osc. Sec.	L132131		Drive Cord Assem.
8	G130901 2	Cond. 15 Mfd. 200 V.	W134217-1		Var. Cond. Mtg. Brkt.
9	G130901 05	Cond. .05 Mf. 200 V.	W5536		Screw (2) Speaker
10	G130901 07	Cond. .1 Mf. 200 V.	1A		Lockwasher (2) Speaker
11	G130901 03	Cond. .022 Mf. 200 V.	08		Flat Washer (2) Speaker
12	G130904 9	Cond. .00022 Mf.	W134218-1		Speaker Mtg. Brkt.
13	G130901 10	Cond. .0033 Mf. 400 V.	4379		Screw (2) Speaker Mtg.
14	G130901 03	Cond. .022 Mf. 200 V.	G130904		Socket (5) Tube
15	G130901 03	Cond. .022 Mf. 200 V.	W47577		Cable Lock Plate
16	G130901 7	Cond. .0001 Mf.	W134071-9		Junction Block (2)
17	G130901 07	Cond. .1 Mf. 200 V.	45008		P. K. Screw (2) Var. Cond. Brkt.
18	G130901 05	Cond. .05 Mf. 200 V.	1134041 1		5 1/2" Cabinet
19A	W134177 1	Cond. 15 Mf. Elect.	1130490-2		Screw (3) Chassis to Cabinet
19B	W134177 1	Cond. 15 Mf. Elect.	W30409		Washer (3) Chassis to Cabinet
20	50671	Res. 15 megohm 1/4 W.	1A		Lockwasher (3) Chassis to Cabinet
21	G130902 15	Res. 22,000 ohm 1/4 W.	130313-A		Knob
22	G130902 21	Res. 220,000 ohm 1/4 W.	W132117-3		Dial Lens
23	G130902 28	Res. 3.3 megohm 1/4 W.	134185-1		Instructions
24	G130902 17	Res. 47,000 ohm 1/4 W.	130582		Phono. Motor
25	G130902 11	Res. 4700 ohm 1/4 W.	C133439-1		Phono. Motor
26	G130902 29	Res. 4.7 megohm 1/4 W.	B134245-3		Tone Arm
27	G130902 23	Res. 470,000 ohm 1/4 W.	W134246-1		Arm Rest Spacer
28	G130902 23	Res. 470,000 ohm 1/4 W.	GW132650-1		Needle Assem.
29	G130902 23	Res. 470,000 ohm 1/4 W.	20881		Screw (5) Loop Mtg.
30	G130902-33	Res. 150 ohm 1/4 W.	06		Flat Washer (5) Loop Mtg.
31A	49774 1	Volume Control	W131126		Ratio Spring (1)
31B	49774-1	S. P. S. T. A. C. Switch	W131126		For 50 Cycle Operation
32A	B132249 2	Phono. Switch	GB134107-1		Loop & Support Assem.
32B	B132249 2	S. P. S. T. A. C. Switch	W134247-1		Tone Arm Rest
33	B134245 1	Phono. Arm	134248-1		Screw (1) Arm Rest Spacer
34	C49075-9	Speaker Assem.	47329		(1) Hex Nut (Tone Arm)
35	W49652 2	Trimmer Cond.	47328		(1) Shakeproof Washer Tone Arm

# SERVICE INFORMATION — MODEL 104 CHASSIS

## WIRING DIAGRAM



## PARTS LIST — MODEL 43FA

Item	Part No.	Description	Item	Part No.	Description
1	130493-A	Battery Cable & Plug	16	39001-7	Cond. .001 Mf. 600 V. Paper
	132167-3	Drive Cord Assem.	17	39002-6	Res. 680 Ohm 1/4 W.
	132119-3	Drive Shaft	18	39002-21	Res. 220,000 Ohm 1/4 W.
	51071	Retaining Ring	19	39002-18	Res. 68,000 Ohm 1/4 W.
	132097-6	Dial Pointer	20	39002-27	Res. 2.2 Meg. Ohm 1/4 W.
	132231-9	Dial Assem.	21	39002-28	Res. 3.3 Meg. Ohm 1/4 W.
	132258	Dial Lens	22	39002-20	Res. 150,000 Ohm 1/4 W.
2	32000-244	Ant. Coil	23	39002-29	Res. 4.7 Meg. Ohm 1/4 W.
3	32002-272	Osc. Coil	24	39002-25	Res. 1 Meg. Ohm 1/4 W.
4	32004-268	1st I. F. Trans.	25	39002-27	Res. 2.2 Meg. Ohm 1/4 W.
5	32004-276	2nd I. F. Trans.	26	29001-10	Res. 3300 Ohm 1/4 W.
6A	132150-1	Vari. Cond. R. F. Sect.	27A	130520-2	Volume Control
	130429	Screw (3)	27B		S. P. S. T. Switch
	45580-A	Grommet (3)	27C		S. P. S. T.
	45620	Headed Bushing (3)	28	49772-1	Tone Control Sv.
6B		Vari. Cond. Osc. Sec.	29	132670-3	Speaker
7	44655	Trimmer Cond.	30	132822-1	Speaker Cable Assem.
8	39001-63	Cond. .022 Mf. 200 V. Paper		133598-2	Cabinet 43 FA
9	39001-63	Cond. .022 Mf. 200 V. Paper		133599-1	Carton
10A	132501-1	Cond. Elect. 35 Mf. 100 V.		130558	Screw—Chassis Mtg. (3)
10B		Cond. Elect. 45 Mf. 120 V.		L-8	Lockwasher—Chassis Mtg. (3)
10C		Cond. Elect. 200 Mf. 8.5 V.		30409	Washer—Chassis Mtg. (3)
11	39001-10	Cond. .0033 Mf. 600 V. Paper		132127-1	Knob (3)
12	39001-10	Cond. .0033 Mf. 600 V. Paper		42911	Cabinet Protector (3)
13	39004-9	Cond. .00033 Mf. Mica.		132750	Hansco Tack (9) Dial Lens Mtg.
14	39004-9	Cond. .00022 Mf. Mica.		134190-1	Instructions
15	39001-65	Cond. .05 Mf. 200 V. Paper		133731-1	Battery Pack

### SIGNAL GENERATOR

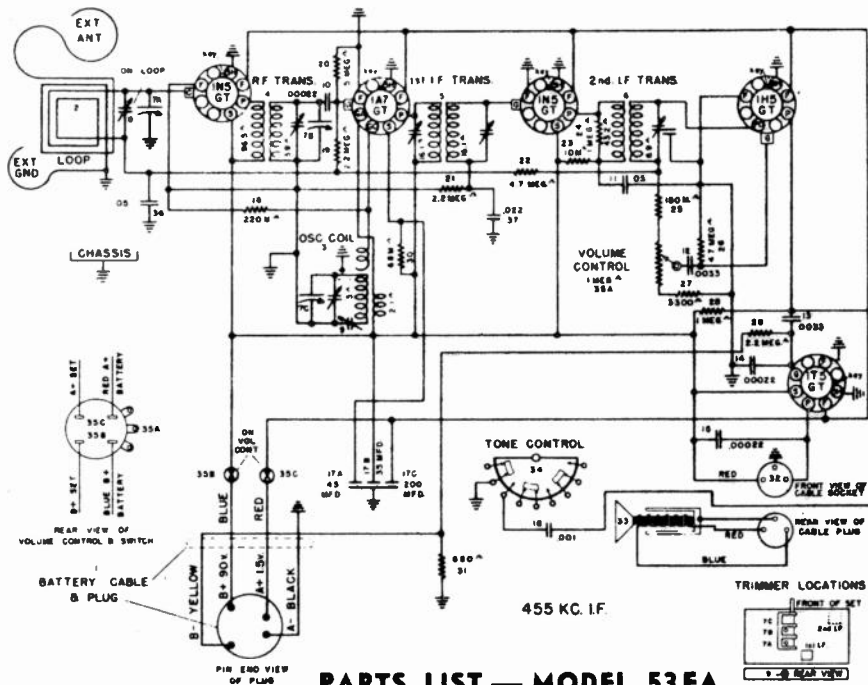
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output

Repeat above procedures for more accurate adjustments.

Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .20 Amp.; "B" Battery drain at 90 V., 10 M. A.

# WIRING DIAGRAM — MODEL 105 CHASSIS



## PARTS LIST — MODEL 53 FA

Item	Part No.	Description	Item	Part No.	Description
1	B-130493-A	Battery Cable & Plug	30	G18-39002	Res. 68,000 ohm 1/4 W.
2	G6-132810-3	Loop Assem.	31	G6-39002	Res. 680 ohm 1/4 W.
3	G-275-32002	Osc. Coil	32	W-132822-2	Speaker Cable & Socket
4	G-119-32001	R. F. Trans.	33	C-132670-3	Speaker Assem.
5	G-285-32004	1st I. F. Trans.	34	G-49772-3	Function Switch
6	G-286-32004	2nd I. F. Trans.	35A	B-130520-3	Volume Control
7A	132759-1	Vari. Cond. Ant. Sec.	35B	B-130520-3	S. P. S. T. Switch
7B	132759-1	Vari. Cond. R. F. Sec.	35C	B-130520-3	S. P. S. T. Switch
7C	132759-1	Vari. Cond. Osc. Sec.	36	G65-39001	Cond. .05 Mf. 200 V.
8	W-132267-1	Trimmer Condenser	37	G63-39001	Cond. .022 Mf. 200 V.
9	W-132267-2	Trimmer Condenser		W-132641-1	Drive Shaft (1)
10	G9-39004	Cond. .00022 Mf. Mica		W-49829-B	Retaining Spring (1) Drive Shaft
11	G65-39001	Cond. .05 Mf. 200 V.		G13-132167	Drive Cord Assem. (1)
12	G10-39001	Cond. .0033 Mf. 600 V.		G18-132231	Dial Face Assem.
13	G10-39001	Cond. .0033 Mf. 600 V.		132648-1	Screw (2) Dial Face
14	G9-39004	Cond. .00022 Mf. Mica		G1-132490	Junction Block (2)
15	G9-39004	Cond. .00022 Mf. Mica		131930	Drive Shaft Bearing (1)
16	G7-39001	Cond. .001 Mf. 600 V.		W-132123	Tube Sockets (5)
17A	W-132501-1	Cond. 45 Mf. 200 V. Elect.		W-131717	Electro Socket (1)
17B	W-132501-1	Cond. 35 Mf. 200 V. Elect.		B-132667-1	Var. Cond. Mtg. Bracket
17C	W-132501-1	Cond. 200 Mf. 30 V. Elect.		G284-34403	Shielded Lead (16 in.)
18	G21-39002	Res. 220,000 ohm 1/4 W.		D132816-1	Cabinet
19	G27-39002	Res. 2.2 megohm 1/4 W.		132817	Carton
20	G26-39002	Res. 1.6 megohm 1/4 W.		132721-1	Screw (3) Chassis Mtg.
21	G27-39002	Res. 2.2 megohm 1/4 W.		W-45020	Washer (3) Chassis Mtg.
22	G29-39002	Res. 4.7 megohm 1/4 W.		W1-132127	Knob (3)
23	G13-39002	Res. 10,000 ohm 1/4 W.		G2-132708	Dial Lens (1)
24	G20-39002	Res. 1 megohm 1/4 W.		132707	Tack Point (14) Dial Lens
25	G20-39002	Res. 150,000 ohm 1/4 W.		S-80	Wood Screw (9) Back Assem.
26	G29-39002	Res. 4.7 megohm 1/4 W.		W-134209-1	Battery Pack
27	G10-39002	Res. 3300 ohm 1/4 W.		B-132320-1	Dial Pointer
28	G25-39002	Res. 1 megohm 1/4 W.		130845	Tack
29	G27-39002	Res. 2.2 megohm 1/4 W.		134203-1	Instructions

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

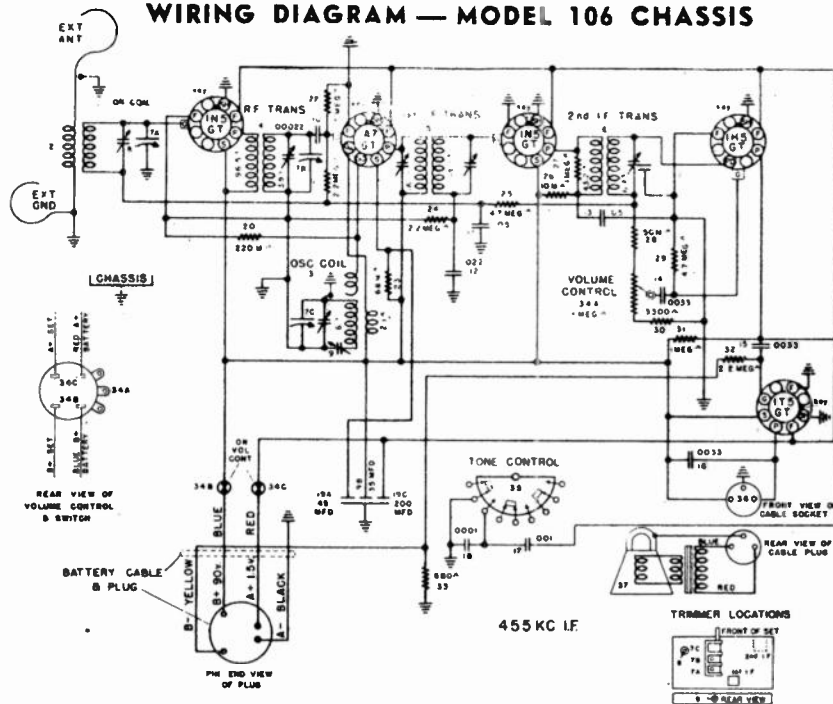
SIGNAL GENERATOR					TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING			
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd. 1-F(1)	Adjust for maximum signal.	
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.	
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.	
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output	

Repeat above procedures for more accurate adjustments.

Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .25 Amp.; "B" Battery drain at 90 V., 10.5 M. A.

## WIRING DIAGRAM — MODEL 106 CHASSIS



## PARTS LIST — MODEL 53FB

Item	Part No.	Description	Item	Part No.	Description
1	B-130493-A	Battery Cable & Plug	30	G-10-39002	Res. 3300 ohm 1/4 W.
2	G-244-32000	Ant. Coil	31	G-25-39002	Res. 1 megohm 1/4 W.
3	G-277-32002	Osc. Coil	32	G-27-39002	Res. 2.2 megohm 1/4 W.
4	G-120-32001	R. F. Trans.	33	G-6-39002	Res. 680 ohm 1/4 W.
5	G-285-32004	1st I. F. Trans.	34A	130520-3	Volume Control
6	G-286-32004	2nd I. F. Trans.	34B	130520-3	S. P. S. T. Switch
7A	132759-1	Vari. Cond. Ant. Sec.	34C	130520-3	S. P. S. T. Switch
7B	132759-1	Vari. Cond. R. F. Sec.	35	W-49772-3	Function Switch
7C	132759-1	Vari. Cond. Osc. Sec.	36	W-132822-2	Speaker Cable & Socket
8	49938	Trimmer Cond.	37	C-133786-1	Speaker Assem.
9	W-132267-2	Trimmer Cond.		W-132841-1	Drive Shaft
10	G-9-39004	Cond. .0022 Mf.		W-49829-B	Retaining Spring (1) Drive Shaft
11	G65-39001	Cond. .05 Mf. 200 V.		G-13-132167	Drive Cord Assem. (1)
12	G63-39001	Cond. .022 Mf. 200 V.		G-18-132231	Dial Face Assem.
13	G65-39001	Cond. .05 Mf. 200 V.		132648-1	Screw (2) (Dial Face)
14	G-10-39001	Cond. .0033 Mf. 600 V.		G-1-132490	Junction Block (2)
15	G-10-39001	Cond. .0033 Mf. 600 V.		B-132320-1	Dial Pointer
16	G-10-39001	Cond. .0033 Mf. 600 V.		131930	Drive Shaft Bearing
17	G-7-39001	Cond. .001 Mf. 600 V.		W-132123	Tube Sockets (5)
18	G-7-39004	Cond. .0001 Mf.		W-131717	Elect. Socket (1)
19A	W-132501-1	Cond. 45 Mf. 200 V. Elect.		B-132667-1	Var. Cond. Mtg. Bracket
19B	W-132501-1	Cond. 35 Mf. 200 V. Elect.		G-284-34403	Shielded Lead Assem.
19C	W-132501-1	Cond. 200 Mf. 30 V. Elect.		133648-1	Cabinet
20	G-21-39002	Res. 220,000 ohm 1/4 W.		133647	Carton
21	G-27-39002	Res. 2.2 megohm 1/4 W.		132721-1	Screw (3) Chassis Mtg.
22	G-26-39002	Res. 1.5 megohm 1/4 W.		W-45020	Washer (3) Chassis Mtg.
23	G-18-39002	Res. 68,000 ohm 1/4 W.		W-132127-1	Knob (3)
24	G-27-39002	Res. 2.2 megohm 1/4 W.		C-132708-2	Dial Lens (1)
25	G-29-39002	Res. 4.7 megohm 1/4 W.		132707-1	Tack Point (14) Dial Lens
26	G-13-39002	Res. 10,000 ohm 1/4 W.		130845	Tack (1)
27	G-25-39002	Res. 1 megohm 1/4 W.		W-134209-1	Battery Pack
28	G-20-39002	Res. 150,000 ohm 1/4 W.		134225-1	Instructions
29	G-29-39002	Res. 4.7 megohm 1/4 W.			

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd. 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F tranny.
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output

Repeat above procedures for more accurate adjustments.

Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .25 Amp.; "B" Battery drain at 90 V., 10.5 M. A.



## CHASSIS No. 110. & 111

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLT-METER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
68A7—OSC.—Mod.				180	73			6.3 A. C.	
68K7—I. F. Amplifier.							73	6.3 A. C.	180
6J5—Detector A. J. C.								6.3 A. C.	
68Q7—1st A. F.							68	6.3 A. C.	
6K6G or GT—Output.			180		180			6.3 A. C.	9
5Y3G—Rectifier.		225			270 A.C.		270 A.C.		225

MAX. POWER OUTPUT, 3.0 WATTS. POWER CONSUMPTION, 60 WATTS. DROP ACROSS SPEAKER FIELD, 45 VOLTS. Voltages may vary 10% of values given.

### PARTS LIST, MODEL 63TA - 63CA — CHASSIS MODEL No. 110 & 111

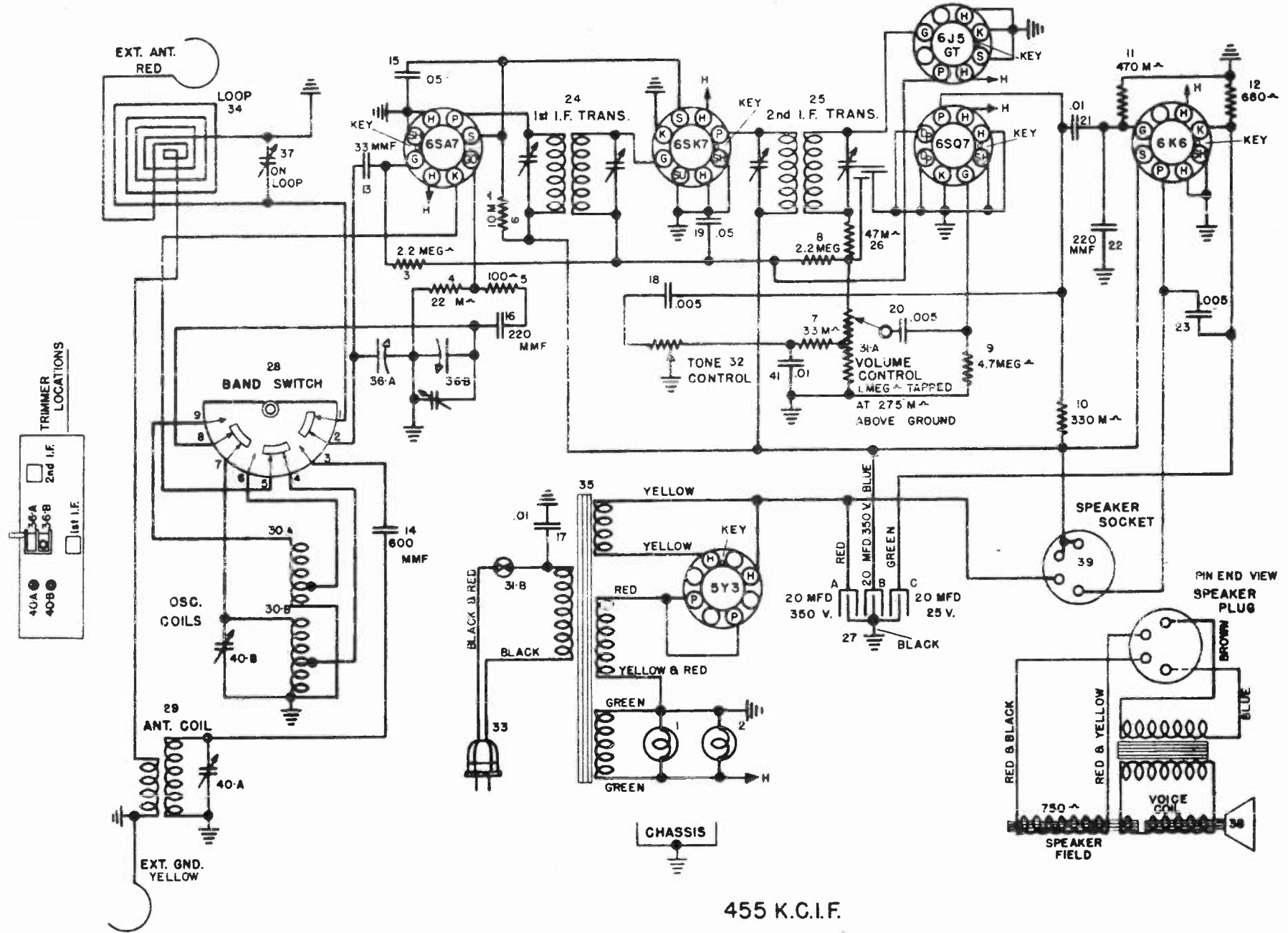
Item	Part No.	Description	Item	Part No.	Description
1	W43567	Dial Light	33	B132300	Cord & Plug
2	W43567	Dial Light.	34	GC134163-1	Loop & Back Assem.
3	G39002-27	Res. 2.2 megohm ¼ W.	35	49838	Power Trans.
4	G39002-15	Res. 22,000 ohm ¼ W.	36A	G39202	Vari. Cond. R. F. Sec.
5	G39002-1	Res. 100 ohm ¼ W.	36B	G39202	Vari. Cond. Osc. Sec.
6	47100	Res. 10,000 ohm W. W.	37	W132267-1	Trimmer Cond.
7	G39002-16	Res. 33,000 ohm ¼ W.	38	G134235-1	Speaker
8	G39002-27	Res. 2.2 megohm ¼ W.	39	G28807-103	Speaker Soc.
9	G39002-29	Res. 4.7 megohm ¼ W.	40A	B132386-8	Trim. Cond.
10	G39002-22	Res. 330,000 ohm ¼ W.	40B	B132386-8	Trim. Cond.
11	G39002-23	Res. 470,000 ohm ¼ W.	41	G39001-61	Cond. .01 Mf. 200 V.
12	G39002-6	Res. 680 ohm ¼ W.		B132668-1	Trans. Screen
13	G39004-4	Cond. 33 Mmf.		B133720-6	Vari. Cond. Mtg. Brkt.
14	G34002-21	Cond. 600 Mmf.		W49817	Trans. Support Strap
15	G39001-41	Cond. .05 Mf. 400 V.		G39204	Socket (6) Tube
16	G39004-9	Cond. 220 Mmf.		G28807-103	Socket (1) Speaker
17	W30805	Cond. .01 Mf. 400 V.		131930	Drive Shaft Brg.
18	G39001-11	Cond. .005 Mf. 600 V.		W132641	Drive Shaft
19	G39001-65	Cond. .05 Mf. 200 V.		W49829-B	Lock Spring (Drive Shaft)
20	G39001-11	Cond. .005 Mf. 600 V.		G132167-14	Drive Cord Assem.
21	G39001-37	Cond. .01 Mf. 400 V.		B132320-1	Dial Pointer
22	G39004-9	Cond. 220 Mmf.		G132231-17	Dial Face Assem.
23	G39001-11	Cond. .005 Mf. 600 V.		48900	Screw (2) Dial Face
24	G32004-289	1st I. F. Trans.		W47577	Cable Lock Plate
25	G32004-291	2nd I. F. Trans.		W134071-8	Junction Block
26	G39002-17	Res. 47,000 ohm ¼ W.		D133928-2	63TJ Cabinet
27A	W132669-1	Cond. Elect. 20 Mf. 350 V.		W45579	Washer (2) Chassis to Cabt. Mtg.
27B	W132669-1	Cond. Elect. 20 Mf. 350 V.		G39220-39	Screw (2) Chassis to Cabt. Mtg.
27C	W132669-1	Cond. Elect. 20 Mf. 350 V.		C132688-1	Dial Lens
28	W49772-3	Band Switch		:32707-1	Tack Point (16) Dial Lens
29	G32000-248	Ant. Coil Assem.		W130197	Knob (4)
30A	G32002-284	S. W. Osc. Coil		134160-1	Instructions
30B	G32002-284	B. C. Osc. Coil		N-8	Nut (4) Spkr. Mtg.
31A	B49793-1	Volume Control		L-8	Lockwasher (4) Spkr. Mtg.
31B	B49793-1	A. C. Switch		8-80	Wood Screw (8) Back Mtg.
32	B131547-1	Tone Control		46460	(4) Headed Bushing Spkr. Mtg.

134494-1 63CA CABINET

#### Signal Generator

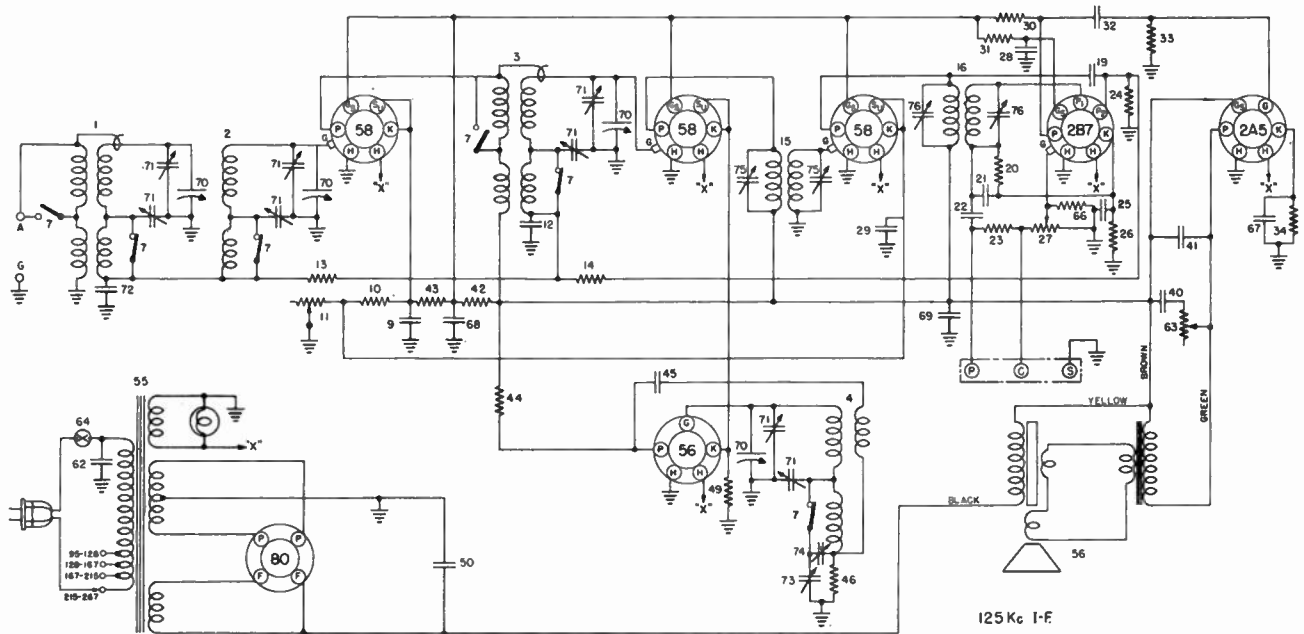
Align-ment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug rear section of Gang Cond.	B.C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Ajduat for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Terminal	S. W.	approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. Do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1620 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer	Adjust for maximum output. Do not touch B. C. OSC. Trimmer.
6.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

WIRING DIAGRAM — CHASSIS No. 110 & 111



171

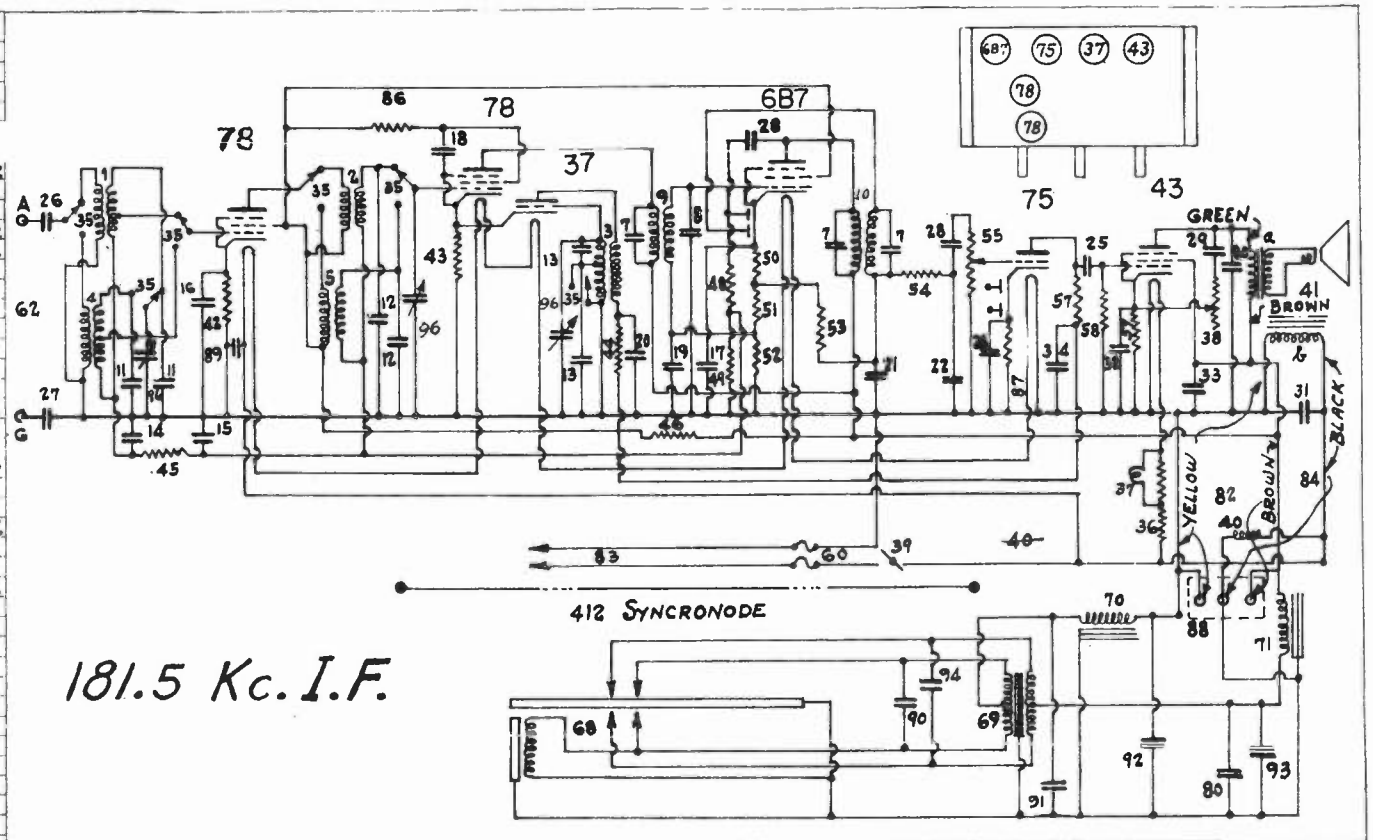
455 K.C.I.F.



PARTS LIST - CHASSIS 115

Item No.	Part No.	Description	Item No.	Part No.	Description
1	LW-30516	Ant. Coil	40-41	W-25517-A	.05 - .008 mfd., 400 v. Cond.
2	LW-28908	Pre Selector Coil	42-43	W-25970-A	10,000 - 15,000 ohms Res.
3	LW-30517	Interstage Coil	44	4923-C	60,000 ohms Res.
4	LW-28892	Osc. Coil	45	W-27540	.0005 mfd. Cond.
7	B-30518-A	Band Selector Switch	46	21875	100,000 ohms Res.
9	W-24049-A	0.1 mfd., 200 v. Cond.	49	W-22514	750 ohms Flex. Res.
10	W-23018-A	40 ohms Flex. Res.	50	W-23701-B	7 mfd., 440 v. Cond.
11	W-26121	Sensitivity Cont.	55	G32-25669	Power Trans.
12	W-24049-A	0.1 mfd., 200 v., Cond.	56	LC-25586	312-4 "M" Speaker
13-14	21454	1.0 megohm Res.	62	W-23191-A	.01 mfd., 200 v. Cond.
15	G3-29167	1st I.F. Trans.	63-64	W-30872	Tone Cont. On-Off Switch
16	G4-29167	2nd I.F. Trans.	66	21454	1 megohm Res.
19	W-26571	.0005 mfd., 200 v. Cond.	67-68-69	W-29150-B	12 mfd., 25 v. Cond. 6 mfd., 450 v. Cond. 8 mfd., 450 v. Cond.
20	21454	1.0 megohm Res.	70-71	G1-33003	Tuning Cond. Padding Conds.
21-22	W-30322-A	.00017 mfd., 200 v. Cond. .006 mfd., 200 v., Cond.	72	W-28621	.02 mfd., 200 v. Cond.
23	21455	300,000 ohms Res.	73-74	G23-33006	Padding Conds.
24	26577	3 megohms Res.	75	G21-33006	1st I.F. Tuning Cond.
25	W-26870-A	6 mfd., 25 v. Cond.	76	G22-33006	2nd I.F. Tuning Cond.
26	21886	10,000 ohms Res.			
27	W-25666-A	Level Cont.			
28-29	W-25516	.25 mfd., 200 v. Cond.			
30	29901	100,000 ohms Res.			
31	23785	500,000 ohms Res.			
32	W-23615	.05 mfd., 400 v. Cond.			
33	21455	300,000 ohms Res.			
34	W-25521	450 ohms Flex. Res.			

1	67-24995	I.F. ANT. TRANS.
2	62-25968	I.F. R.F. TRANS.
3	610-24976	OSCILLATOR COIL
4	614-24995	H.F. ANT. TRANS.
5	63-25968	H.F. R.F. TRANS.
6		
7		
8	W-25008A	I.F. TUNING CONDENSER
9	61-25444	5 <sup>TH</sup> I.F. TRANS.
10	66-25447	2 <sup>ND</sup> I.F. TRANS.
11	61-29699	ANT. TRANS. TRIM. COND.
12	61-29699	R.F. TRANS. TRIM. COND.
13	61-29699	OSC. COIL TRIM. COND.
14	W-27204	0.02 MFD. 200V.
15	W-27204	0.02 MFD. 200V.
16	W-27204	0.02 MFD. 200V.
17	W-27204	0.02 MFD. 200V.
18	W-27205	0.02 MFD. 200V.
19	W-27205	0.02 MFD. 200V.
20	W-27203	0.02 MFD. 200V.
21	W-26152A	0.00015 MFD. 400V.
22	W-26152A	0.0001 MFD. 400V.
23	W-26142	0.02 MFD. 400V.
24	W-24784	0.25 MFD. 200V.
25	W-28615	0.05 MFD. 400V.
26	W-28635	0.006 MFD. 400V.
27	W-27688	0.1 MFD. 400V.
28	W-27540	0.0005 MFD. 400V.
29	W-25517A	0.05 MFD. 400V.
30	W-24049	0.008 MFD. 400V.
31	W-24049	0.1 MFD. 200V.
32	W-30568A	8 MFD. 25V.
33	W-30568A	18 MFD. 250V.
34	W-30568A	8 MFD. 250V.
35	W-30568C	6P. DT. SWITCH
36	W-4099A	12" W. 18" D.
37	W-4099A	6.3V. DIAL LIGHT
38	W-25594B	TONE CONTROL
39	W-25594B	S.P.S.T. SWITCH
40	62-28067	FILTER CHOKES
41	30591A	338-3R. SPEAKER
42	W-25927	275 Ω
43	W-20127	450 Ω
44	21876	10,000 Ω
45	23785	500,000 Ω
46	W-25013	2000 Ω
47		
48	26577	3 MEG.
49	26577	3 MEG.
50	W-21964	165 Ω
51	W-21964	165 Ω
52	W-25927	275 Ω
53	21454	1 MEG.
54	23785	500,000 Ω
55	W-25666B	LEVEL CONTROL
56		
57	21455	300,000 Ω
58	23785	500,000 Ω
59	W-23907	750 Ω
60	W-1983-A	3 AMP. FUSE
61		
62	G7-26719	ANT.-GND TERM.



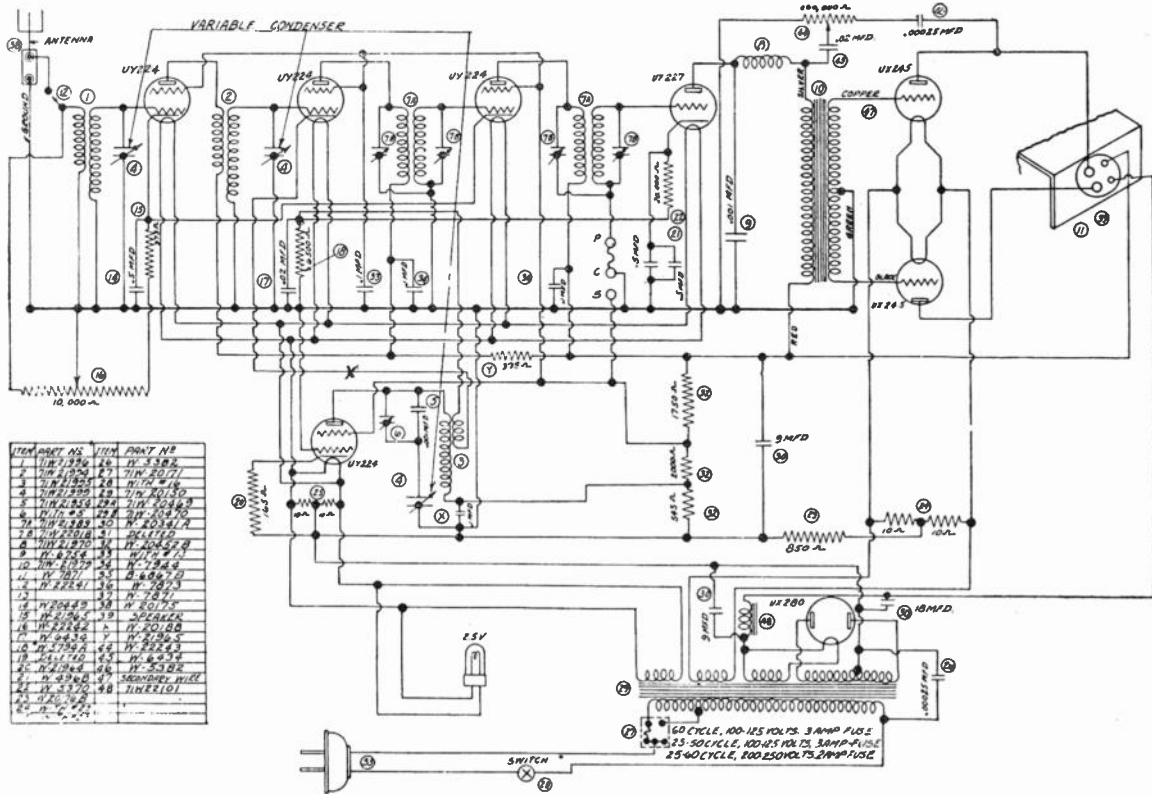
95	W-20-25948	I.F. TUNING CONDENSER
96	610-33002	VARIABLE CONDENSER
97		
98		
99		
100		
101		
102		
63		
64		
65		
66		
67		
68	62-28949	VIBRATOR ASSEM.
69	62-28065	POWER TRANS.
70	65-28168	A FILTER CHOKES
71	62-28069	B FILTER CHOKES
72		
73		
74		
75		
76		
77		
78		

79		
80	W-28978-B	12 MFD. 150V.
81		
82	W-28980	A+B SUPPLY CABLE
83	B-30275-A	CORD + PLUG
84	W-31007	SPEAKER CABLE
85		
86	31094	4500 Ω
87	31094	4500 Ω
88	G2-31128	5-W. TERM. BOARD
89	W-28107	0.003 MFD. MICA
90	W-31404	5 MFD. 300V.
91	W-31403-A	12 MFD. 40V.
92	W-30356	5 MFD.
93	W-40366	5 MFD.
94	W-29810	.01 MFD. 800V. A.C.

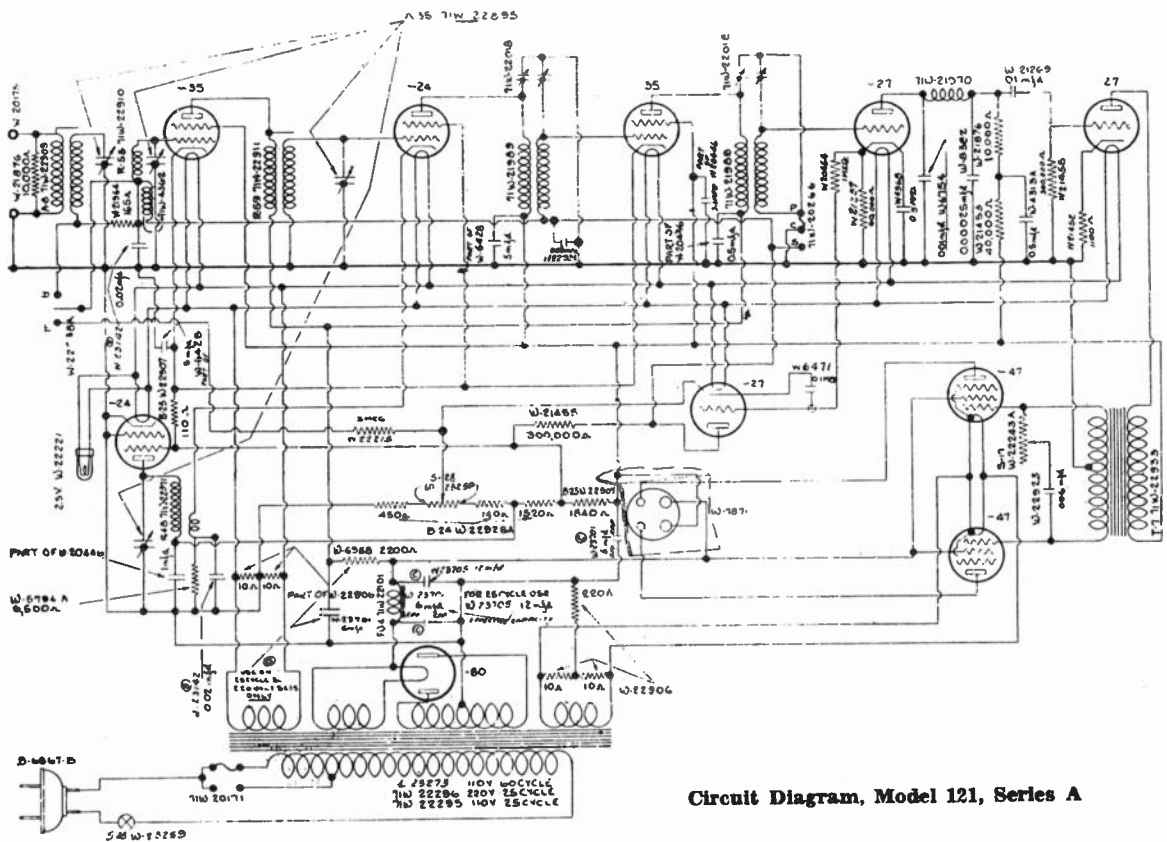
**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**

173

# MODELS 120 & 121

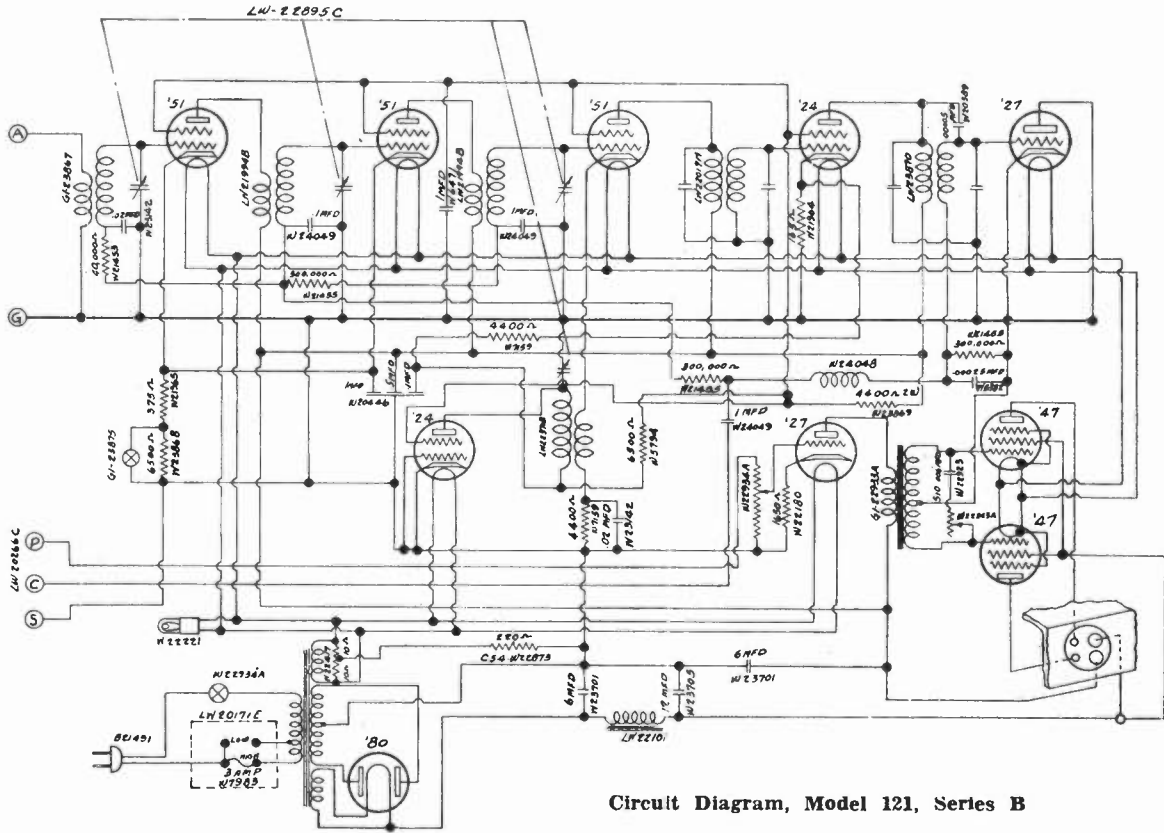


CIRCUIT MODEL 120

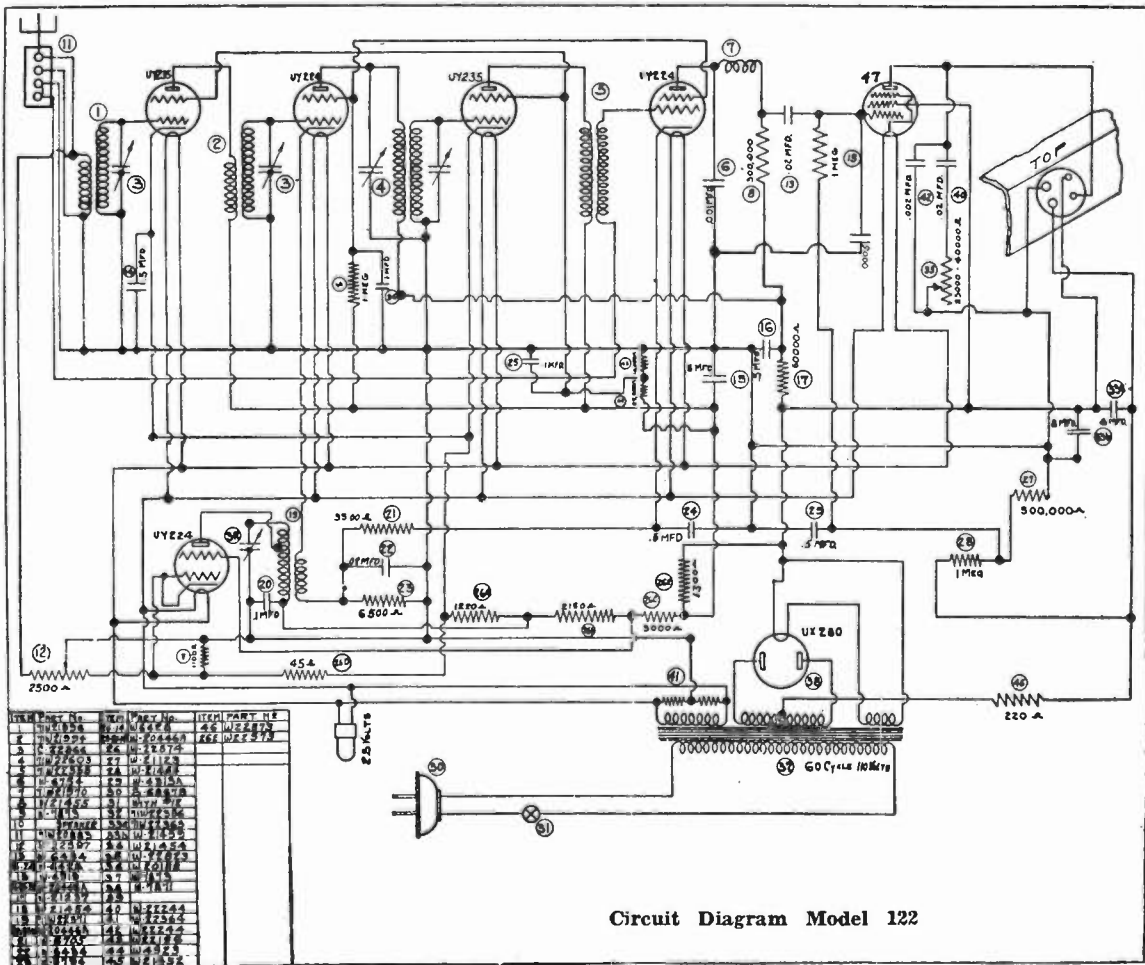


Circuit Diagram, Model 121, Series A

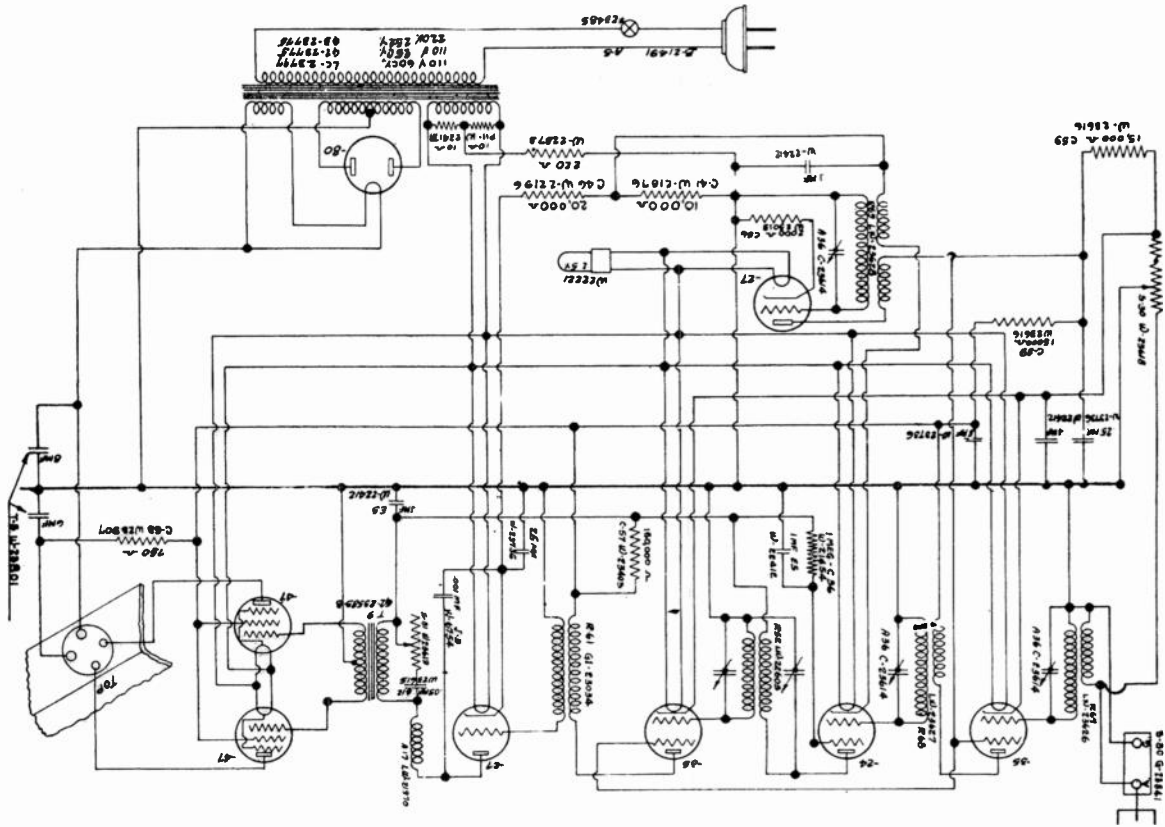
# MODELS 121B & 122



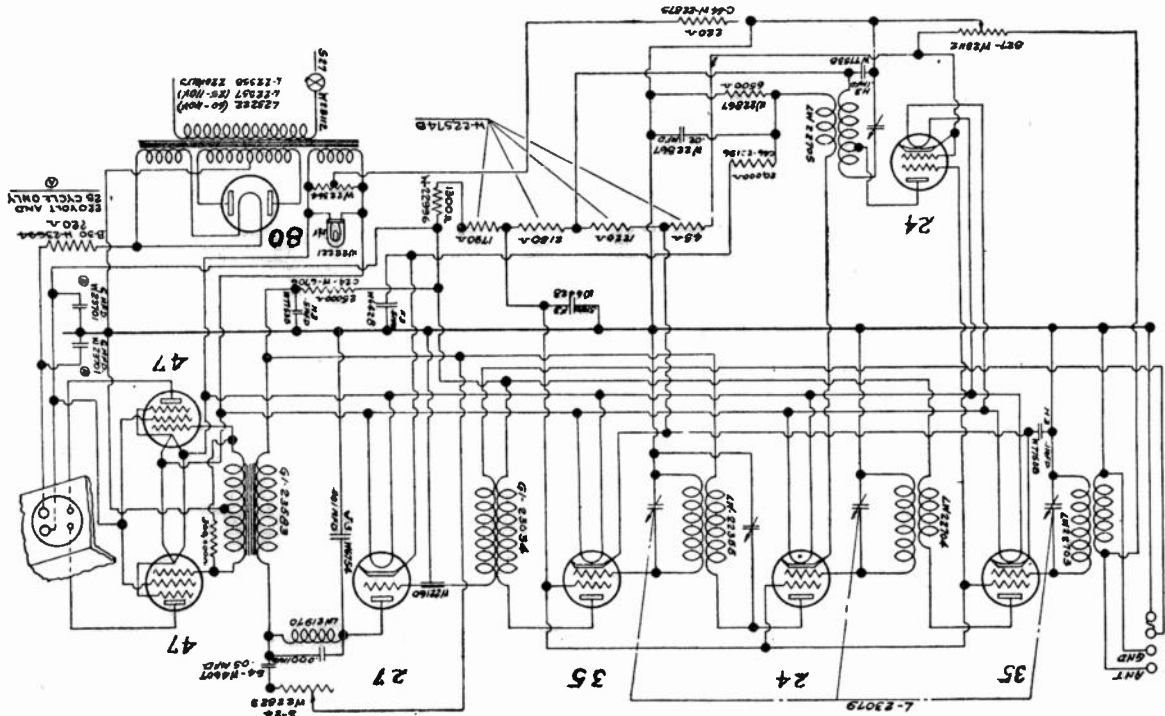
Circuit Diagram, Model 121, Series B



Circuit Diagram Model 122



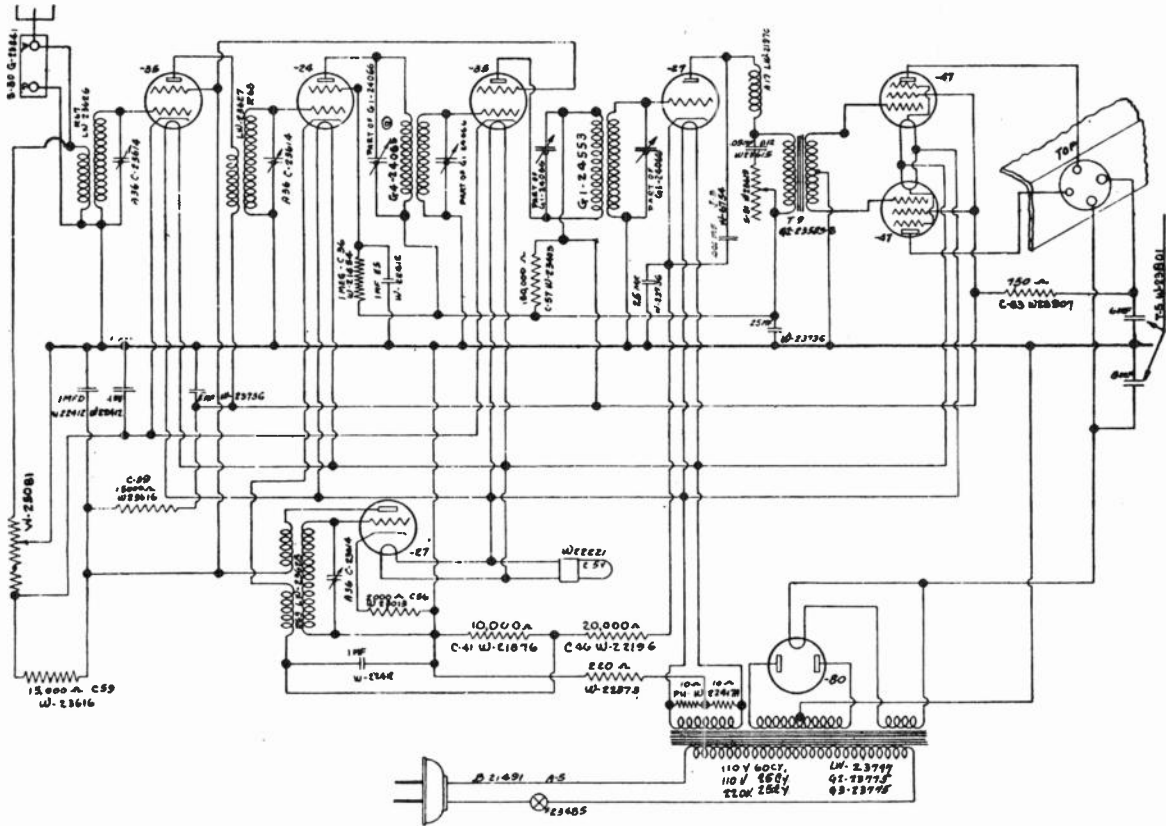
Model 124



Model 123

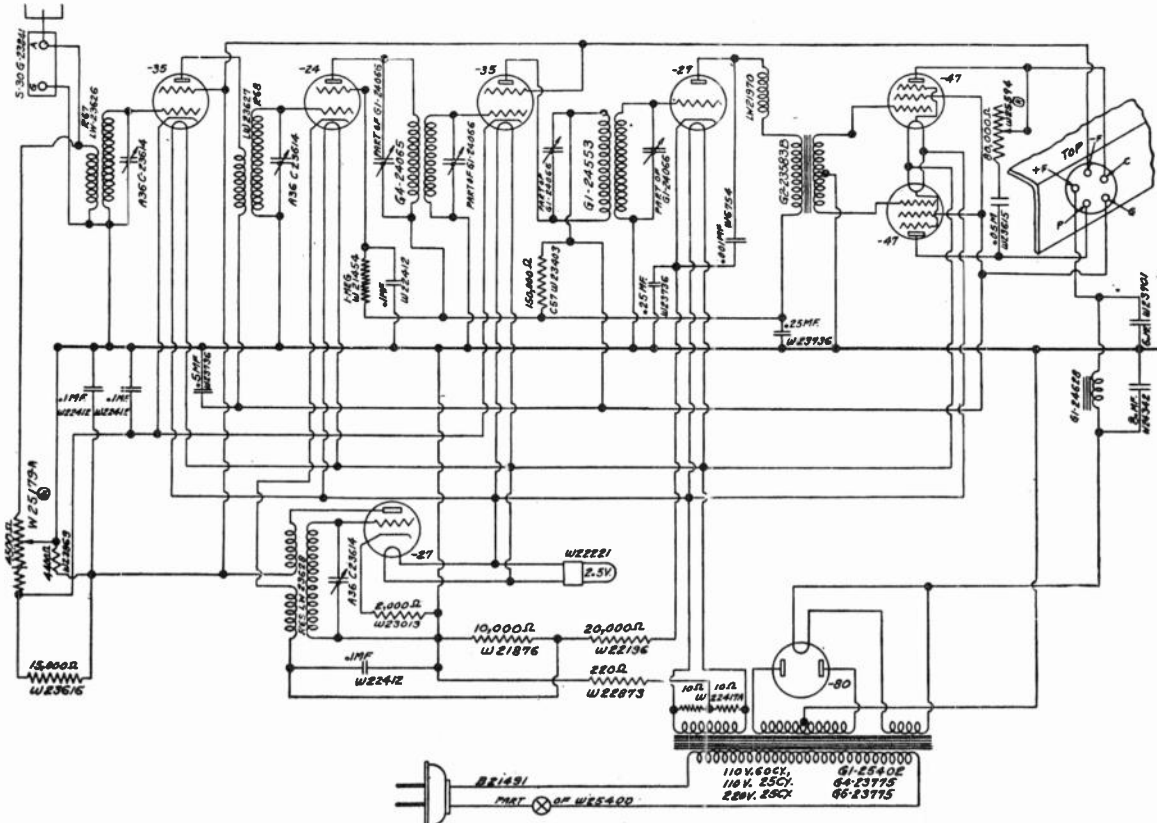
MODELS 123 & 124

MODEL 124 (Revised) & 124-1

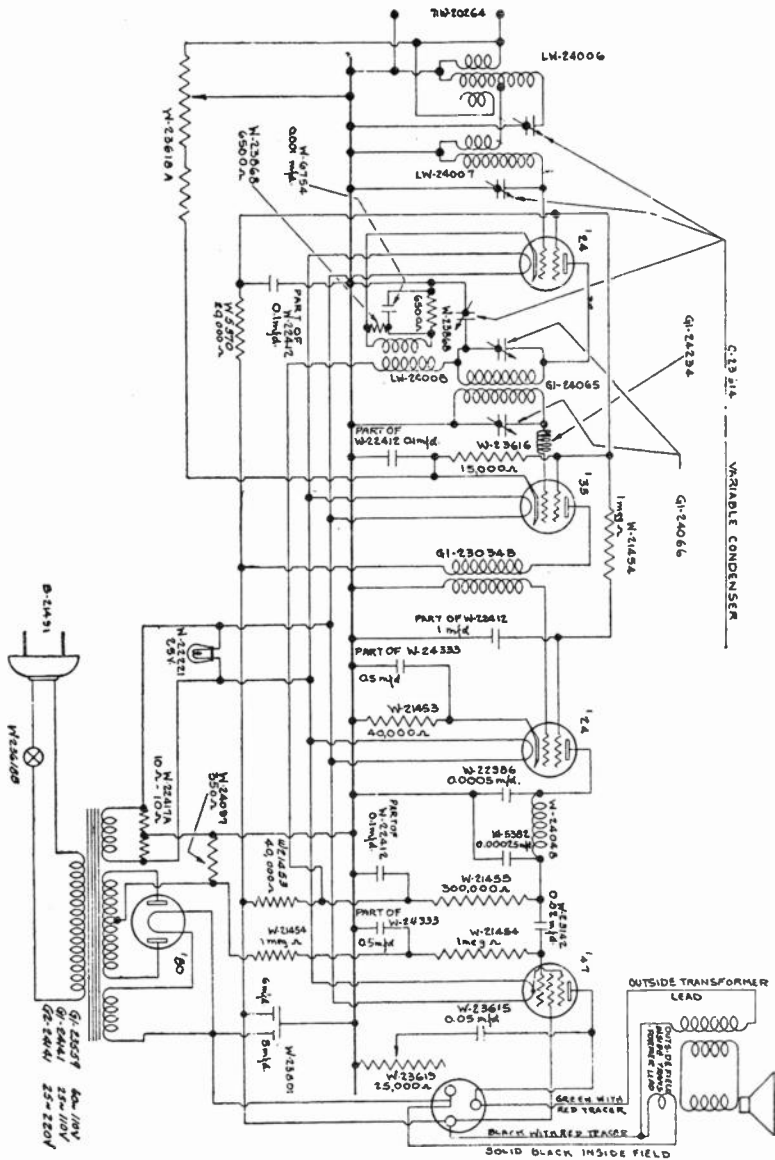


Revised Model 124 Circuit, As Used In Recent Chasses

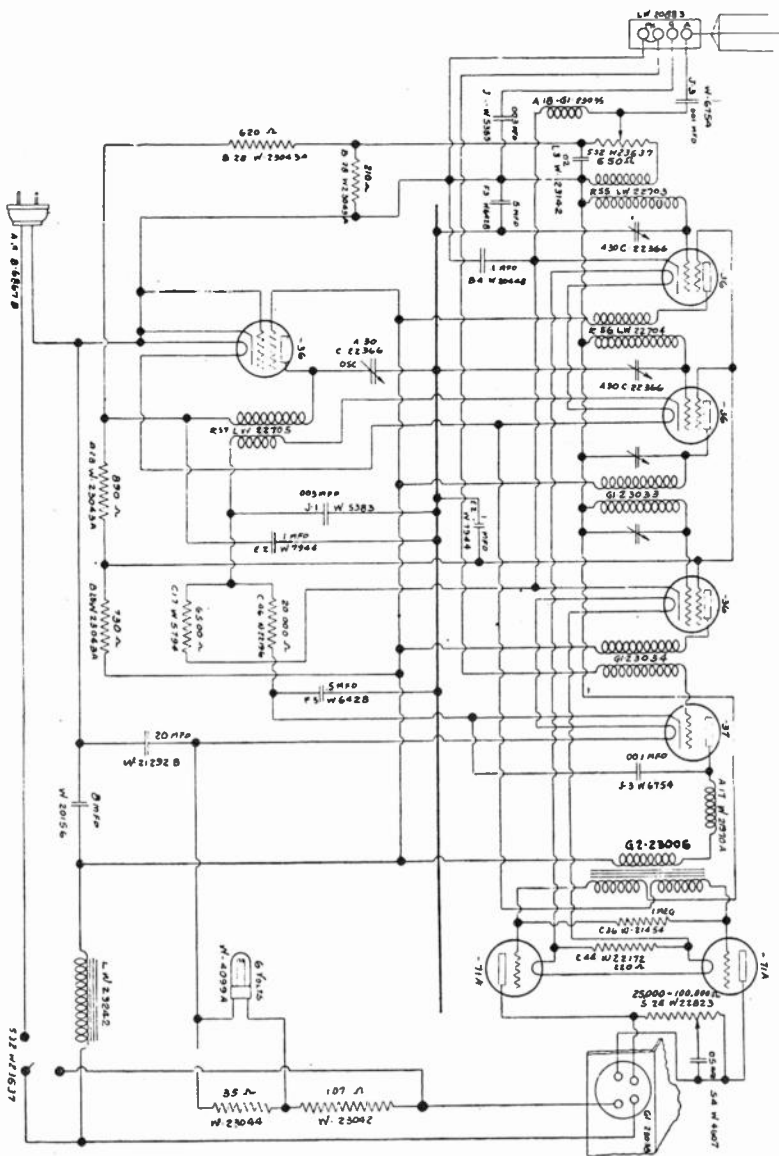
Model 124-1





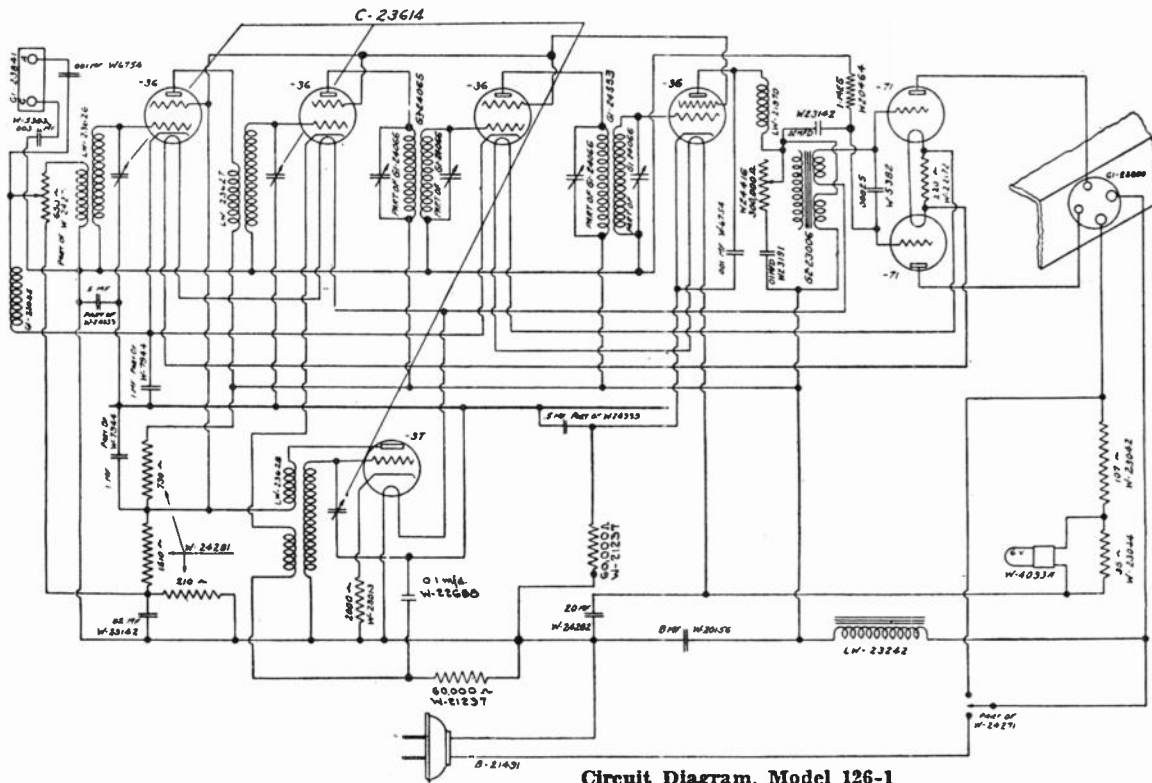


Circuit Diagram, Model 125.

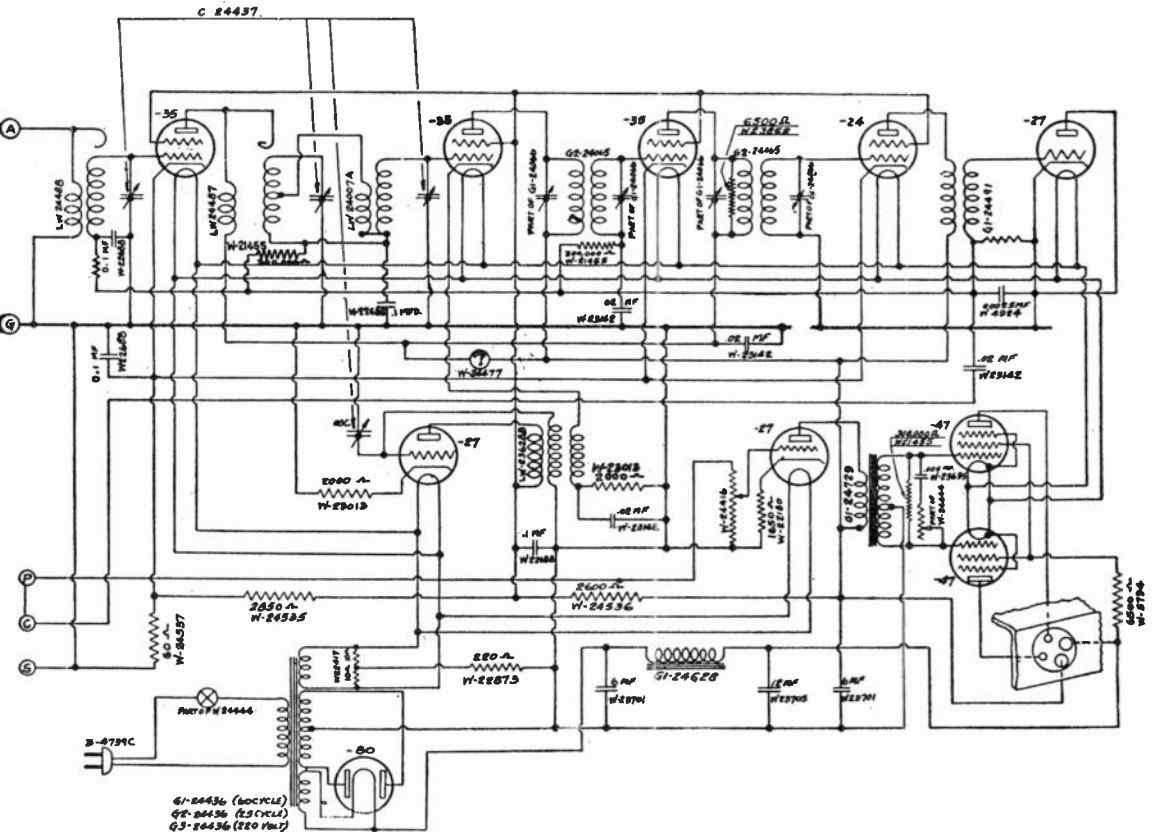


Circuit Diagram, Model 126

# MODELS 126-1 & 127



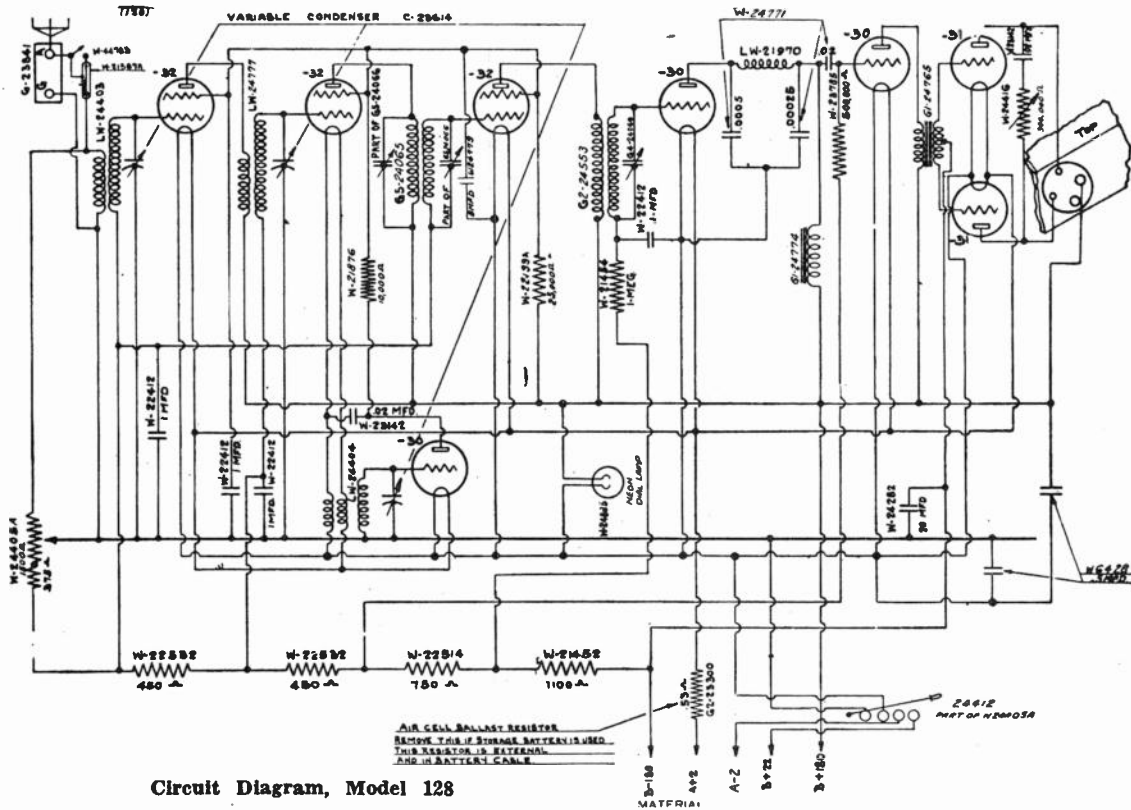
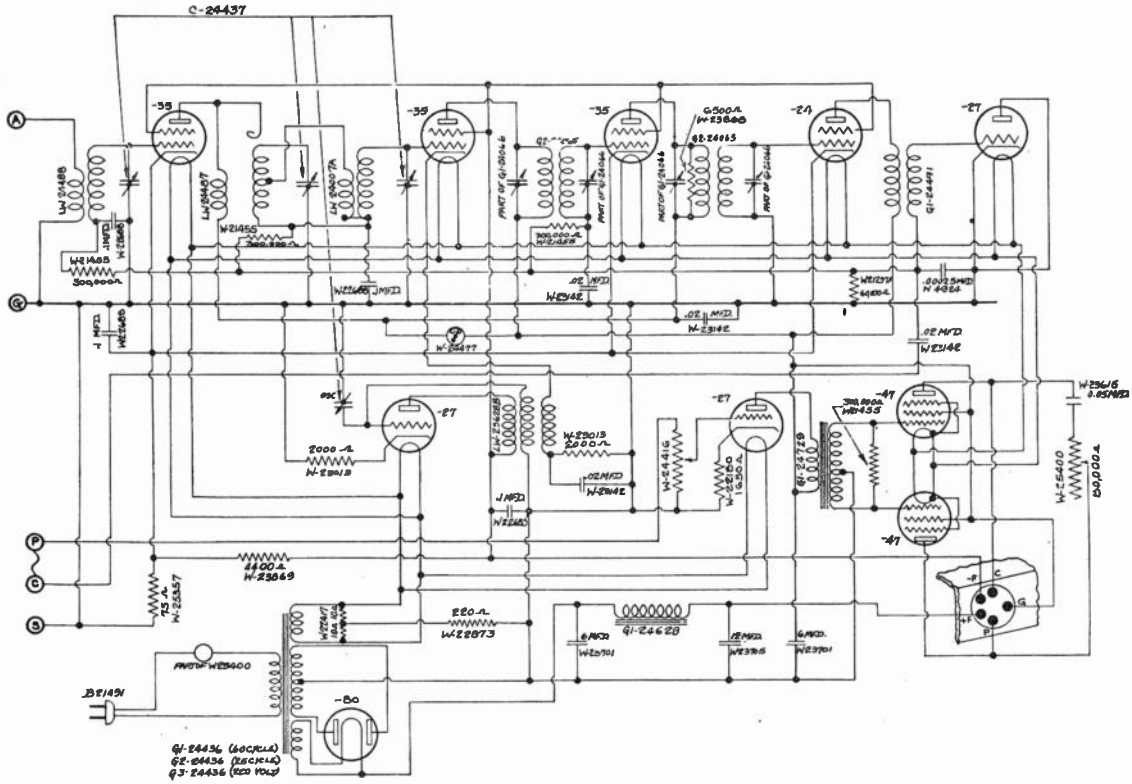
Circuit Diagram, Model 126-1



Circuit Diagram, Model 127.

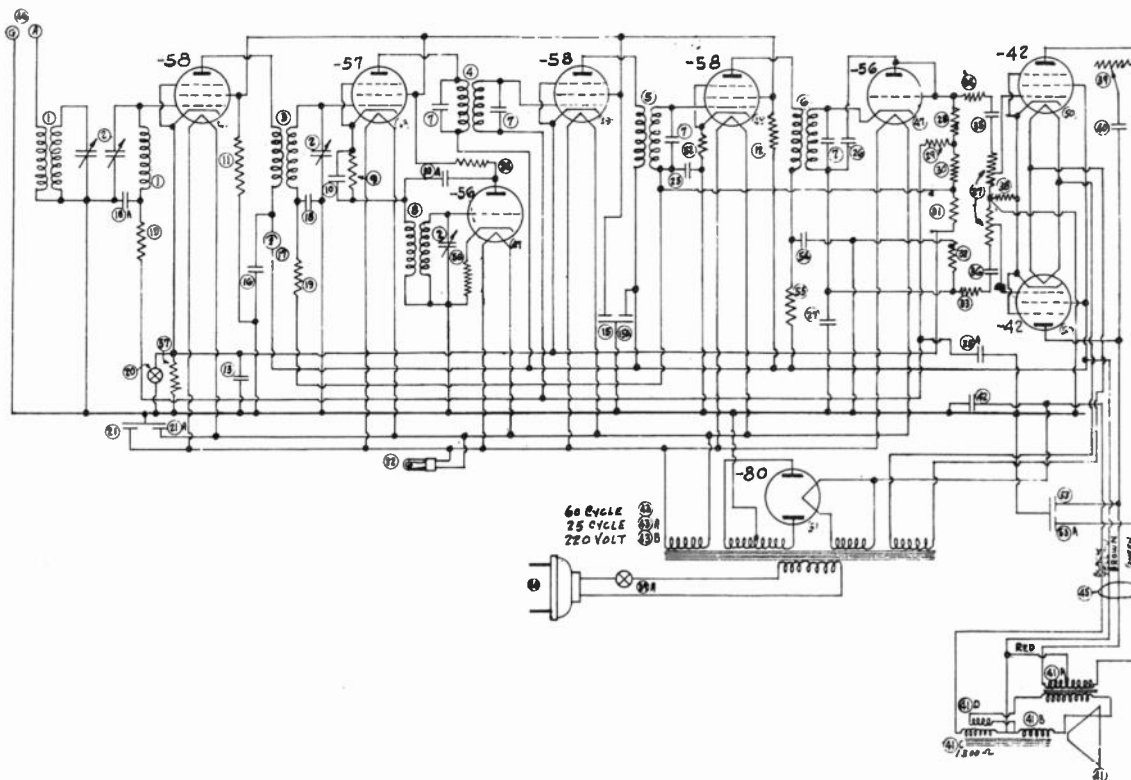
MODELS 127-1 & 128

Model 127-1



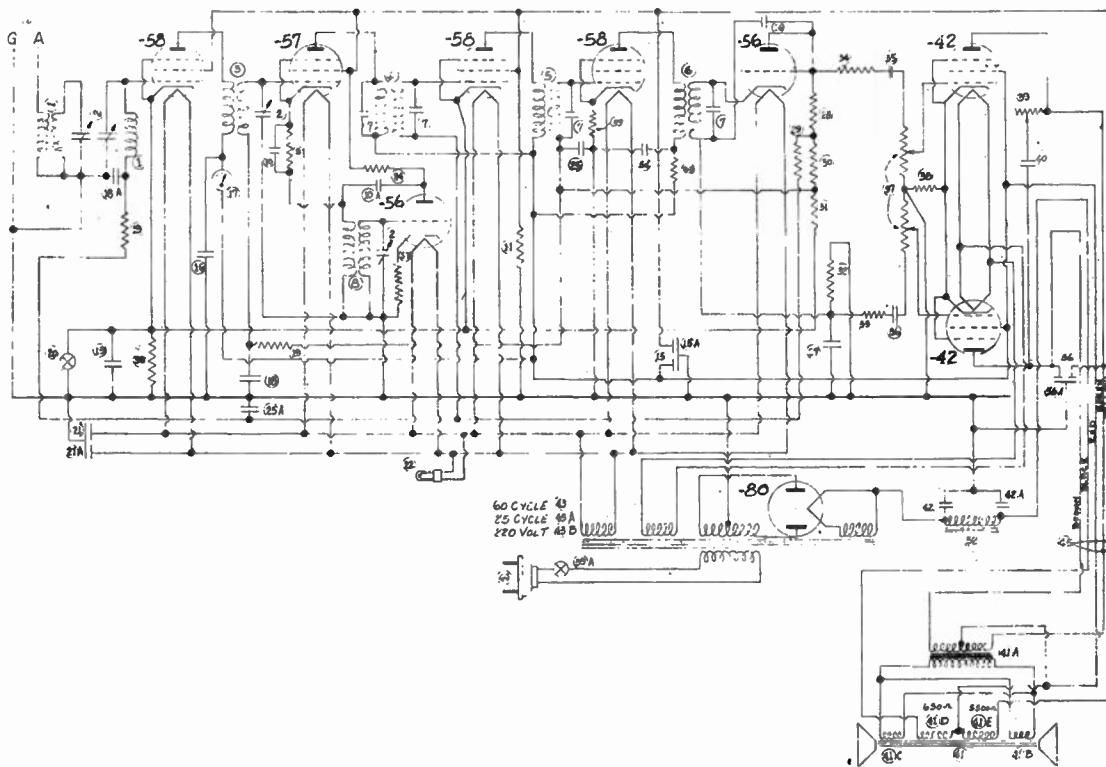
Circuit Diagram, Model 128





PARTS LIST - MODEL 130

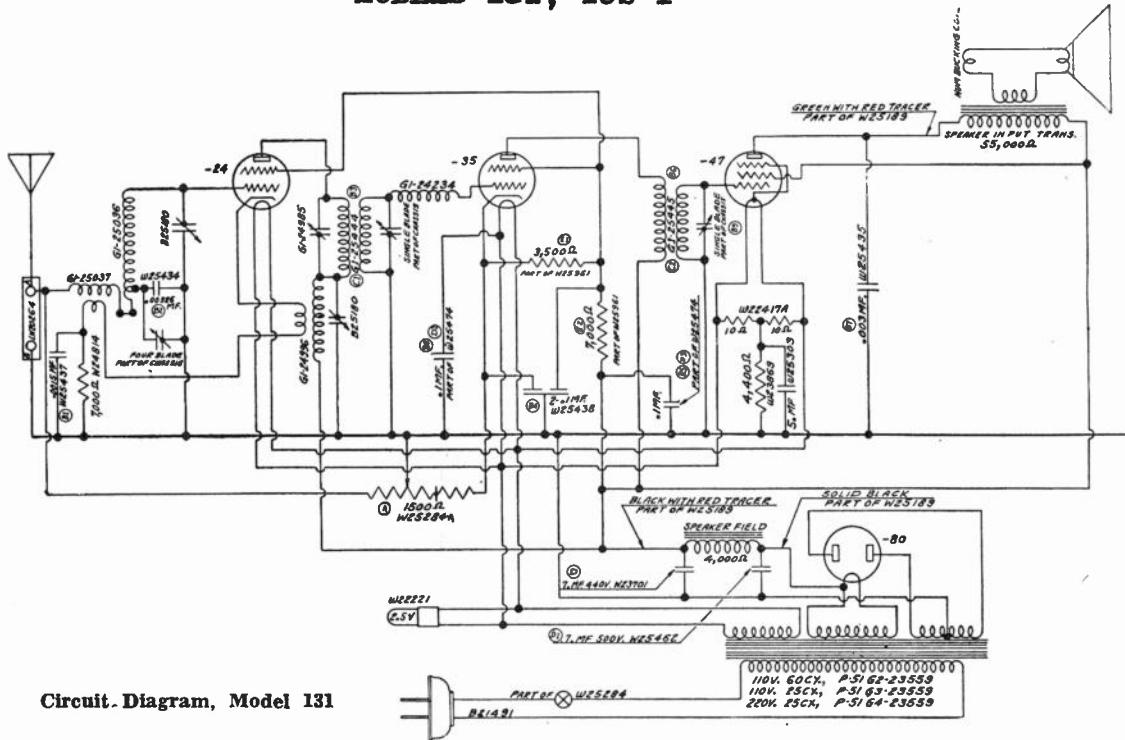
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1-25967	Pre-Selector Coil	28	W-21455	300,000 ohms Res.
2	C-26112	Tuning Cond.	29	W-22215	3 megohm Res.
3	G1-25968	R.F. Trans.	30	W-21875	100,000 ohms Res.
4	G8-24065	I.F. Trans.	31	W-21453	40,000 ohms Res.
5	G1-25449	I.F. Trans.	32-33-34	W-23785	500,000 ohms Res.
6	G2-25449	Diode Trans.	35-36	W-25435	.003 mfd. Conds.
7	G4-25948	I.F. Tuning Cond.	37	W-25367	3 megohm Level Cont.
8	G1-24996	Osc. Coil	38	W-26049	450 ohms Res.
9	W-21876	10,000 ohms Res.	39-39A	W-25400	80,000 ohms Tone Cont. & Switch
10-10A	W-25538	.0015 mfd. Conds.	40	W023615	.05 mfd. Cond.
11-12	W-25970	15,000-10,000 ohms Res.	41	LC-26014	309-4 Speaker
13	W-24049	.1 mfd. Cond.	41A		Speaker Trans.
15-15A	W-26119	8-4 mfd. Cond.	41C		Speaker Field 1300 ohms
16	W-22688	.1 mfd. Cond.	41D		Hum Buck Coil
17	W-26091	Tuning Meter	42	W-25462	7 mfd. Cond.
18-18A	W-25438	.1 mfd. Cond.	43	G2-25534	60 Cycle Power Trans.
19	W-21455	300,000 ohms Res.	46	G1-23841	Ant. Gnd. Term.
20	W-26156	S.P.S.T. Switch	52	W-23012-A	40 ohms Res.
21-21A	W-25438	.1 mfd. Cond.	53-53A	W-25538	.0015 mfd. Conds.
24	W-21876	10,000 ohms Res.	54	W-23615	.05 mfd. Cond.
25-25A	W-25438	.1 mfd. Conds.	55	W-22514	750 ohms Res.
26	W-26152-A	.0001 mfd. Cond.	56	W-25937	275 ohms Res.
27	W-26152	.00015 mfd. Cond.	57	W-24097	350 ohms Res.



PARTS LIST - MODEL 130-1

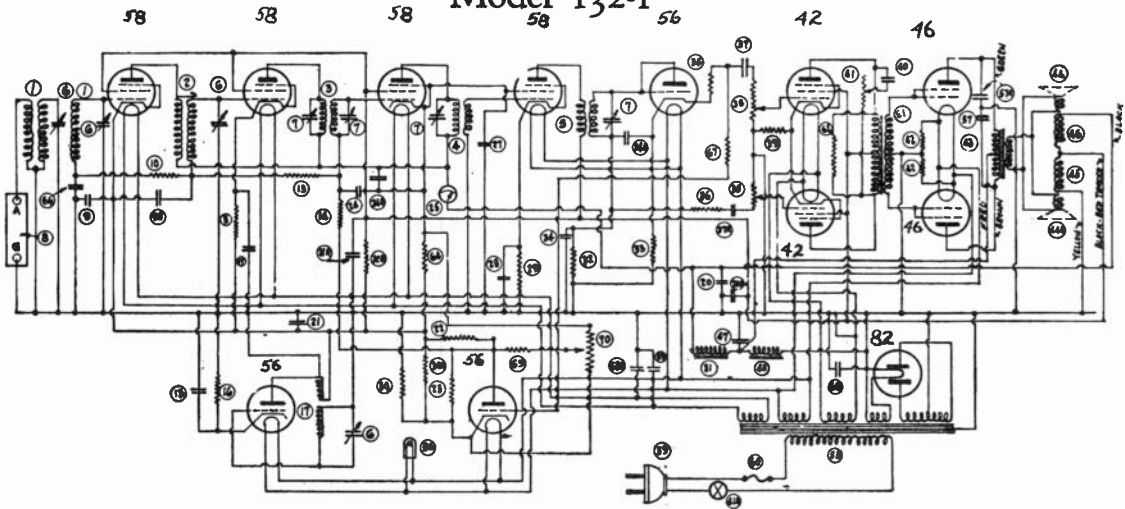
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1-25967	Pre-Selector Coil	29	W-22215	3 megohm Res.
2	C-26112	Tuning Cond.	30	W-21875	100,000 ohms Res.
3	G1-25968	R.F. Trans.	31	W-21453	40,000 ohms Res.
4	G8-24065	I.F. Trans.	32-33-34	W-23785	500,000 ohms Res.
5	G1-25449	I.F. Trans.	35-36	W-25435	.003 mfd. Conds.
6	G2-25449	Diode Trans.	37	W-25367	3 megohm Res. Level Cont.
7	G4-25948	I.F. Tuning Cond.	38	W-26049	450 ohms Res.
8	G1-24996	Osc. Coil	39-39A	W-25400	80,000 ohms Tone Cont. & Switch
9	W-21876	10,000 ohms Res.	40	W-23615	.05 mfd. Cond.
10-10A	W-25538	.0015 mfd. Conds.	41	L-26104 & L-26105	320-4 & 326-4 Speakers
11	W-26493	4400 ohms Res.	41A		Speaker Trans.
13	W-24049	.1 mfd. Cond.	41D		Speaker Field 650 ohms
15-15A	W-26119	8-4 mfd. Conds.	41E		Speaker Field 5500 ohms
16	W-22688	.1 mfd. Cond.	42-42A	W-26118	8 mfd. Conds.
17	W-26091	Tuning Meter	43	G10-25669	60 Cycle Power Trans.
18-18A	W-25438	.1 mfd. Conds.	46	G1-23841	Ant. Gnd. Term.
19	W-21455	300,000 ohms Res.	52	G1-24628	Filter Choke
20	W-26156	S.P.S.T. Switch	53	W-22514	750 ohms Res.
21-21A	W-25438	.1 mfd. Conds.	54	W-23615	.05 mfd. Cond.
24	W-21876	10,000 ohms Res.	55	W-23012	40 ohms Res.
25-25A	W-25438	.1 mfd. Conds.	56-56A	W-25538	.0015 mfd. Conds.
26	W-26152-A	.0001 mfd. Cond.	57	W-25937	275 ohms Res.
27	W-26152	.0015 mfd. Cond.	58	W-24097	350 ohms Res.
28	W-81455	300,000 ohms Res.			

# MODELS 131, 132-1



Circuit Diagram, Model 131

## Model 132-1



Part No.	Description	Value	Part No.	Description	Value	Part No.	Description	Value
1	6X4	6X4	24	1MFD COND. 50V	50	44	MODEL	SPEAKER
2	6AR5	6AR5	25	1MFD COND. 50V	50	45	MODEL	SPEAKER FIELD
3	6AV6	6AV6	26	1MFD COND. 50V	50	46	MODEL	SPEAKER FIELD
4	6BE6	6BE6	27	1MFD COND. 50V	50	47	MODEL	SPEAKER
5	6BE7	6BE7	28	1MFD COND. 50V	50	48	MODEL	CHOKER
6	6BE9	6BE9	29	1MFD COND. 50V	50	49	MODEL	CHOKER
7	6BE9A	6BE9A	30	1MFD COND. 50V	50	50	MODEL	CHOKER
8	6BE9B	6BE9B	31	1MFD COND. 50V	50	51	MODEL	CHOKER
9	6BE9C	6BE9C	32	1MFD COND. 50V	50	52	MODEL	CHOKER
10	6BE9D	6BE9D	33	1MFD COND. 50V	50	53	MODEL	CHOKER
11	6BE9E	6BE9E	34	1MFD COND. 50V	50	54	MODEL	CHOKER
12	6BE9F	6BE9F	35	1MFD COND. 50V	50	55	MODEL	CHOKER
13	6BE9G	6BE9G	36	1MFD COND. 50V	50	56	MODEL	CHOKER
14	6BE9H	6BE9H	37	1MFD COND. 50V	50	57	MODEL	CHOKER
15	6BE9I	6BE9I	38	1MFD COND. 50V	50	58	MODEL	CHOKER
16	6BE9J	6BE9J	39	1MFD COND. 50V	50	59	MODEL	CHOKER
17	6BE9K	6BE9K	40	1MFD COND. 50V	50	60	MODEL	CHOKER
18	6BE9L	6BE9L	41	1MFD COND. 50V	50	61	MODEL	CHOKER
19	6BE9M	6BE9M	42	1MFD COND. 50V	50	62	MODEL	CHOKER
20	6BE9N	6BE9N	43	1MFD COND. 50V	50	63	MODEL	CHOKER
21	6BE9O	6BE9O	44	1MFD COND. 50V	50	64	MODEL	CHOKER
22	6BE9P	6BE9P	45	1MFD COND. 50V	50	65	MODEL	CHOKER
23	6BE9Q	6BE9Q	46	1MFD COND. 50V	50	66	MODEL	CHOKER
24	6BE9R	6BE9R	47	1MFD COND. 50V	50	67	MODEL	CHOKER

### Plate Voltages

R. F., First Detector, and First I. F. tubes	180 to 220
Oscillator tube	150 to 190
Second I. F. tube	200 to 240
A. V. C. tube	60 to 80
A. F. Amplifier tubes	190 to 230
Output tubes	380 to 430
Rectifier tube	390 to 440

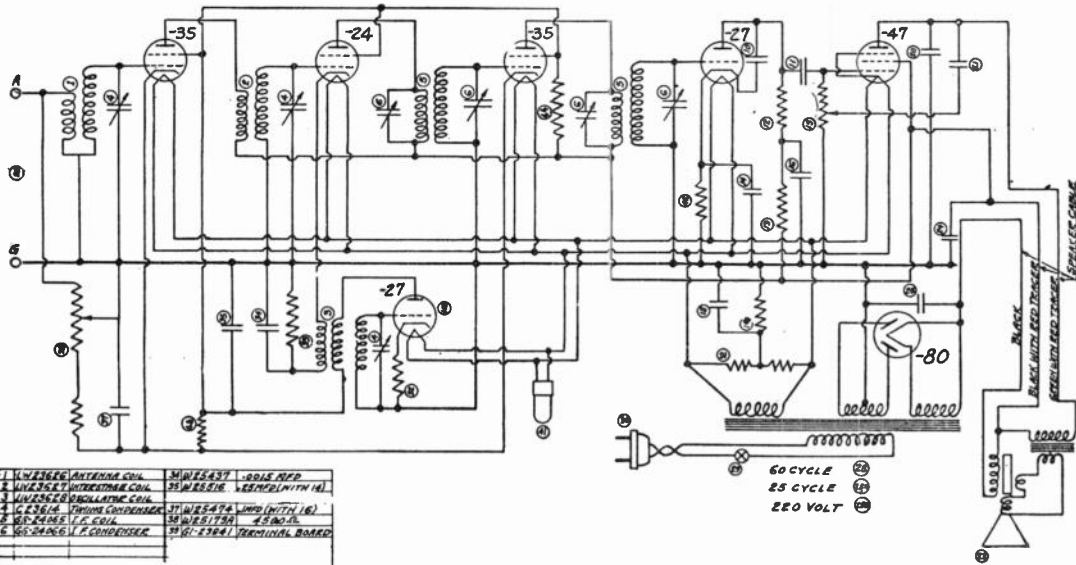
### Screen Grid Voltages

R. F., First Detector, and First I. F. tubes	50 to 70
Second I. F. tube	150 to 180
A. F. tubes	200 to 240

### Bias Voltages

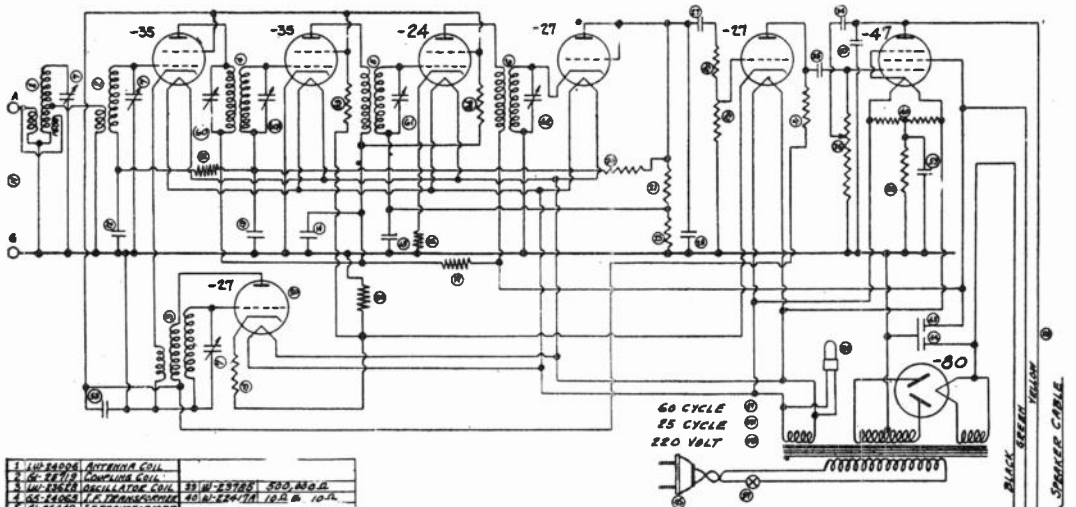
R. F. and First I. F. Tubes (cathode to grid)	.4 to .6
First Detector tube (cathode to grid)	2 to 3
Oscillator (cathode to chassis)	12 to 15
Second I. F. tube	7 to 9
A. V. C. tube (cathode to chassis)	70 to 85
Output tubes (cathode to chassis)	26 to 32
A. F. Amplifier tubes (cathode to chassis)	20 to 27

# MODELS 133, 134



1. W-2526G ANTENNA COIL	31 W-2527	1000 MFD
2. W-2527B INTERMEDIATE COIL	32 W-2528	250,000 Ω
3. W-2528C OSCILLATOR COIL	33 W-2529	100,000 Ω
4. W-2529C I.F. TRANSFORMER	34 W-2530	100,000 Ω
5. W-2530C I.F. TRANSFORMER	35 W-2531	100,000 Ω
6. W-2531C I.F. TRANSFORMER	36 W-2532	100,000 Ω
7. W-2532C I.F. TRANSFORMER	37 W-2533	100,000 Ω
8. W-2533C I.F. TRANSFORMER	38 W-2534	100,000 Ω
9. W-2534C I.F. TRANSFORMER	39 W-2535	100,000 Ω
10. W-2535C I.F. TRANSFORMER	40 W-2536	100,000 Ω
11. W-2536C I.F. TRANSFORMER	41 W-2537	100,000 Ω
12. W-2537C I.F. TRANSFORMER	42 W-2538	100,000 Ω
13. W-2538C I.F. TRANSFORMER	43 W-2539	100,000 Ω
14. W-2539C I.F. TRANSFORMER	44 W-2540	100,000 Ω
15. W-2540C I.F. TRANSFORMER	45 W-2541	100,000 Ω
16. W-2541C I.F. TRANSFORMER	46 W-2542	100,000 Ω
17. W-2542C I.F. TRANSFORMER	47 W-2543	100,000 Ω
18. W-2543C I.F. TRANSFORMER	48 W-2544	100,000 Ω
19. W-2544C I.F. TRANSFORMER	49 W-2545	100,000 Ω
20. W-2545C I.F. TRANSFORMER	50 W-2546	100,000 Ω
21. W-2546C I.F. TRANSFORMER	51 W-2547	100,000 Ω
22. W-2547C I.F. TRANSFORMER	52 W-2548	100,000 Ω
23. W-2548C I.F. TRANSFORMER	53 W-2549	100,000 Ω
24. W-2549C I.F. TRANSFORMER	54 W-2550	100,000 Ω
25. W-2550C I.F. TRANSFORMER	55 W-2551	100,000 Ω
26. W-2551C I.F. TRANSFORMER	56 W-2552	100,000 Ω
27. W-2552C I.F. TRANSFORMER	57 W-2553	100,000 Ω
28. W-2553C I.F. TRANSFORMER	58 W-2554	100,000 Ω
29. W-2554C I.F. TRANSFORMER	59 W-2555	100,000 Ω
30. W-2555C I.F. TRANSFORMER	60 W-2556	100,000 Ω
31. W-2556C I.F. TRANSFORMER	61 W-2557	100,000 Ω
32. W-2557C I.F. TRANSFORMER	62 W-2558	100,000 Ω
33. W-2558C I.F. TRANSFORMER	63 W-2559	100,000 Ω
34. W-2559C I.F. TRANSFORMER	64 W-2560	100,000 Ω
35. W-2560C I.F. TRANSFORMER	65 W-2561	100,000 Ω
36. W-2561C I.F. TRANSFORMER	66 W-2562	100,000 Ω
37. W-2562C I.F. TRANSFORMER	67 W-2563	100,000 Ω
38. W-2563C I.F. TRANSFORMER	68 W-2564	100,000 Ω
39. W-2564C I.F. TRANSFORMER	69 W-2565	100,000 Ω
40. W-2565C I.F. TRANSFORMER	70 W-2566	100,000 Ω
41. W-2566C I.F. TRANSFORMER	71 W-2567	100,000 Ω
42. W-2567C I.F. TRANSFORMER	72 W-2568	100,000 Ω
43. W-2568C I.F. TRANSFORMER	73 W-2569	100,000 Ω
44. W-2569C I.F. TRANSFORMER	74 W-2570	100,000 Ω
45. W-2570C I.F. TRANSFORMER	75 W-2571	100,000 Ω
46. W-2571C I.F. TRANSFORMER	76 W-2572	100,000 Ω
47. W-2572C I.F. TRANSFORMER	77 W-2573	100,000 Ω
48. W-2573C I.F. TRANSFORMER	78 W-2574	100,000 Ω
49. W-2574C I.F. TRANSFORMER	79 W-2575	100,000 Ω
50. W-2575C I.F. TRANSFORMER	80 W-2576	100,000 Ω
51. W-2576C I.F. TRANSFORMER	81 W-2577	100,000 Ω
52. W-2577C I.F. TRANSFORMER	82 W-2578	100,000 Ω
53. W-2578C I.F. TRANSFORMER	83 W-2579	100,000 Ω
54. W-2579C I.F. TRANSFORMER	84 W-2580	100,000 Ω
55. W-2580C I.F. TRANSFORMER	85 W-2581	100,000 Ω
56. W-2581C I.F. TRANSFORMER	86 W-2582	100,000 Ω
57. W-2582C I.F. TRANSFORMER	87 W-2583	100,000 Ω
58. W-2583C I.F. TRANSFORMER	88 W-2584	100,000 Ω
59. W-2584C I.F. TRANSFORMER	89 W-2585	100,000 Ω
60. W-2585C I.F. TRANSFORMER	90 W-2586	100,000 Ω
61. W-2586C I.F. TRANSFORMER	91 W-2587	100,000 Ω
62. W-2587C I.F. TRANSFORMER	92 W-2588	100,000 Ω
63. W-2588C I.F. TRANSFORMER	93 W-2589	100,000 Ω
64. W-2589C I.F. TRANSFORMER	94 W-2590	100,000 Ω
65. W-2590C I.F. TRANSFORMER	95 W-2591	100,000 Ω
66. W-2591C I.F. TRANSFORMER	96 W-2592	100,000 Ω
67. W-2592C I.F. TRANSFORMER	97 W-2593	100,000 Ω
68. W-2593C I.F. TRANSFORMER	98 W-2594	100,000 Ω
69. W-2594C I.F. TRANSFORMER	99 W-2595	100,000 Ω
70. W-2595C I.F. TRANSFORMER	100 W-2596	100,000 Ω

Circuit Diagram, Model 133



1. W-2400G ANTENNA COIL	31 W-2401	1000 MFD
2. W-2401G INTERMEDIATE COIL	32 W-2402	250,000 Ω
3. W-2402G OSCILLATOR COIL	33 W-2403	100,000 Ω
4. W-2403G I.F. TRANSFORMER	34 W-2404	100,000 Ω
5. W-2404G I.F. TRANSFORMER	35 W-2405	100,000 Ω
6. W-2405G I.F. TRANSFORMER	36 W-2406	100,000 Ω
7. W-2406G I.F. TRANSFORMER	37 W-2407	100,000 Ω
8. W-2407G I.F. TRANSFORMER	38 W-2408	100,000 Ω
9. W-2408G I.F. TRANSFORMER	39 W-2409	100,000 Ω
10. W-2409G I.F. TRANSFORMER	40 W-2410	100,000 Ω
11. W-2410G I.F. TRANSFORMER	41 W-2411	100,000 Ω
12. W-2411G I.F. TRANSFORMER	42 W-2412	100,000 Ω
13. W-2412G I.F. TRANSFORMER	43 W-2413	100,000 Ω
14. W-2413G I.F. TRANSFORMER	44 W-2414	100,000 Ω
15. W-2414G I.F. TRANSFORMER	45 W-2415	100,000 Ω
16. W-2415G I.F. TRANSFORMER	46 W-2416	100,000 Ω
17. W-2416G I.F. TRANSFORMER	47 W-2417	100,000 Ω
18. W-2417G I.F. TRANSFORMER	48 W-2418	100,000 Ω
19. W-2418G I.F. TRANSFORMER	49 W-2419	100,000 Ω
20. W-2419G I.F. TRANSFORMER	50 W-2420	100,000 Ω
21. W-2420G I.F. TRANSFORMER	51 W-2421	100,000 Ω
22. W-2421G I.F. TRANSFORMER	52 W-2422	100,000 Ω
23. W-2422G I.F. TRANSFORMER	53 W-2423	100,000 Ω
24. W-2423G I.F. TRANSFORMER	54 W-2424	100,000 Ω
25. W-2424G I.F. TRANSFORMER	55 W-2425	100,000 Ω
26. W-2425G I.F. TRANSFORMER	56 W-2426	100,000 Ω
27. W-2426G I.F. TRANSFORMER	57 W-2427	100,000 Ω
28. W-2427G I.F. TRANSFORMER	58 W-2428	100,000 Ω
29. W-2428G I.F. TRANSFORMER	59 W-2429	100,000 Ω
30. W-2429G I.F. TRANSFORMER	60 W-2430	100,000 Ω
31. W-2430G I.F. TRANSFORMER	61 W-2431	100,000 Ω
32. W-2431G I.F. TRANSFORMER	62 W-2432	100,000 Ω
33. W-2432G I.F. TRANSFORMER	63 W-2433	100,000 Ω
34. W-2433G I.F. TRANSFORMER	64 W-2434	100,000 Ω
35. W-2434G I.F. TRANSFORMER	65 W-2435	100,000 Ω
36. W-2435G I.F. TRANSFORMER	66 W-2436	100,000 Ω
37. W-2436G I.F. TRANSFORMER	67 W-2437	100,000 Ω
38. W-2437G I.F. TRANSFORMER	68 W-2438	100,000 Ω
39. W-2438G I.F. TRANSFORMER	69 W-2439	100,000 Ω
40. W-2439G I.F. TRANSFORMER	70 W-2440	100,000 Ω
41. W-2440G I.F. TRANSFORMER	71 W-2441	100,000 Ω
42. W-2441G I.F. TRANSFORMER	72 W-2442	100,000 Ω
43. W-2442G I.F. TRANSFORMER	73 W-2443	100,000 Ω
44. W-2443G I.F. TRANSFORMER	74 W-2444	100,000 Ω
45. W-2444G I.F. TRANSFORMER	75 W-2445	100,000 Ω
46. W-2445G I.F. TRANSFORMER	76 W-2446	100,000 Ω
47. W-2446G I.F. TRANSFORMER	77 W-2447	100,000 Ω
48. W-2447G I.F. TRANSFORMER	78 W-2448	100,000 Ω
49. W-2448G I.F. TRANSFORMER	79 W-2449	100,000 Ω
50. W-2449G I.F. TRANSFORMER	80 W-2450	100,000 Ω
51. W-2450G I.F. TRANSFORMER	81 W-2451	100,000 Ω
52. W-2451G I.F. TRANSFORMER	82 W-2452	100,000 Ω
53. W-2452G I.F. TRANSFORMER	83 W-2453	100,000 Ω
54. W-2453G I.F. TRANSFORMER	84 W-2454	100,000 Ω
55. W-2454G I.F. TRANSFORMER	85 W-2455	100,000 Ω
56. W-2455G I.F. TRANSFORMER	86 W-2456	100,000 Ω
57. W-2456G I.F. TRANSFORMER	87 W-2457	100,000 Ω
58. W-2457G I.F. TRANSFORMER	88 W-2458	100,000 Ω
59. W-2458G I.F. TRANSFORMER	89 W-2459	100,000 Ω
60. W-2459G I.F. TRANSFORMER	90 W-2460	100,000 Ω
61. W-2460G I.F. TRANSFORMER	91 W-2461	100,000 Ω
62. W-2461G I.F. TRANSFORMER	92 W-2462	100,000 Ω
63. W-2462G I.F. TRANSFORMER	93 W-2463	100,000 Ω
64. W-2463G I.F. TRANSFORMER	94 W-2464	100,000 Ω
65. W-2464G I.F. TRANSFORMER	95 W-2465	100,000 Ω
66. W-2465G I.F. TRANSFORMER	96 W-2466	100,000 Ω
67. W-2466G I.F. TRANSFORMER	97 W-2467	100,000 Ω
68. W-2467G I.F. TRANSFORMER	98 W-2468	100,000 Ω
69. W-2468G I.F. TRANSFORMER	99 W-2469	100,000 Ω
70. W-2469G I.F. TRANSFORMER	100 W-2470	100,000 Ω

**Plate Voltages**

First Detector and I. F. Amplifier tubes	260 to 310
Oscillator tube	77 to 93
First A. F. tube	50 to 60
Output tube	240 to 290
Rectifier tube	350 to 410

**Screen Grid Voltages**

First Detector and I. F. Amplifier tubes	77 to 93
Output tube	260 to 310

Circuit Diagram, Model 134





# Model 136-1

## Specifications

Model 136-1 is a ten tube superheterodyne for operation from A. C. electric circuits. Five sets of coils give the following frequency ranges: 550 to 1500 KC, 1500 to 3500 KC, 3500 to 6500 KC, 6500 to 12000 KC, and 12000 to 20000 KC. The intermediate frequency used is 456 KC.

## Tubes And Voltage Limits

The following are the voltages measured with the receiver in operating condition but with no signal to the antenna circuit. Use a high resistance D. C. volt-

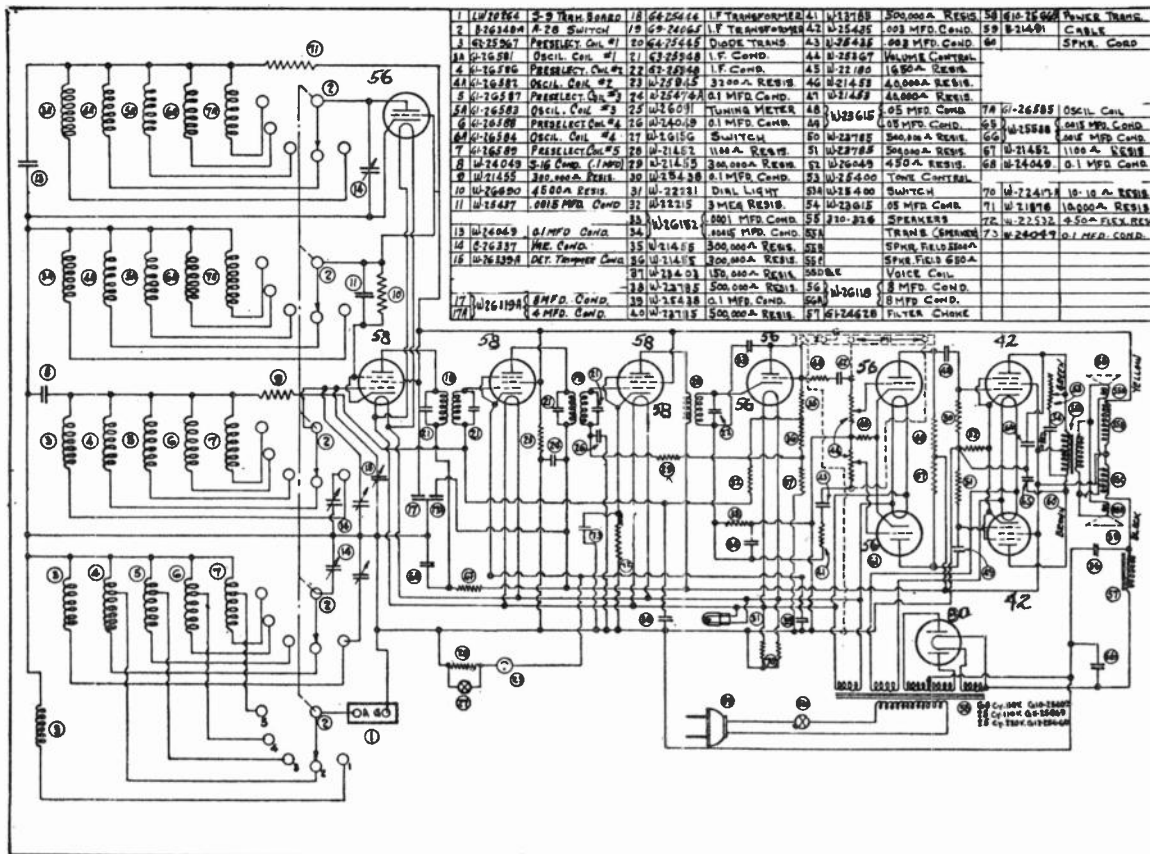
meter (1000 ohms per volt, or more) for all but filament voltages. In measuring filament or heater voltages use a low range A. C. meter. The voltage limits are + or - 10% of values given in the following table.

Line voltage—117.5 volts (235 for 220 volt receivers).  
Plate voltage measured from plate contact to cathode contact.

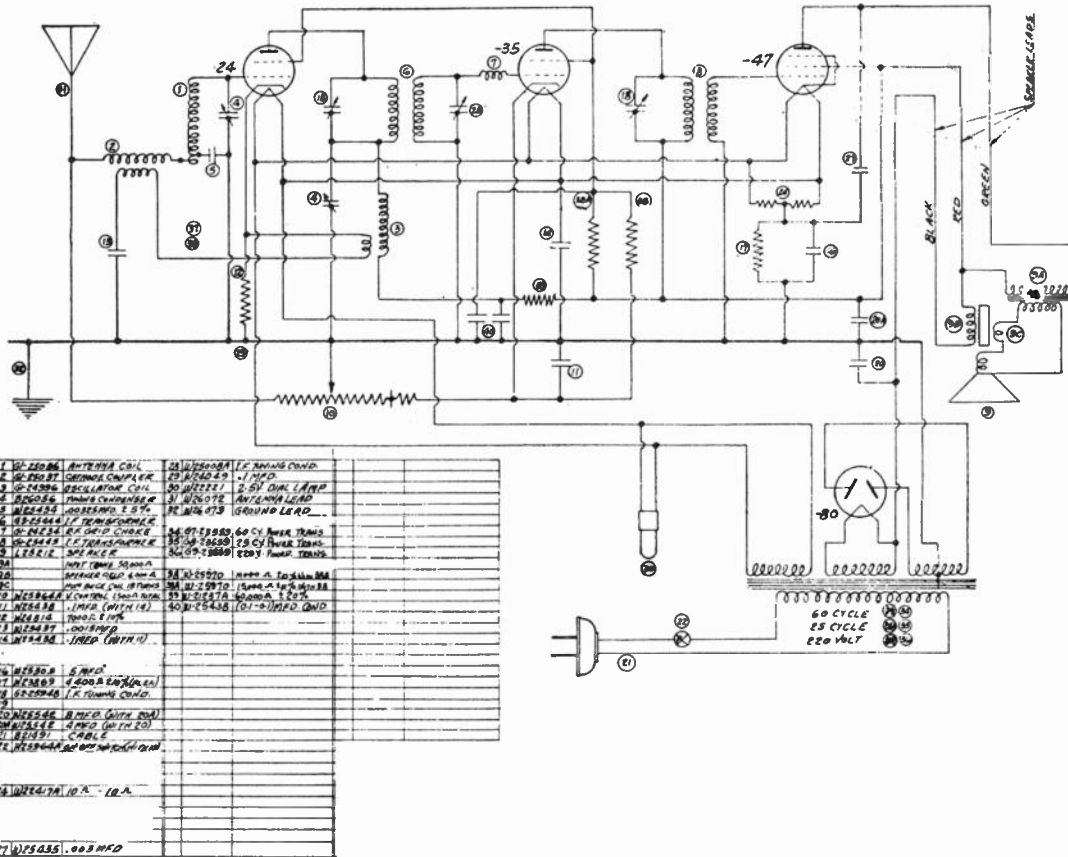
Suppressor grid voltage measured from suppressor grid contact to cathode contact.

Bias voltage measured from cathode contact to chassis.

Tube	Position	Voltages				
		Plate	Screen Grid	Supp. Grid	Bias	Fil
-56	Oscillator	45			0	2.5
-58	1st Detector	275	100	0	10.0	2.5
-58	1st I. F. Amplifier	275	100	0	2.5	2.5
-58	2nd I. F. Amplifier	275	100	0	4.0	2.5
-56	Diode Detector	0			0	2.5
-56	Push Pull A. F. Amplifier	135		0	7.0	2.5
-56	Push Pull A. F. Amplifier	135		0	7.0	2.5
-42	Output	270	275		20.0	6.3
-42	Output	270	275		20.0	6.3
-80	Rectifier	370				4.8



# Model 137



## Specifications

Model 137 is a four-tube superheterodyne for operation from A.C. electric circuits. The tubes employed are as follows: a -24 type oscillating first detector, a -35 or -51 type I.F. amplifier, a -47 type second detector and output tube, and an -80 type rectifier.

## Voltage Limits

The following are the approximate voltages which should be measured with the tubes in place, speaker connected, and a line voltage of 117½ (235 for 220 volt receivers). Measure plate and screen grid voltages with a high-resistance D.C. voltmeter (1000 ohms per volt) from plate or screen grid tube contact to emitter contact. Measure bias voltages from

cathode to chassis. Use a low-range A.C. voltmeter for filament or heater voltages.

### Heater Or Filament Voltages

All tubes but Rectifier .....	2.2 to 2.6
Rectifier tube .....	4.4 to 5.2

### Plate Voltages

First Detector and I. F. tubes .....	220 to 260
Second Detector tube .....	210 to 250
Rectifier tube .....	360 to 430

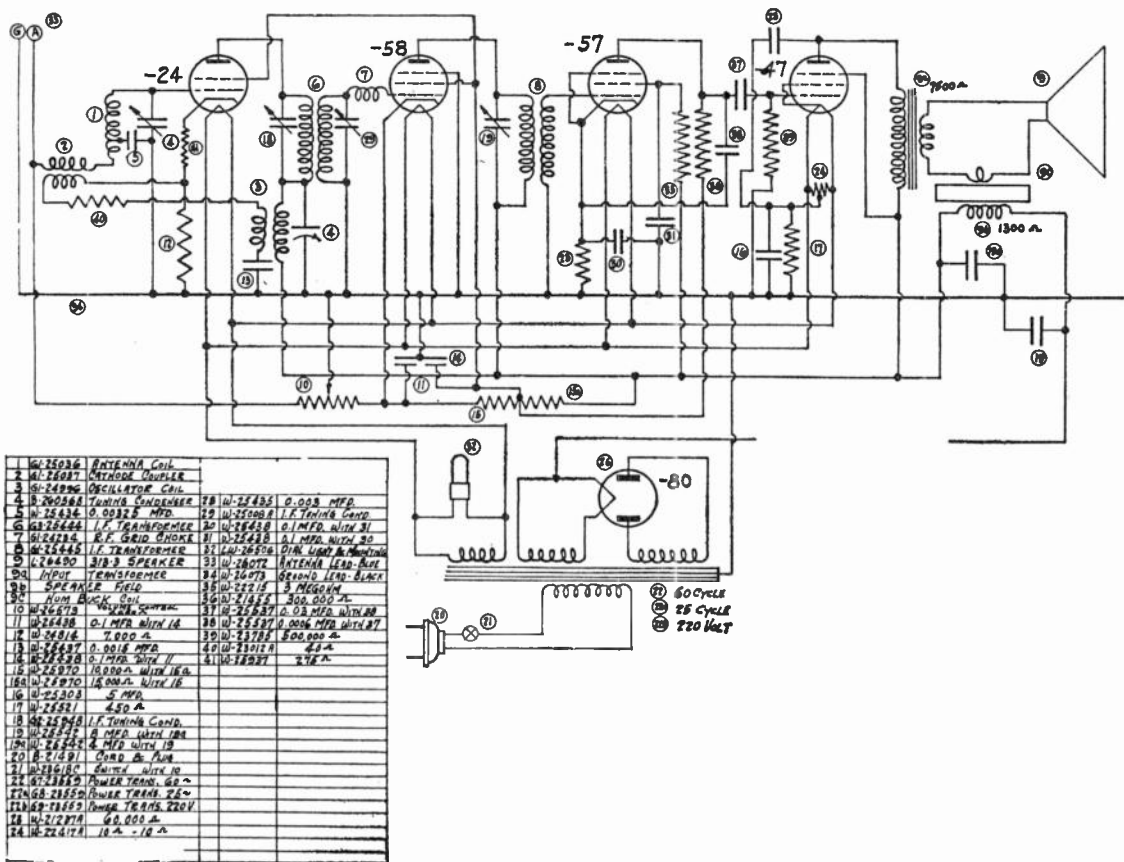
### Screen Grid Voltages

First Detector and I. F. tubes .....	90 to 110
Second Detector tube .....	220 to 260

### Bias Voltages

First Detector tube .....	8 to 10
I. F. tube .....	2.7 to 3.3
Second Detector tube (with no signal) .....	25 to 30

# Model 141



## Specifications

Model 141 is a five-tube superheterodyne for operation from A.C. electric circuits. It employs the following tubes: a -24 type oscillating first detector, a -58 type I.F. amplifier, a -57 type second detector, a -47 type output tube, and a -80 type rectifier.

## Voltage Limits

The following are the approximate voltages which should be measured with the tubes in place, speaker connected, and a line voltage of 117½ (235 for 220 volt receivers), Measure plate and screw grid voltages with a high-resistance D.C. voltmeter (1000 ohms per volt) from plate or screen grid tube contact to emitter contact. Measure bias voltages from

cathode to chassis. Use a low-range A.C. voltmeter for filament or heater voltages.

Heater Or Filament Voltages	
All tubes but Rectifier .....	2.2 to 2.8
Rectifier tube .....	4.3 to 5.3
Plate Voltages	
First Detector and I. F. tubes .....	230 to 270
Second Detector tube .....	30 to 50
Output tube .....	230 to 260
Rectifier tube .....	340 to 380
Screen Grid Voltages	
First Detector and I. F. tubes .....	90 to 110
Second Detector tube .....	30 to 50
Output tube .....	235 to 265
Bias Voltages	
First Detector tube .....	9 to 10
I. F. tube .....	3.1 to 3.9
Second Detector tube .....	9 to 12
Output tube .....	16 to 21

# Model 143

## Specifications

Model 143 is an eight tube superheterodyne designed for operation from a 2 volt "A" battery; 135 volts of "B" battery and 22½ volts of "C" battery. The intermediate frequency is 181.5 Kc.

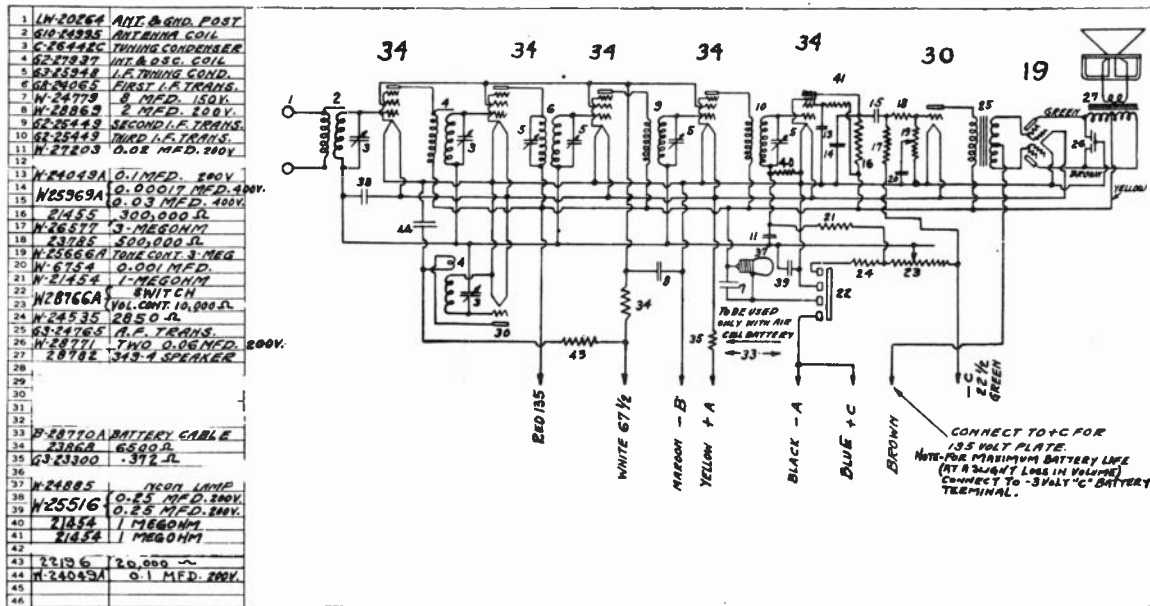
## Tubes and Voltage Limits

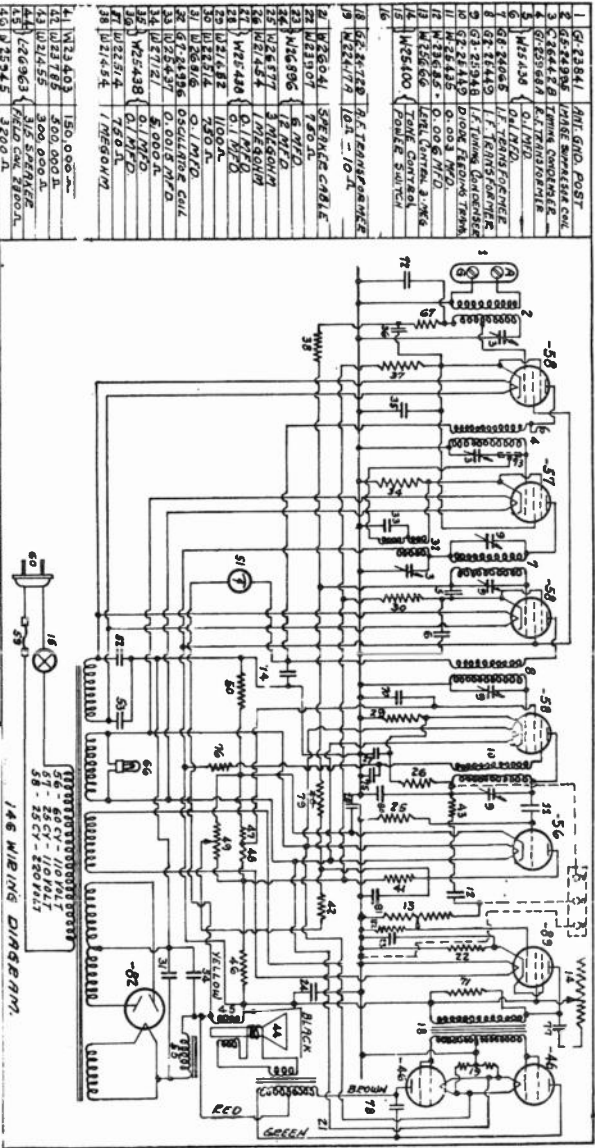
The tubes and voltages are given in the following table. All voltages, except bias, are measured with a 250 volt D.C. voltmeter (1000 ohms per volt, from "B-" to tube contact; with the receiver in operating condition, but no signal to the antenna circuit. Bias voltages are measured from negative filament to grid.

Tube	Position	Plate	Screen Grid	Bias	Filament
34	R. F. Amplifier	135	50	4	2.0
30	Oscillator	15		0	2.0
34	Modulator	135	50	4	2.0
34	I. F. Amplifier	135	50	4	2.0
34	I. F. Amplifier	135	50	4	2.0
34	Detector	80	20	0.5	2.0
30	A. F. Amplifier	135		1.5	2.0
19	Output	135		0	2.0

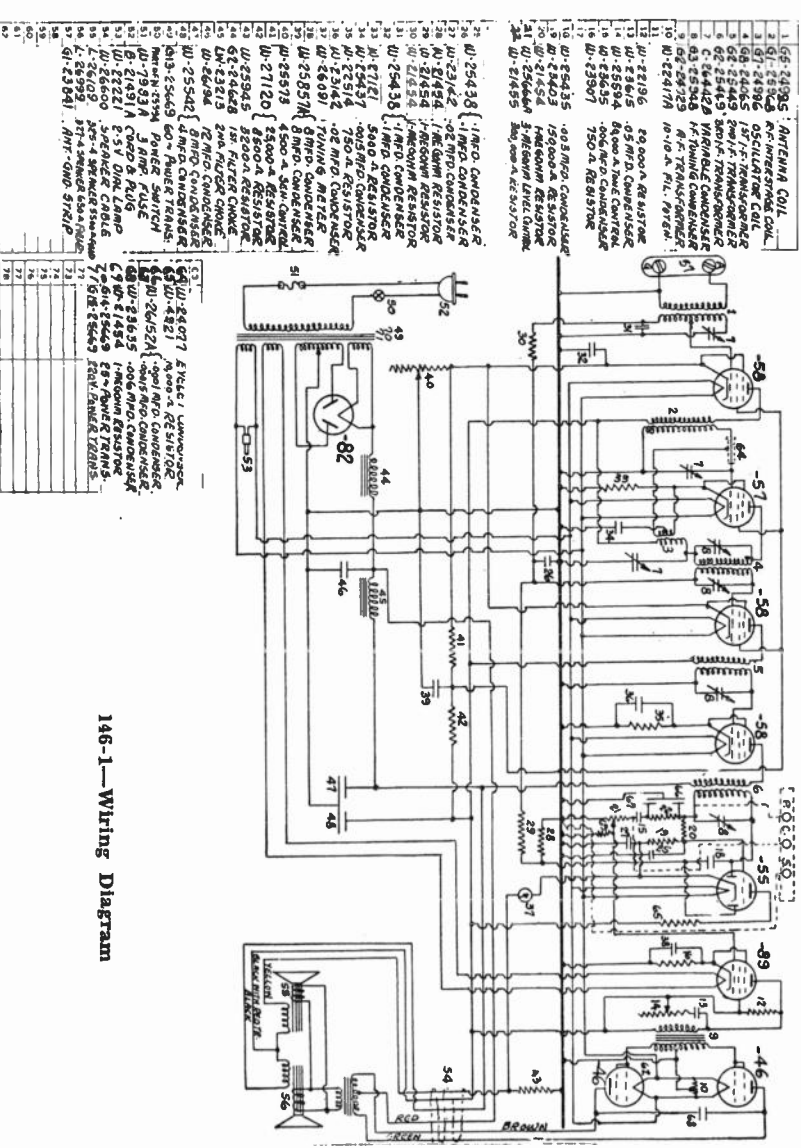
Voltage limits are plus or minus 10% of values given.

Voltages between "B-" and chassis is 4 volts, used for R. F., I. F., and modulator bias.





11	W-33403	150 000 Ω	19	W-31434	1 MEG OHM
12	W-33782	500 000 Ω	20	W-35572	0.005 MFD
13	W-32455	300 000 Ω	21	W-31453	0.005 MFD
14	W-32963	450 000 Ω	22	W-31454	1 MEG OHM
15	W-32963	450 000 Ω	23	W-31455	1 MEG OHM
16	W-32963	450 000 Ω	24	W-31456	1 MEG OHM
17	W-32963	450 000 Ω	25	W-31457	1 MEG OHM
18	W-32963	450 000 Ω	26	W-31458	1 MEG OHM
19	W-32963	450 000 Ω	27	W-31459	1 MEG OHM
20	W-32963	450 000 Ω	28	W-31460	1 MEG OHM
21	W-32963	450 000 Ω	29	W-31461	1 MEG OHM
22	W-32963	450 000 Ω	30	W-31462	1 MEG OHM
23	W-32963	450 000 Ω	31	W-31463	1 MEG OHM
24	W-32963	450 000 Ω	32	W-31464	1 MEG OHM
25	W-32963	450 000 Ω	33	W-31465	1 MEG OHM
26	W-32963	450 000 Ω	34	W-31466	1 MEG OHM
27	W-32963	450 000 Ω	35	W-31467	1 MEG OHM
28	W-32963	450 000 Ω	36	W-31468	1 MEG OHM
29	W-32963	450 000 Ω	37	W-31469	1 MEG OHM
30	W-32963	450 000 Ω	38	W-31470	1 MEG OHM
31	W-32963	450 000 Ω	39	W-31471	1 MEG OHM
32	W-32963	450 000 Ω	40	W-31472	1 MEG OHM
33	W-32963	450 000 Ω	41	W-31473	1 MEG OHM
34	W-32963	450 000 Ω	42	W-31474	1 MEG OHM
35	W-32963	450 000 Ω	43	W-31475	1 MEG OHM
36	W-32963	450 000 Ω	44	W-31476	1 MEG OHM
37	W-32963	450 000 Ω	45	W-31477	1 MEG OHM
38	W-32963	450 000 Ω	46	W-31478	1 MEG OHM
39	W-32963	450 000 Ω	47	W-31479	1 MEG OHM
40	W-32963	450 000 Ω	48	W-31480	1 MEG OHM
41	W-32963	450 000 Ω	49	W-31481	1 MEG OHM
42	W-32963	450 000 Ω	50	W-31482	1 MEG OHM
43	W-32963	450 000 Ω	51	W-31483	1 MEG OHM
44	W-32963	450 000 Ω	52	W-31484	1 MEG OHM
45	W-32963	450 000 Ω	53	W-31485	1 MEG OHM
46	W-32963	450 000 Ω	54	W-31486	1 MEG OHM
47	W-32963	450 000 Ω	55	W-31487	1 MEG OHM
48	W-32963	450 000 Ω	56	W-31488	1 MEG OHM
49	W-32963	450 000 Ω	57	W-31489	1 MEG OHM
50	W-32963	450 000 Ω	58	W-31490	1 MEG OHM
51	W-32963	450 000 Ω	59	W-31491	1 MEG OHM
52	W-32963	450 000 Ω	60	W-31492	1 MEG OHM
53	W-32963	450 000 Ω	61	W-31493	1 MEG OHM
54	W-32963	450 000 Ω	62	W-31494	1 MEG OHM
55	W-32963	450 000 Ω	63	W-31495	1 MEG OHM
56	W-32963	450 000 Ω	64	W-31496	1 MEG OHM
57	W-32963	450 000 Ω	65	W-31497	1 MEG OHM
58	W-32963	450 000 Ω	66	W-31498	1 MEG OHM
59	W-32963	450 000 Ω	67	W-31499	1 MEG OHM
60	W-32963	450 000 Ω	68	W-31500	1 MEG OHM



146-1—Wiring Diagram

# Model 147

## Specifications

Model 147 is a four tube tuned radio frequency receiver designed for operation from 110 volt, 25 or 60 cycle A. C. and 110 volt D. C. electric circuits.

## Tubes And Voltage Limits

The following are the voltage limits measured with the receiver in operating condition, but with no signal to the antenna circuit. Use a high resistance D. C. voltmeter (1000 ohms

per volt, or more) for all voltages but filaments on A. C. operation. For heater or filament voltages on A. C. use a low range A. C. meter.

Line voltage—117.5 volts.

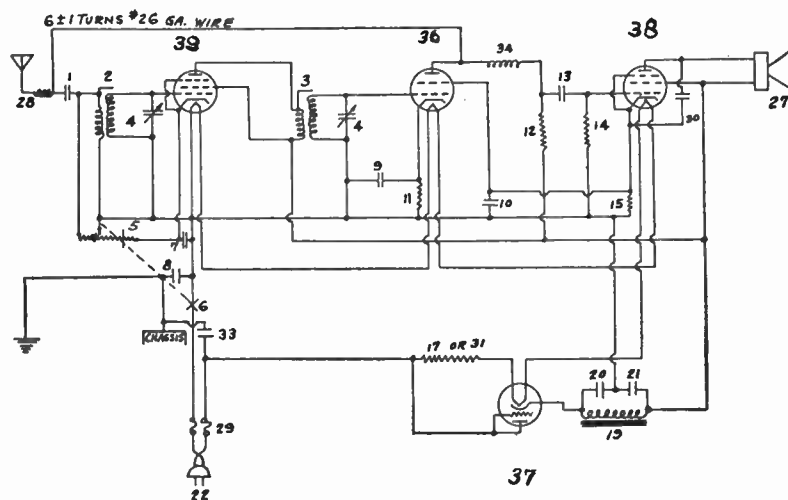
Plate voltage measured from plate contact to cathode contact.

Screen grid voltage measured from screen grid contact to cathode contact.

Bias voltage measured from cathode to negative of "B" supply.

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	FIL
<b>Voltages with A. C. Power Supply</b>						
-39	R. F. Amplifier	104	104		1.3	5.6
-36	Detector	5	7		1.2	5.6
-38	Output	92	95		14	5.6
-37	Rectifier				118	6.6
<b>Voltages with D. C. Power Supply</b>						
-39	R. F. Amplifier	100	100		1.2	5.6
-36	Detector	5	7		1.0	5.6
-38	Output	92	95		12.0	5.6
-37	Rectifier	3			102	5.6

1	W-27652	.003 MFD.
2	W-27680	ANTENNA COIL
3	W-27681	INTERSTAGE COIL
4	B-27706	TUNING CONDENSER
5	W-27694	VOLUME CONT. 4500 $\Omega$
6		LINE SWITCH
7	W-25438	.1 MFD.
8		.1 MFD.
9	W-27677A	8 MFD.
10		8 MFD.
11	W-27237A	60,000 $\Omega$
12	W-26577	3 MEG.
13	W-27203	.02 MFD.
14	W-26578	5 MEG.
15	W-26690	4500 $\Omega$
16		
17	W-27675	300 $\Omega$ REFDEN.
18		
19	GR-2477A	FILTER CHOKER
20	W-27676	4 MFD.
21		4 MFD.
22	W-27815	CORD & PLUG
23		
24		
25		
26		
27	27790	340 SPEAKER
28	W-26072	ANTENNA LEAD
29	W-4639C	2 AMP. FUSE
30	W-27652	.003 MFD.
31	W-28100	300 $\Omega$ GANDRUM
32		
33	W-27652	.003 MFD.
34	GI-24234	FILTER CHOKER
35		
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45		
46		

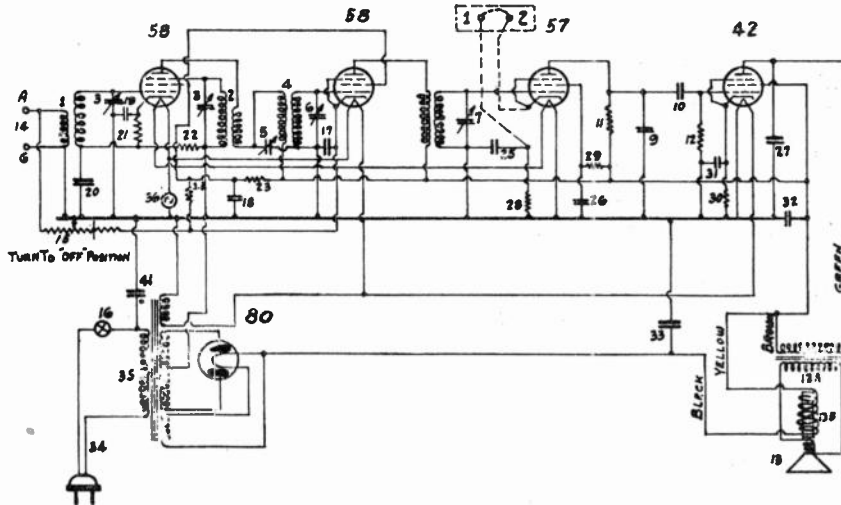


The general replacement volume control line handled by Crosley distributors is complete, of excellent quality and properly priced. The factory will be happy to furnish information regarding this material.

# Model 148

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	Fil.
-58	Osc. Detector	230	110	33	2.7*	2.5
-58	I. F. Amplifier	255	140	0	3.0	2.5
-57	Detector	180	40	0	5.8	2.5
-42	Output	240	255	0	17.0	7.0
-0	Rectifier	300				4.8

\*Across 275 ohm resistor in cathode circuit.



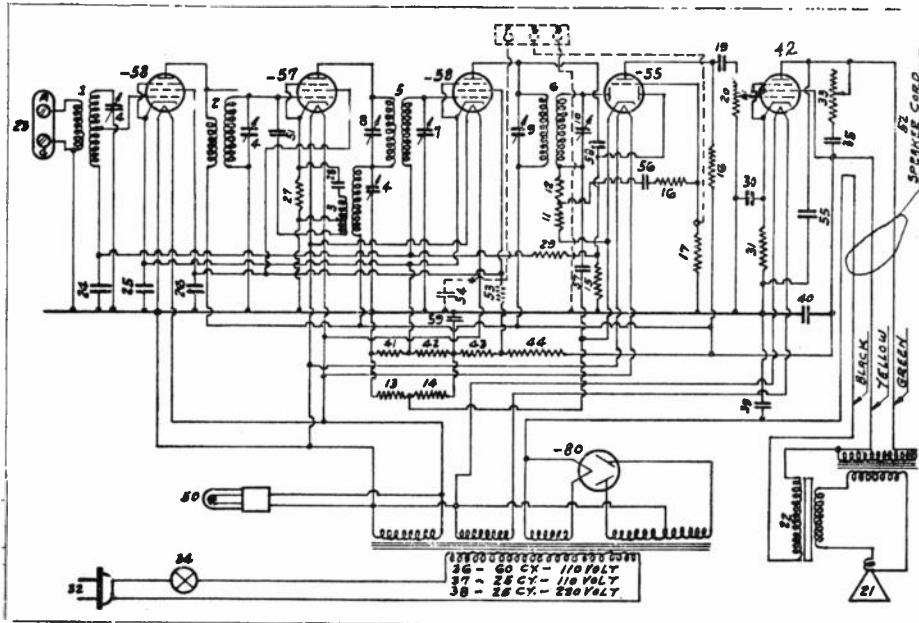
### PARTS LIST, MODEL 148

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-32000	Ant. Coil	21	W-25237	275 ohms Res.
2	W-27475	Osc. Coil	22	W-26690	4500 ohms Res.
3	B-27425	A-56 Var. Cond.	23-24	W-27120	8500-25,000 ohms Res
4	W-24203-D	I.F. Trans. Coil	25	W-24784	.25 mfd. Cond.
5	G2-25948	I.F. Trans. Cond.	26	W-25517	.05 mfd. Cond.
6-7	W-25008-A	I.F. Tuning Conds.	27	W-25517	.008 mfd. Cond.
8	G7-25445	I.F. Trans.	28	W-21453	40,000 ohms Res.
9-10	W-25537	.0006 - .03 mfd. Cond.	29	W-26577	3 meg. Res.
11	W-21455	300,000 ohms Res.	30	W-23907	750 ohms Res.
12	W-23785	500,000 ohms Res.	31-32	W-27488	8 mfd. Conds.
13	27610	Speaker	33	W-23701-A	7 mfd. Cond.
15-16	W-26573	S-55 Vol. Cont. & Sw.	35	G11-23559	Power Trans.
17-20	W-25438	.1 mfd. Conds.	41	W-27540	.0005 mfd. Cond.



# Model 150

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	Fil.
-58	R. F. Amplifier	260	90	0	2.5	2.5
-57	Oscillating detector	240	80	0	5.0	2.5
-58	I. F. Amplifier	275	100	0	2.5	2.5
-55	Detector	95			23.0	2.5
-42	Output	255	260	0	22.0	6.3
-80	Rectifier	360				5.0

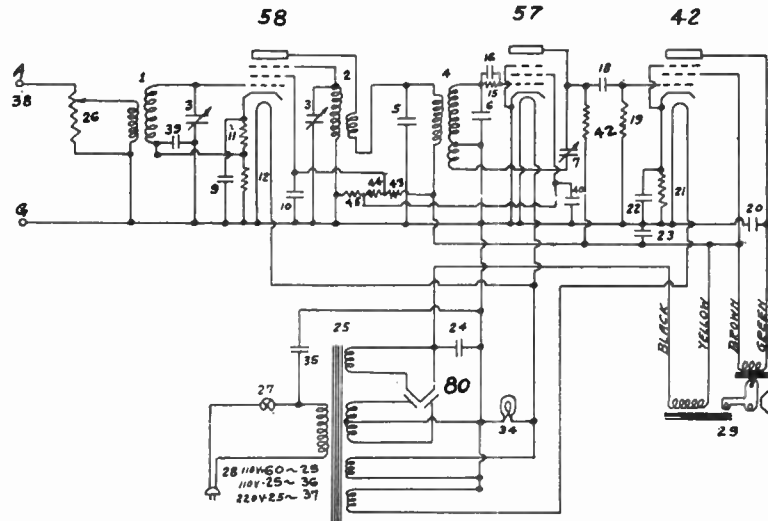


### PARTS LIST, MODEL 150

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-24995	Ant. Coil	21-22	IC-25518	312-4 Speaker 1300 ohm Field Coil
2	G2-25969-A	Interstage Coil	24-25	W-25438	.1 mfd. Cond.
3	G9-24996	Osc. Coil	26 & 35	W-24049	.1 mfd. Cond.
4	C-26442-B	Tuning Cond.	27	W-24814	7,000 ohms Res.
5	G1-25444	1st I.F. Trans.	28	W-25437	.0015 mfd. Cond.
6	G6-25444	2nd I.F. Trans.	29	W-21454	1 meg. Res.
7	W-25008-A	I.F. Tuning Cond.	30	W-26870-A	6 mfd. Cond.
8-9-10	G1-25948	Pri., Sec. I.F., Sec. Cond.	31	W-23907	750 ohms Res.
11-12	W-21455	300,000 ohms Res.	33-34	W-25594	Tone Cont. & Power Sw.
13	W-22831	15,000 ohms Res.	36	G14-23559	60 Cy. Power Trans.
14	W-21876	10,000 ohms Res.	39-40	W-25542-A	8-4 mfd. Conds.
15	W-26577	3 meg. Res..	41-44	W-27389	110-2,000-8,000-15,000 ohms Res.
16	W-21455	300,000 ohms Res.	51	W-24077	2.5 mmf. Cond.
17	W-26577	3 meg. Res.	53	W-7159	4400 ohms Res. (Phono only)
18	W-21875	100,000 ohms Res.	54	W-24049	.1 mfd. Cond. (Phono only)
19	W-23142	.02 mfd. Cond.	55	W-23635	.006 mfd. Cond.
20	W-26877	Level Cont. 300,000 ohms Res.	56	W-23142	.02 mfd. Cond.
			57	W-26571	.0005 mfd. Cond.
			58	W-27540	.0005 mfd. Cond.
			59	W-27652	.003 mfd. Cond.

# Model 154

Tube	Position	Plate	Voltages			Fil.
			Screen Grid	Cathode	Control Grid	
-58	Oscillator modulator	200	100	16	-14	2.5
-57	2nd Detector	25	20	0	0	2.5
-42	Output	190	200	12	0	6.3
-80	Rectifier	310				5.0

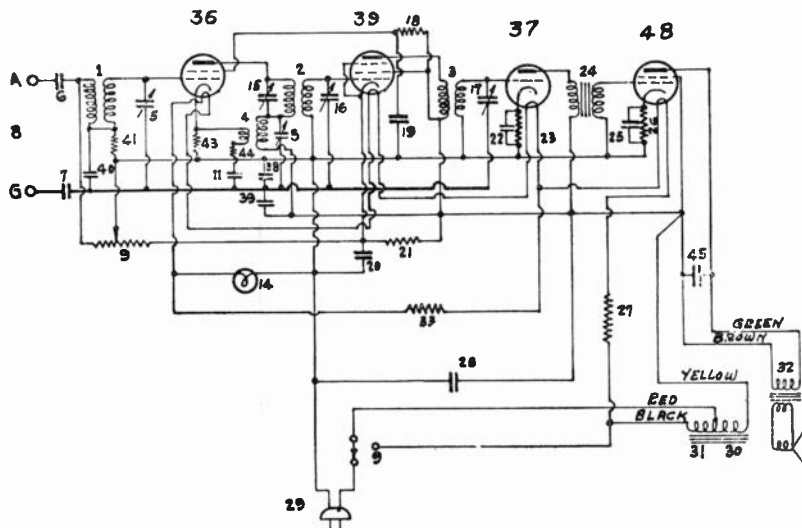


## PARTS LIST, MODEL 154

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G8-24995	Ant. Coil	19	W-26577	3 meg. Res.
2	G12-24996	Osc. Coil	20	W-23142	.02 mfd. Cond.
3	L-27426	Tuning Cond.	21	W-23907	750 ohms Res.
4	G10-25444	I.F. Coil	22-23	W-25857-B	8 mfd. 25-200 v. Cond.
5	G2-25948	I.F. Tuning Cond.	24	W-23701-A	7 mfd. 400 v. Cond.
6	W-25748	I.F. Tuning Cond.	25	G1-28500	60 Cy. Power Trans.
7	G2-27912	Regeneration Cond.	26-27	W-28517	10,000 ohms Vol. Cont. & S.P.S.T. Sw.
9-10	W-27204	.02 mfd. Cond.	29	L-28499	342-2 Speaker
11	W-25937	275 ohms Res.	35	W-25435	.003 mfd. Cond.
12	W-26690	4500 ohms Res.	39-40	W-27204	.02 mfd. Cond.
15	W-26578	5 meg. Res.	42	W-23403	150,000 ohms Res.
16	W-25437	.0015 mfd. Cond.	43-44-45	W-28767	10,000-10,000-5,000 ohms Res.
18	W-27203	.02 mfd. Cond.			

# Model 155

Tube	Position	Plate	Screen Grid	Voltages	Bias	Fil.
-33	Oscillating Detector	92	50		5.0	6.3
-39	I. F. Amplifier	96	96		3.6	6.3
-37	2nd Detector	82	80		9.5	6.3
-48	Output	65	80		15.0	30.0



### PARTS LIST, MODEL 155

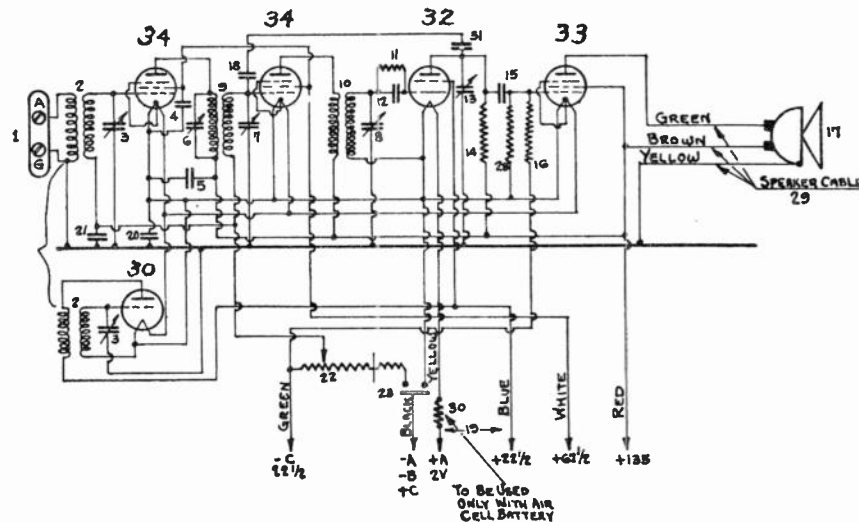
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G8-24995	Ant. Coil	23	W-21875	100,000 ohms Res.
2	G7-25444	I.F. Trans.	24	G2-27062	A.F. Trans.
3	G7-25445	I.F. Trans.	25	W-26870-A	6 mfd. Cond.
4	G13-24996	Osc. Coil	26	W-24097	350 ohms Res.
5	L-27752	Tuning Cond.	27	W-27814	135 ohms Res.
6-7	W-23635	.006 mfd. Cond.	28	W-27789	8 mfd. Cond.
9	W-27755	Vol. Cont. & Sw.	33	W-27813	200 ohms Res.
11	W-27652	.003 mfd. Cond.	38-39	W-25316	.25 mfd. Conds.
15	G2-25948	I.F. Cond.	40	W-27203	.02 mfd. Cond.
16-17	W-25008-A	I.F. Conds.	41	W-21375	100,000 ohms Res.
18	W-21455	300,000 ohms Res.	43	W-24814	7,000 ohms Res.
19-20	W-27204	.02 mfd. Conds.	44	W-25037	275 ohms Res.
21	W-23616	15,000 ohms Res.	45	W-27203	.02 mfd. Cond.
22	W-24784	.25 mfd. Cond.			

# Model 156

Tube	Position	Plate	Screen Grid	Voltages	Bias	Fil.
-34	1st Detector	135	67.5	4.0	2.0	
-30	Oscillator	22.5		0	2.0	
-34	I. F. Amplifier	135	67.5	4.0	2.0	
-32	2nd Detector	135*	22.5	0	2.0	
-33	Output	135	135		2.0	

\* Measured to battery side of 300,000 ohm Plate Resistor.

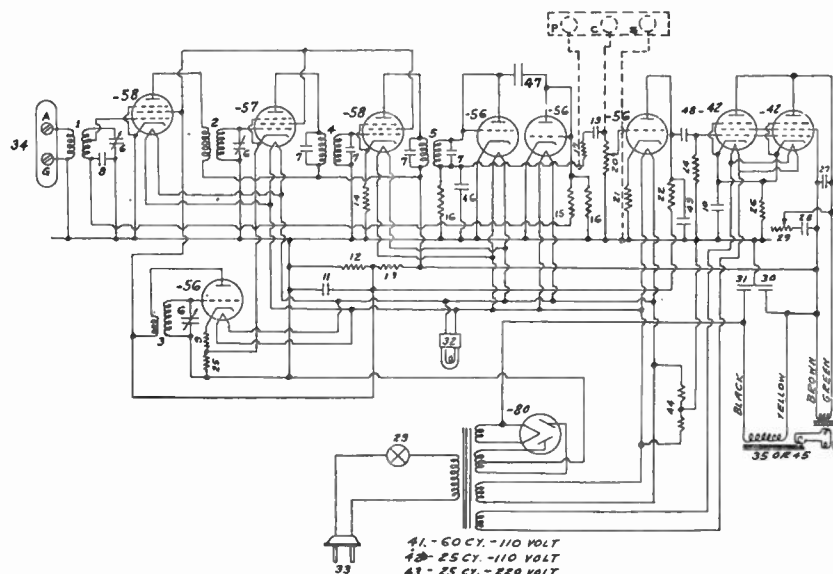
1	W-20264	ANTENNA GROUND POST
2	GT-27197	ANT. & OSC. COILS
3	B-27425	TUNING COND.
4	W-25438	0.1 MFD.
5	W-25438	0.1 MFD.
6	GT-25948	I.F. TUNING COND.
7	W-25008A	I.F. TUNING COND.
8	W-25008A	I.F. TUNING COND.
9	GT-25444	I.F. TRANS.
10	GT-25444	I.F. TRANS.
11	W-26377	3 MEG. GRID LEAK
12	W-26377	0.0025 MFD.
13	GT-27197	REGENERAT. LENS COIL
14	W-27197	300,000 Ω
15	W-27197	0.02 MFD.
16	W-21454	1 MEGOHM GRID LEAK
17	L-27197	33 Ω 3 SPEAKER
18	M-41	EYELET CONDENSER
19	B-271930	BATTERY CABLE
20	W-25438	0.1 MFD.
21	W-271930	VOLUME CONT. 10,000 Ω
22	W-271930	SMITH
23		
24		
25		
26		
27		
28	W-26977	9 MEG. RESIS.
29	W-27033	SPEAKER CABLE
30	GT-23500	AIR CELL RESISTOR
31	W-24077	EYELET COND.
32		
33		
34		
35		
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41		



# Model 157

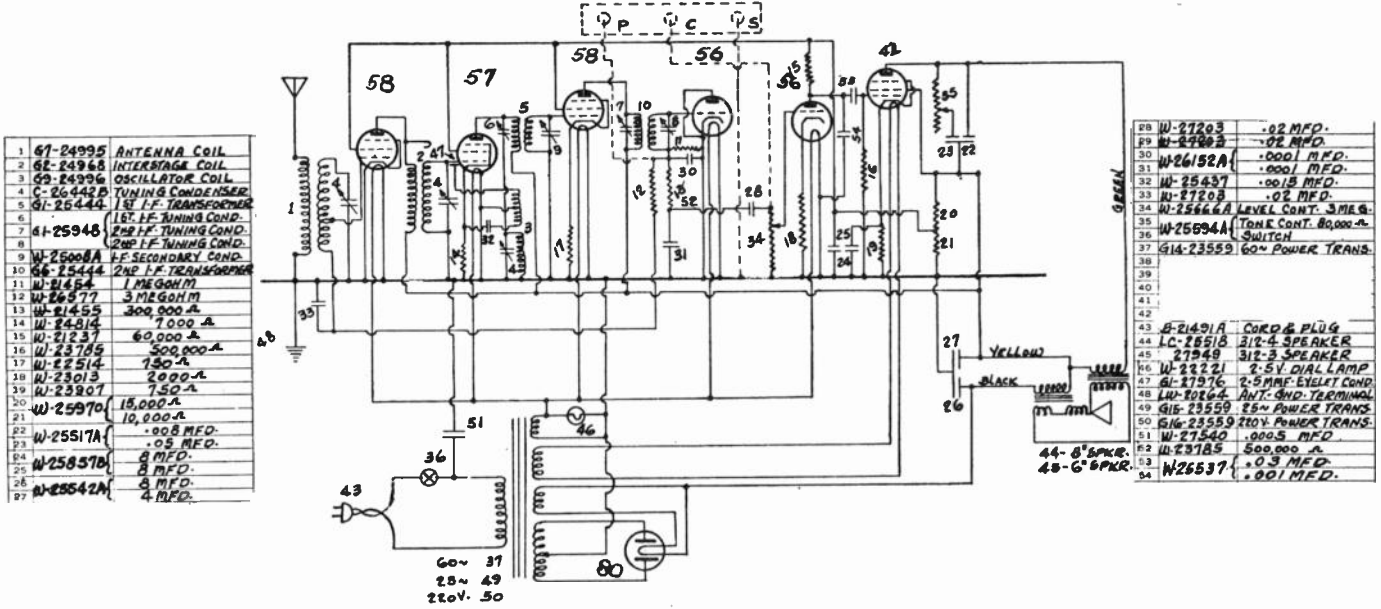
Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	FIL.
-58	R. F. Amplifier	240	110	0	0	2.5
-57	1st Detector	240	110	0	6.0	2.5
-56	Oscillator	110		20.0		2.5
-58	I. F. Amplifier	240	110	0	2.8	2.5
-56	Detector	0				2.5
-56	AVC Rectifier	0				2.5
-56	A. F. Amplifier	40			2.0	2.5
-42	Parallel Output	250	260		17.5	6.3
-42	Parallel Output	250	260		17.5	6.3
-80	Rectifier	350				4.8

1	GT-24995	ANTENNA COIL
2	GT-25962	INTERMEDIATE COIL
3	W-24995	OSCILLATOR COIL
4	GT-24065	FIRST I.F. TRANS.
5	GT-24065	SECOND I.F. TRANS.
6	GT-25948	TUNING CONDENSER
7	GT-25948	I.F. TUNING CONDENSER
8	W-27203	0.02 MFD.
9	W-27210	15,000 Ω
10	W-25857	8 MFD.
11	W-25857	8 MFD.
12	W-25970	15,000 Ω
13	W-25970	10,000 Ω
14	W-25970	275 Ω
15	W-22215	3 MEGOHMS
16	W-21454	1 MEGOHM
17	W-21456	300,000 Ω
18		
19	W-26559	0.008 MFD.
20	W-25566	1 MEGOHM 3 MEG.
21	W-25013	500 Ω
22	W-21237	60,000 Ω
23		
24	W-21455	300,000 Ω
25	W-22514	750 Ω
26	W-22873	220 Ω
27	W-25517	0.05 MFD.
28	W-25517	0.05 MFD.
29	W-25517	0.05 MFD.
30	W-26118A	8 MFD.
31	W-26118A	8 MFD.
32	W-27222	2.5 V PHIL LIGHT
33	W-25919	CORD & PLUG
34	W-20264	ANT. GND. POST
35	27069	387-A SPEAKER
36		
37		
38		
39		
40		
41	GT-25668	POWER TRANS. 600V.
42	GT-25669	POWER TRANS. 250V.
43	GT-25669	POWER TRANS. 250V.
44	W-24077A	10 Ω - 10 Ω
45	W-27070	33 Ω SPEAKER-1/4
46	W-27332	0.001 MFD.
47	W-27332	0.001 MFD.
48	W-25537	0.01 MFD.



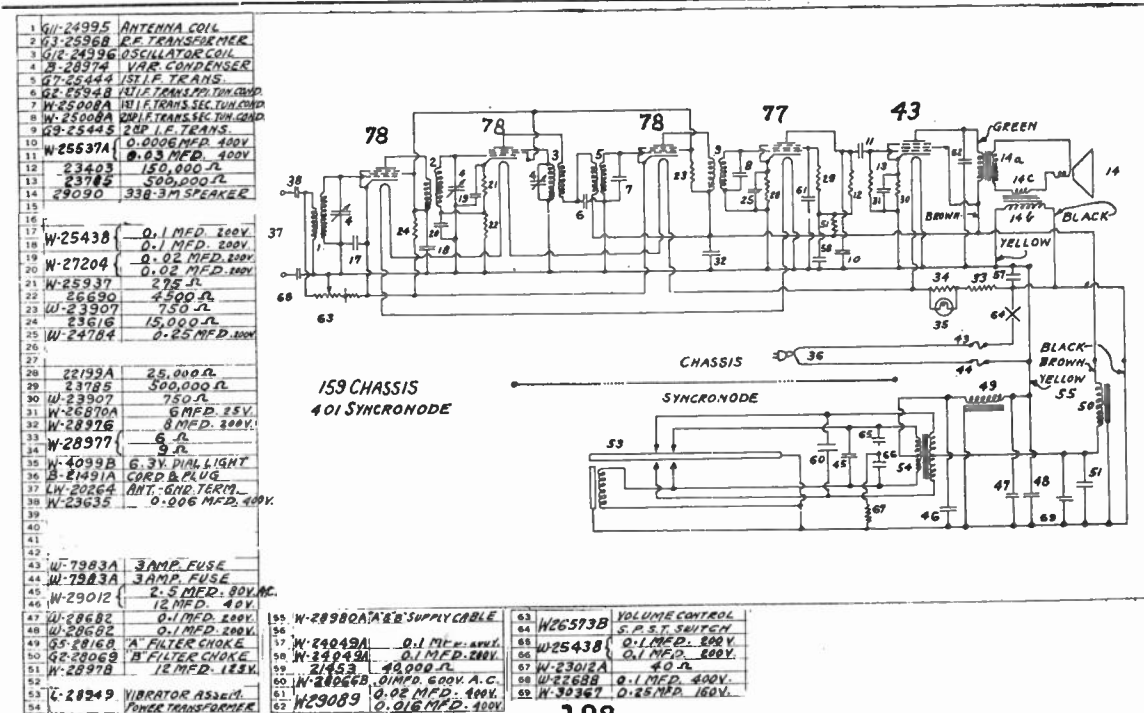
# Model 158

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	FIL
-58	R. F. Amplifier	270	85	0	0	2.5
-57	Oscillating Detector	270	80	0	6.0	2.5
-58	I. F. Amplifier	275	80	0	4.0	2.5
-56	Detector	0				2.5
-56	A. F. Amplifier	40			1.6	2.5
-42	Output	245	250		22.0	6.3
-E0	Rectifier	350				4.8

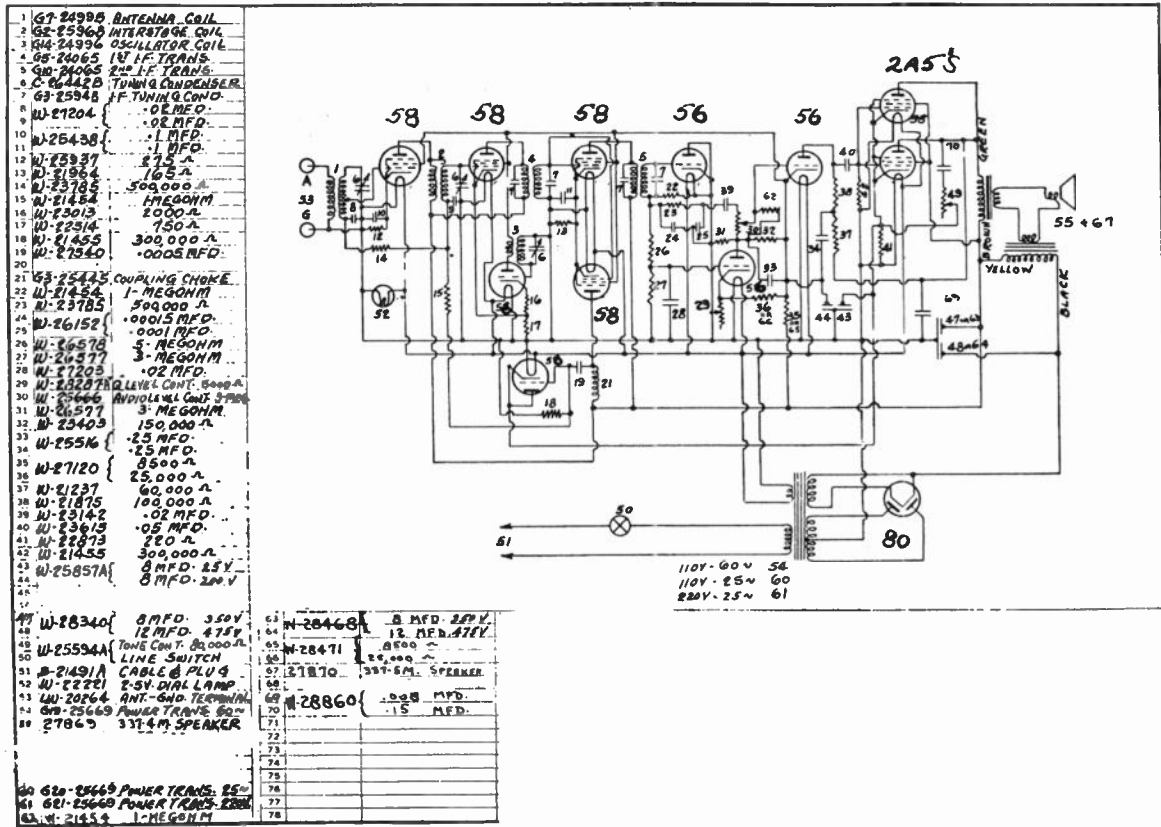


# Model 159

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	R. F. Amplifier	130	130	4.5	4.5	6.0
78	Oscillator Modulator	147	130	33.0	0	6.0
78	I. F. Amplifier	147	130	4.5	4.5	6.0
77	Detector	53	26.5	6.0	6.0	6.0
43	Output	146	147	6.0		24.0



# Model 160

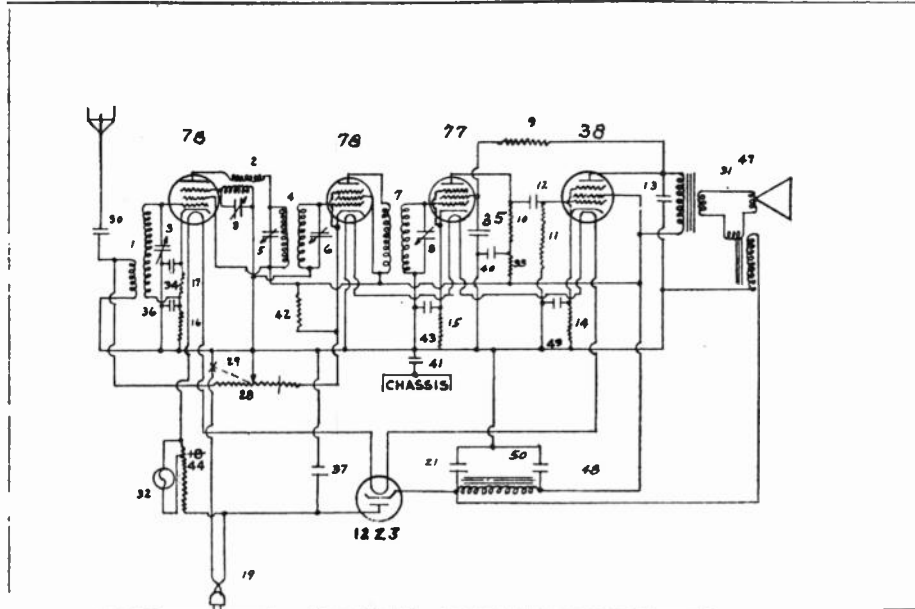


Due to the age of certain sets shown in the manual, it is necessary for the factory to make substitutions for many parts. The Crosley distributor in your area is up-to-date on all parts substitutions. It will be to your advantage to check with him regarding any Crosley parts that you may require.

# Model 163

Tube	Position	Plate	Voltages for A. C. Operation*			Fil.
			Screen Grid	Cathode	Supp. Grid	
-78	Oscillator modulator	105	105	2.5	20	6.3
-78	I. F. Amplifier	105	105	3.0	3.0	6.3
-77	2nd Detector	5	5	4.0	4.0	6.3
-38	Output	102	105	8.0	8.0	6.3
12Z3	Rectifier	117.5AC		120		12.6

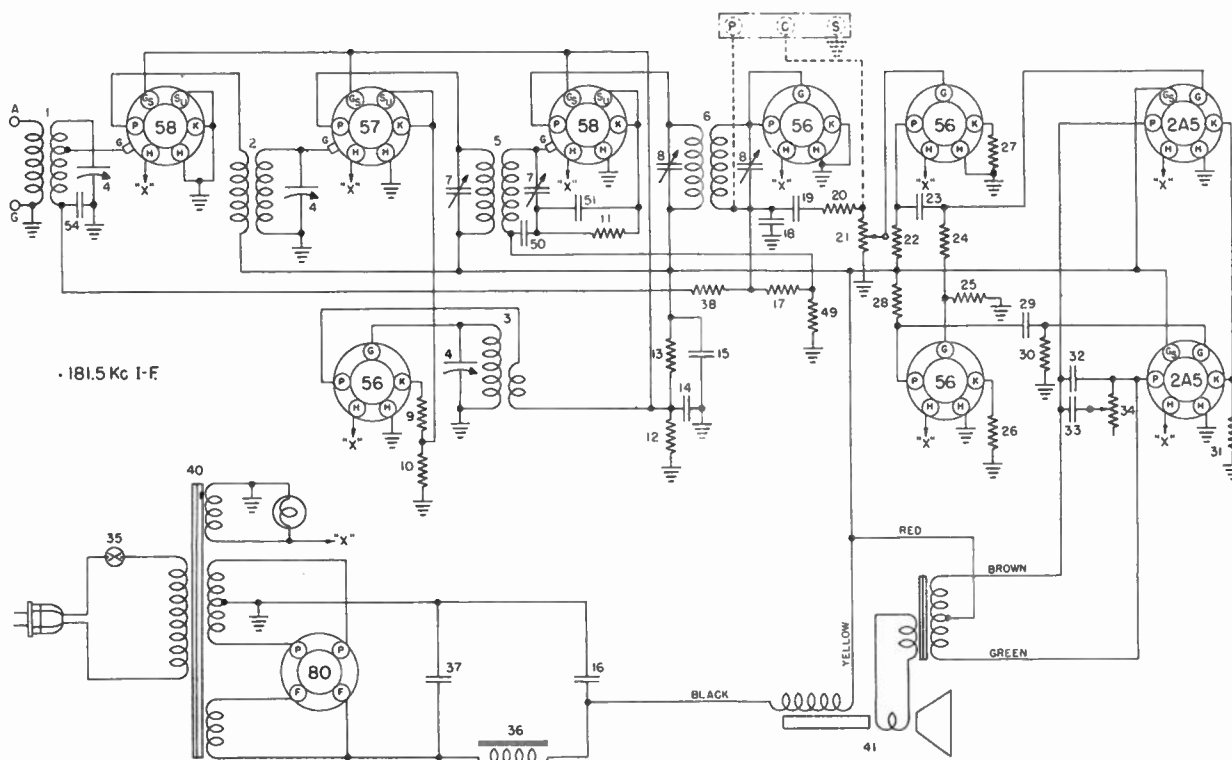
\* Voltages with D. C. operation are about 10% lower than those with A. C. operation.



## PARTS LIST MODEL 163

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G8-24995	Ant. Coil	17	W-28589	350 ohms Res.
2	G12-24996	Osc. Coil	21	W-28068	12 mfd. 200 v. Cond.
3	B-28592-B	Var. Cond.	28-29	W-28594	4800 ohms Vol. Cont.
4	G7-25444	1st I.F. Coil			160 ohm Fixed Cond. Sec.
5-6-7	G6-25949	I.F. Cond., I.F. Sec. Cond., 2nd I.F. Trans.	30	W-28620	.003 mfd. Cond.
8	G9-25948	Sec. I.F. Cond.	33	W-21455	300,000 ohms Res.
9 & 11	W-26578	5 meg. Res.	34-35	W-28623	.02 mfd. Cond.
10	W-26577	3 meg. Res.	36-37-40-41	W-28622	.1 mfd. Cond.
12	W-28621	.02 mfd. Cond.	42	W-4921-C	10,000 ohms Res.
13	W-28619	.006 mfd. Cond.	43	W-26870-A	6 mfd. 25 v. Cond.
14	W-22514	750 ohms Res.	44	W-28755-A	275 ohms Res.
15	W-23403	150,000 ohms Res.	47		343-2 Speaker
16	W-28588	2700 ohms Res.	48-49	W-25857-B	8-8 mfd. 200-25 v. Cond.
			50	G1-28859	10 Henry Choke

MODEL 164



PARTS LIST, MODEL 164

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-24995	Ant. Coil	23	W-23615	.05 mfd. 400 v. Cond.
2	G2-25968	Interstage Coil	24	21455	300,000 ohm Res.
3	G14-24996	Osc. Coil	25	21453	40,000 ohm Res.
4	C-26442-C	Tuning Cond.	26-27	W-23013	2,000 ohm Res.
5	G5-24065	1st I.F. Trans.	28	21237-A	60,000 ohm Res.
6	G10-24065	2nd I.F. Trans.	29	W-23615	.05 mfd. 400 v. Cond.
7-8	G3-25948	I.F. Tuning Cond.	30	21455	300,000 ohm Res.
9	W-23013	8,000 ohm Res.	31	W-22873	220 ohm Res.
10	W-24037	350 ohm Res.	32-33	W-25517-A	.008-.05 mfd. 400 v. Cond.
11	W-21964	165 ohm Res.	34-35	W-25594-B	30,000 ohm Tone Cont.
12-13	W-28471	25,000-8500 ohm Res.	36	G1-24628	S.P.S.T. Switch
14-16	W-29097-A	8-8-8 mfd. 250-350-450 v. Cond.	37	W-23705-A	Filter Choke
17	21454	1 megohm Res.	38	26577	12 mfd. 440 v. Cond.
18-19	W-25969-A	.00017-.03 mfd. 400 v. Cond.	39	26577	3 megohm Res.
20	21455	300,000 ohm Res.	40	G25-25669	60 cy. Power Trans.
21	W-25666-B	3 meg. Level Cont.	41	27622	317-4M Speaker
22	21237-A	60,000 ohm Res.	49	23403	150,000 ohm Res.
			50-51	W-25438	.1 mfd. 200 v. Cond.
			54	W-27203	.02 mfd. 200 v. Cond.

Your Crosley Distributor will be happy to give you complete information regarding Crosley Twice Tested Service Parts.



# Models 166 and 172

## Specifications

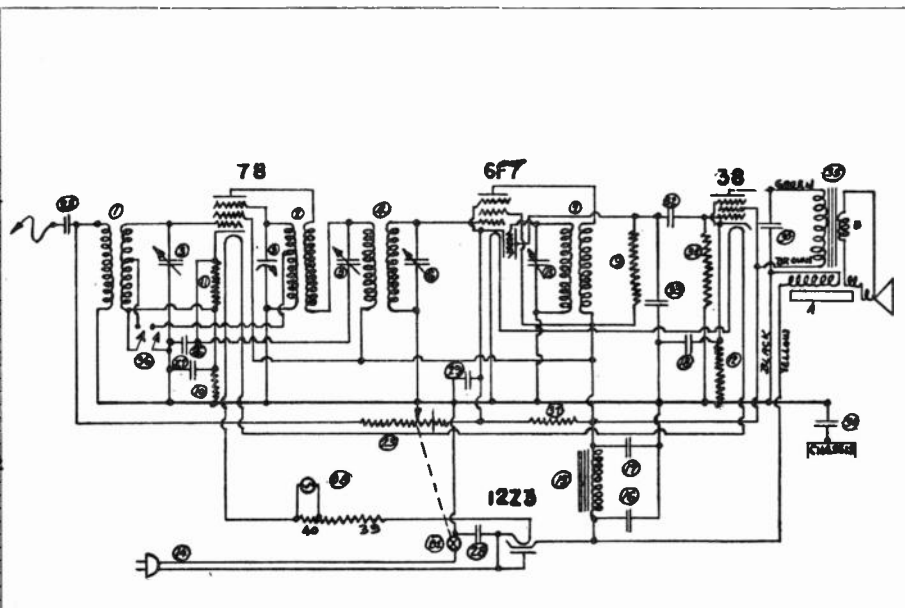
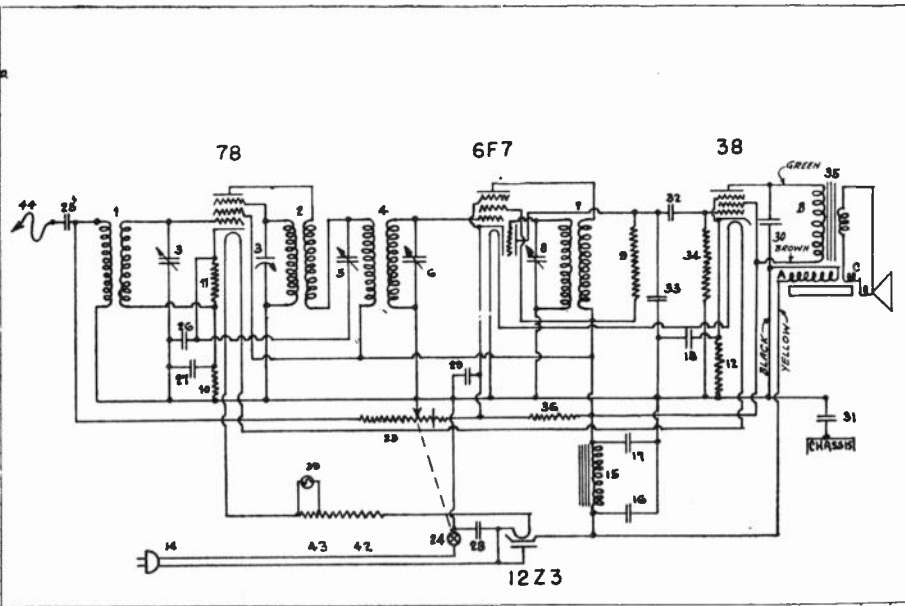
Models 166 and 172 are four tube super-heterodyne receivers designed for operation on 110 volt D.C. or 25 to 60 cycle A.C. The intermediate frequency is 456 Kc. The only difference between these sets is that Model 172 is a dual band receiver and Model 166 is a broadcast band receiver only.

## Tubes and Voltage Limits

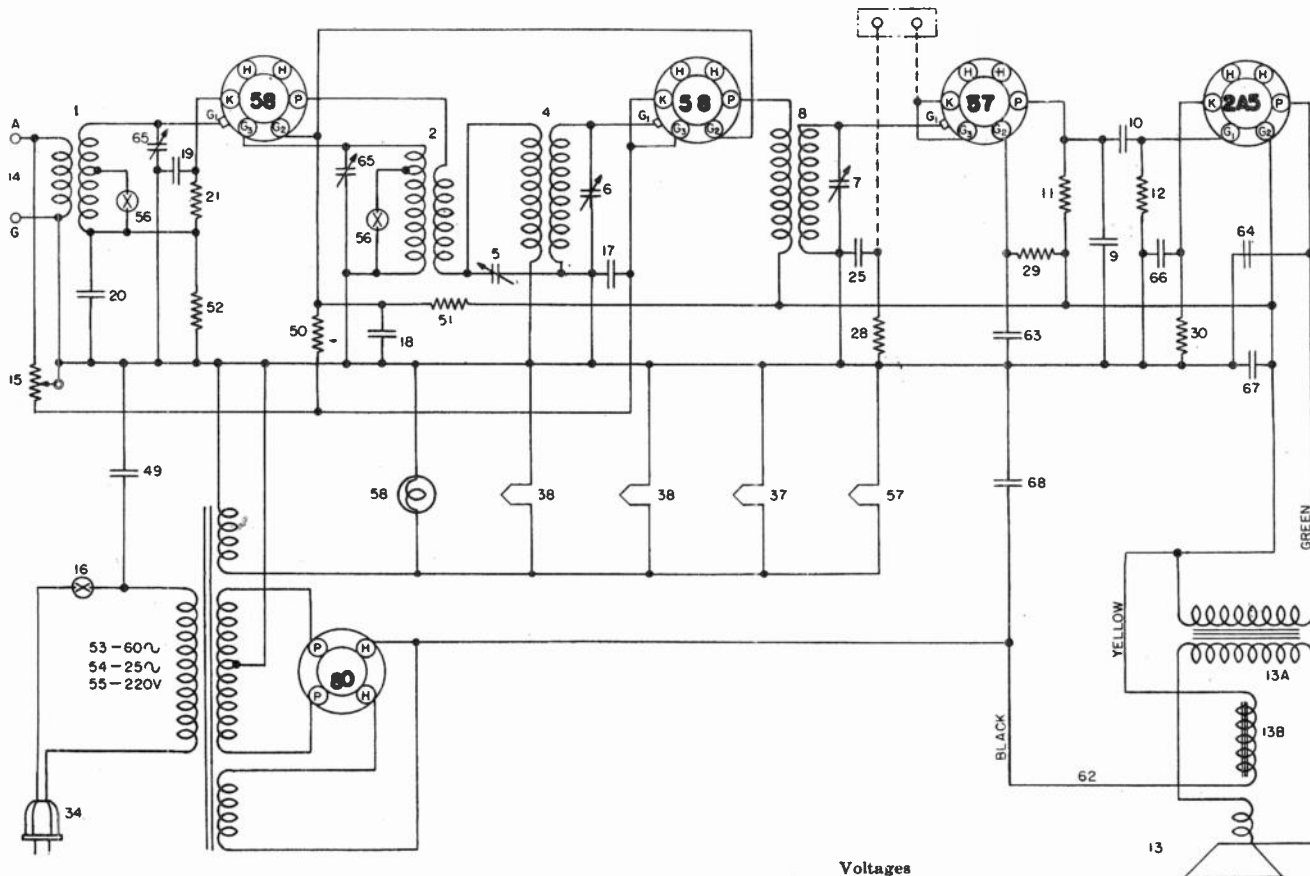
The following are the voltages measured with the receiver in operating condition but with no signal to the antenna circuit. Line voltage is 117.5 volts, 60 cycle A.C. All voltages, except filament, are measured with 300 volt D.C. voltmeter (1000 ohms per volt) from tube contact to gang condenser frame. Filament voltages are measured with a low range A.C. voltmeter.

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	Oscillator Modulator	101	101	20	0	6.0
6F7	I. F. Amplifier and Detector	101	101	4.5		6.0
38	Output	Triode 7.5	101	2.0		6.0
12Z3	Rectifier	98		117.5		12.0

1	68-2498	ANTENNA COIL
2	612-2496	OSCILLATOR COIL
3	L-2827	VARIABLE COND.
4	GT-2444	151 I.F. TRANS.
5	68-2594B	14 I.F. TUNING COND.
6	68-2544B	14 I.F. TUNING COND.
7	68-2594B	22 I.F. TUNING COND.
8	68-2594B	22 I.F. TUNING COND.
9	23785	500,000 Ω
10	28580	2700 Ω
11	W-28589	350 Ω
12	W-22514	750 Ω
13		
14	W-27885A	CORD & PLUG
15	G-28859	FILTER CHOKE
16		16 MFD. 125V.
17	W-29264A	16 MFD. 100V.
18		8 MFD. 10V.
19		
20		
21		
22		
23	W-28594A	VOLUME CONTROL
24	W-28620	S.P.S.T. SWITCH
25	W-28620	0.003 MFD. 200V.
26	W-28623	0.02 MFD.
27	W-29271	0.02 MFD. 200V.
28	W-29265	0.02 MFD. 400V.
29	W-29265	0.008 MFD. 200V.
30	W-29265	0.02 MFD. 200V.
31	W-29266A	0.02 MFD. 400V.
32	W-29266A	0.00017 MFD. 400V.
33	26578	5 MFD.
34	29815	346 Ω
35	22199A	28,000 Ω
36	W-4099A	DIAL LAMP
37		
38		
39		
40		
41		
42	W-29591A	2.44 Ω
43	W-29591A	2.6 Ω
44	W-29784B	ANTENNA ASSEMBLY
45		
46		



# MODEL 167



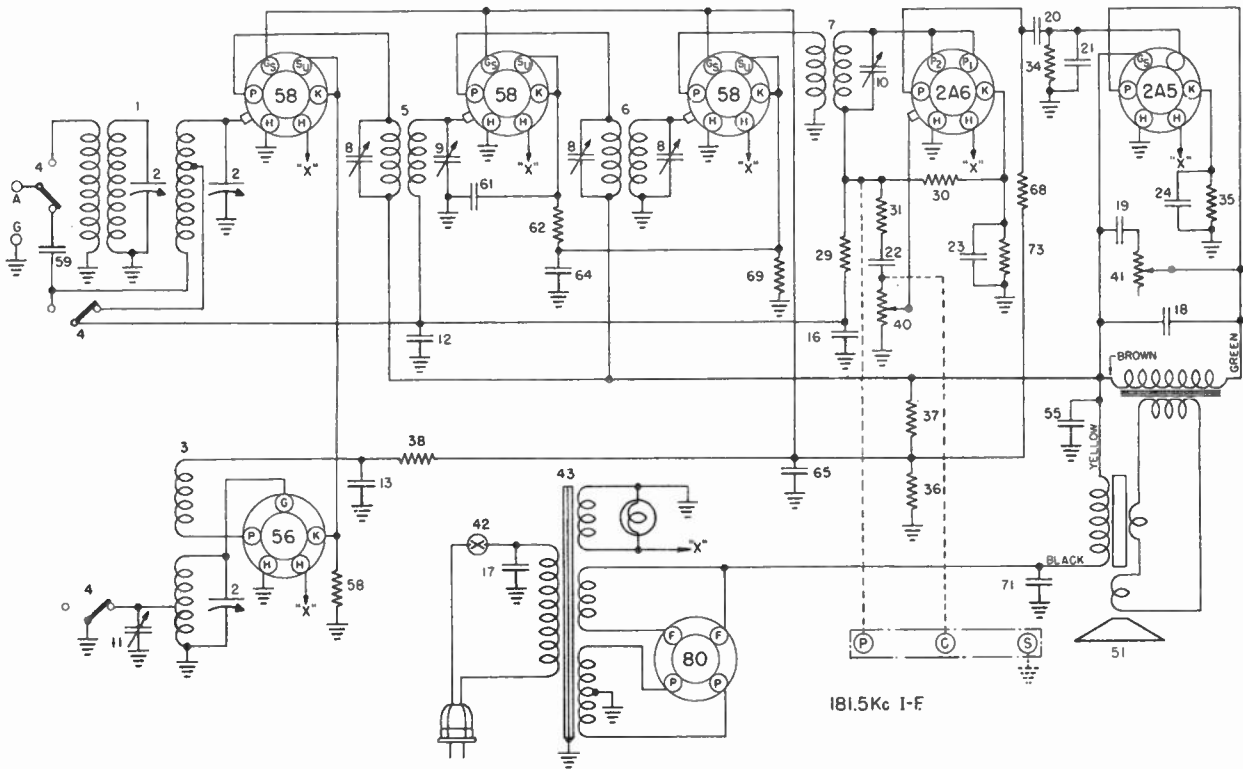
Tube	Position	Plate	Voltages			Cathode	Filament
			Screen Grid	Supp. Grid			
58	Oscillator Modulator	267	150	0	35	2.4	
58	I. F. Amplifier	267	150	3.5	3.5	2.4	
57	Detector	150	48	6.5	6.5	2.4	
2A5	Output	250	267		21.5	2.4	
80	Rectifier	340				4.7	

Voltage limits are plus or minus ten percent of the values given.

## PARTS LIST

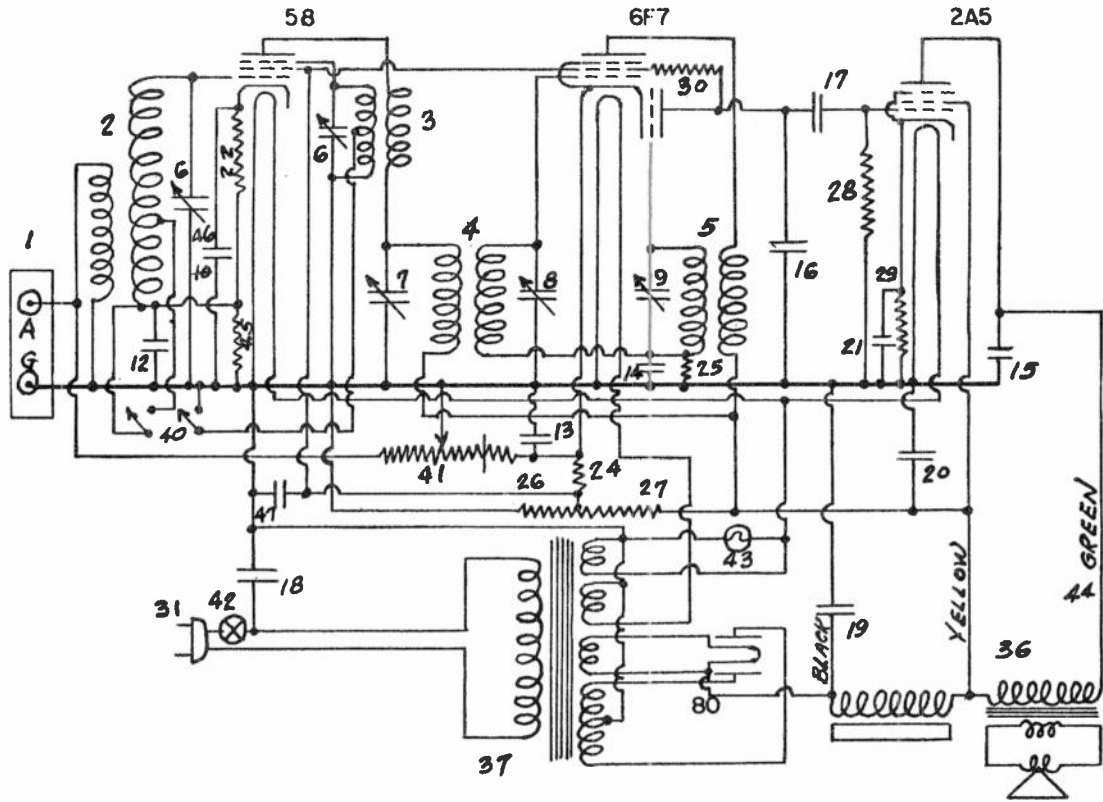
Symbol	Part No.	Description
1	G20-24995	ANTENNA COIL
2	G17-24996	OSCILLATOR COIL
4	G7-25444	1ST I.F. TRANSFORMER
5	G2-25948	1ST I.F. TRANS. PRI. TUN. COND.
6	W-25008A	1ST I.F. TRANS. SEC. TUN. COND.
7	W-27548	2ND I.F. TRANS. SEC. TUN. COND.
8	G7-25445	2ND I.F. TRANSFORMER
9	W-255375	COND. .0006 MF. 400V. } TWO SECT.
10		COND. .08MF. 400V. } COND.
11	W-21455	RESISTOR 800,000 OHMS
12	W-23785	RESISTOR 500,000 OHMS
13	27810A	835-3 SPEAKER
14	LW-20264	ANT.-GND. TERM.
15	W-25537A	VOLUME CONTROL
16		LINE SWITCH (ON CONTROL)
17	W-25438	COND. .1MF. 200V.
18	W-25438	COND. .1MF. 200V.
19	W-25438	COND. .1MF. 200V.
20	W-25438	COND. .1MF. 200V.
21	W-25987	RESISTOR 275 OHMS
25	W-24784	COND. .25MF. 200V.
28	W-21453	RESISTOR 40,000 OHMS
29	W-26577	RESISTOR 3 MEGOHMS
30	W-23907	RESISTOR 750 OHMS
34	B-21491A	CORD AND PLUG
49	W-29591A	COND. .0005MF. 400V.
50	W-27120	RESISTOR 25,000 OHMS } TAPPED
51		RESISTOR 8,500 OHMS } RESISTOR
52	30137	RESISTOR 3,500 OHMS
53	G20-23559	POWER TRANS. (60 cycle)
54	G21-23559	POWER TRANS. (25 cycle)
55	G22-23559	POWER TRANS. (220V.)
56	W-30414	WAVE CHANGE SWITCH
58	W-22221	2.5V DIAL LIGHT
62	W-81009	SPEAKER CABLE
63	W-81551	COND. .02MF. 400V.
64	W-81551	COND. .02MF. 400V.
65	L-81784	VARIABLE CONDENSER
66	W-29150B	COND. 12MF. 25V. } THREE SECT.
67		COND. 6MF. 450V. } FILTER
68		COND. 8MF. 450V. }

MODEL 168



PARTS LIST, MODEL 168

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-25967	R.F. Pre-Selector	34	23785	500,000 ohm Res.
2	C-29026	Variable Cond.	35	W-25521	450 ohm Res.
3	G18-24996	Osc. Coil	36-37	W-28471	25,000-8500 ohm Res.
4	W-29019-B	Band Change Switch	38	23868	6500 ohm Res.
5-6	G1-25444	1st & 2nd I.F. Trans.	40	W-2566-B	Level Cont.
7	G3-25445	3rd I.F. Trans.	41-42	W-25594-A	Tone Cont. S.P.S.T. Switch
8 & 10	G1-25948	I.F. Tuning Cond.	43	G17-23559	60 Cy. Power Trans.
9	W-25008-A	I.F. Tuning Cond.	51	LC-25586	312-4M Speaker
11	C-29026	Osc. Trimmer Cond.	55-56	W-23701-B	7 mfd. 440 v. Cond.
12-13	W-25438	.1 mfd. 200 v. Cond.	57	W-25937	275 ohm Res.
16-17	W-27540	.0005 mfd. 400 v. Cond.	58	W-28589	350 ohm Res.
18-19	W-25517-A	.008-.05 mfd. 400 v. Cond.	59	W-27540	.0005 mfd. 400 v. Cond.
20-21	W-25537-A	.03-.001 mfd. 400 v. Cond.	61	W-24049-A	.1 mfd. 200 v. Cond.
22	W-27203	.02 mfd. 200 v. Cond.	62	W-21964	165 ohm Res.
23-24	W-27677-A	8 mfd. 25 v. Cond.	63	29780	450 ohm Res.
29	21454	1 megohm Res.	64-65	W-25516	.250 mfd. 200 v. Cond.
30-31	21455	300,000 ohm Res.	67	28588	2700 ohm Res.
			67	21237-A	60,000 ohm Res.



Tube	Position	Plate	Screen Grid	Cathode	Supp. Grid	Filament
58	Oscillator-modulator	165	82	23	0	2.5
6F7	I. F. Detector	165	82	2	0	2.5
2A5	Output	158	165	10		2.5
80	Rectifier	295				4.9

Voltage limits are plus or minus 10% of values given.

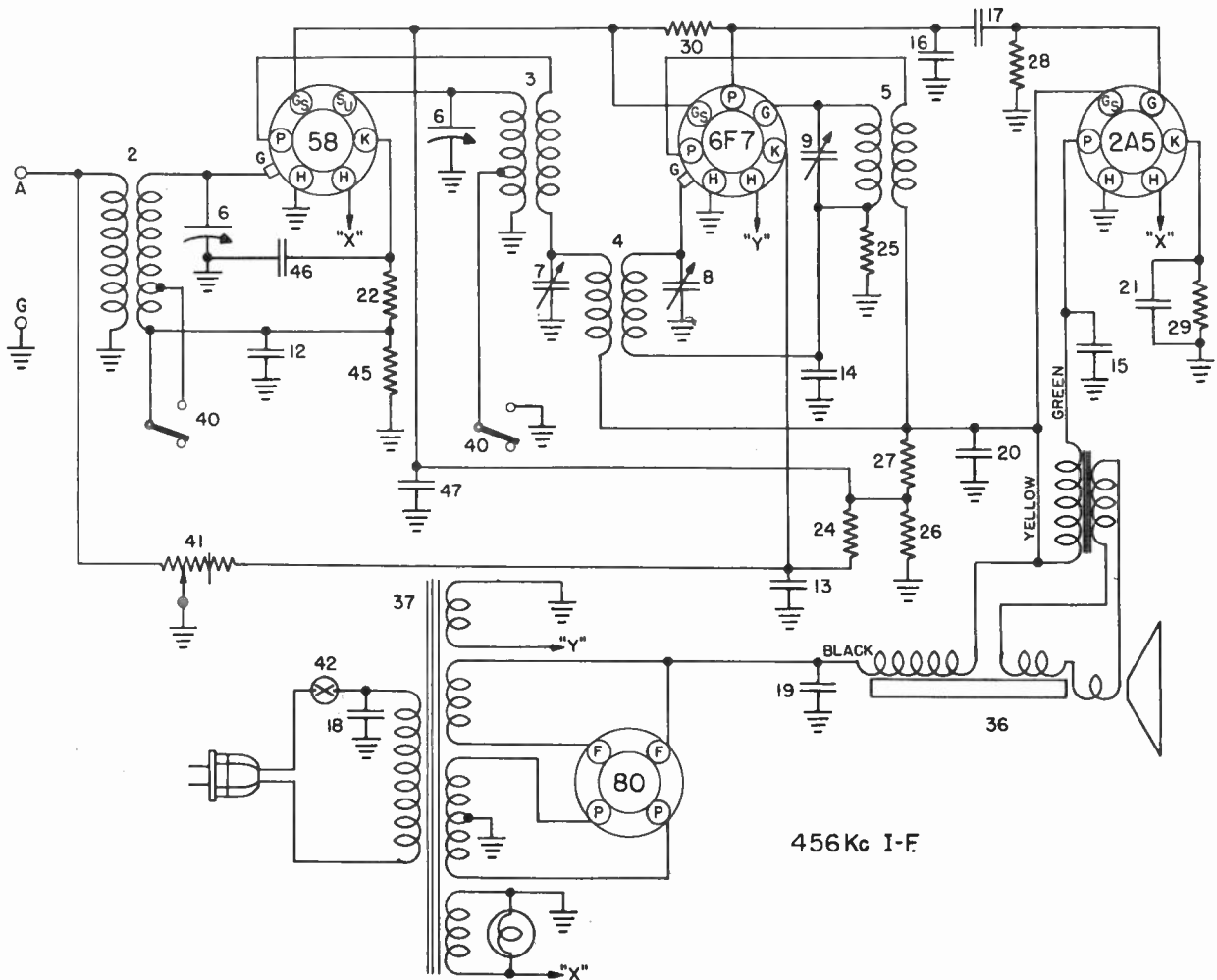
PARTS LIST, MODEL 169

Qty.	Part No.	Description	Qty.	Part No.	Description
1	G20-24995	Ant. Coil	1	G1-28500	Power Trans. 110 v. 60 cy.
1	G17-24996	Osc. Coil	1	W-27204	.02-.02 mfd. Cond.
1	G7-25444	1st I.F. Trans.	1	W-24049	.1 mfd. Cond.
1	G9-25445	2nd I.F. Trans.	1	W-23191	.01 mfd. Cond.
1	W-28959	Wave Change Switch	1	W-25537	.001-.03 mfd. Cond.
1	W-27425	Variable Cond. Gang	1	W-29592	.003 mfd. Cond.
1	G1-27812	Dial Light Assy.	2	W-27203	.02 mfd. Cond.
1	G5-25050	Dial Assy.	1	W-29150	6-7-8 mfd. Cond.
1	G2-25948	Variable I.F. Cond. (1st I.F. Pri.)	1	W-25937	275 ohm Res.
1	G10-25948	Variable I.F. Cond. (2nd I.F. Sec.)	1	24990	25,000 ohm Res.
1	W-27548	Adjustable I.F. Cond. Blade (1st I.F. Sec.)	1	21454	1 megohm Res.
1	W-26573-B	Vol. Cont. & Switch	1	W-28471	25,000-8500 ohm Res.
			2	23785	500,000 ohm Res.
			1	W-25521	450 ohm Res.
			1	31094	4500 ohm Res.

SPEAKER PARTS

	Magnavox	Jensen	
	342-2M	342-2J	
	Spec. 1300	Spec. 2617	
1	28761	29434	Cone & Voice Coil Assembly
1	28763	29436	Field Coil
1	28764	29437	Transformer

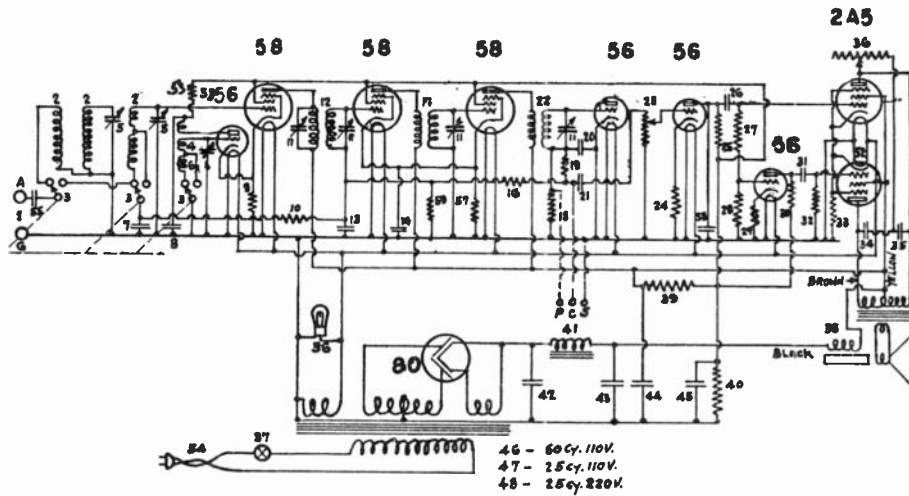
MODEL 169 REVISED



PARTS LIST, MODEL 169 REVISED

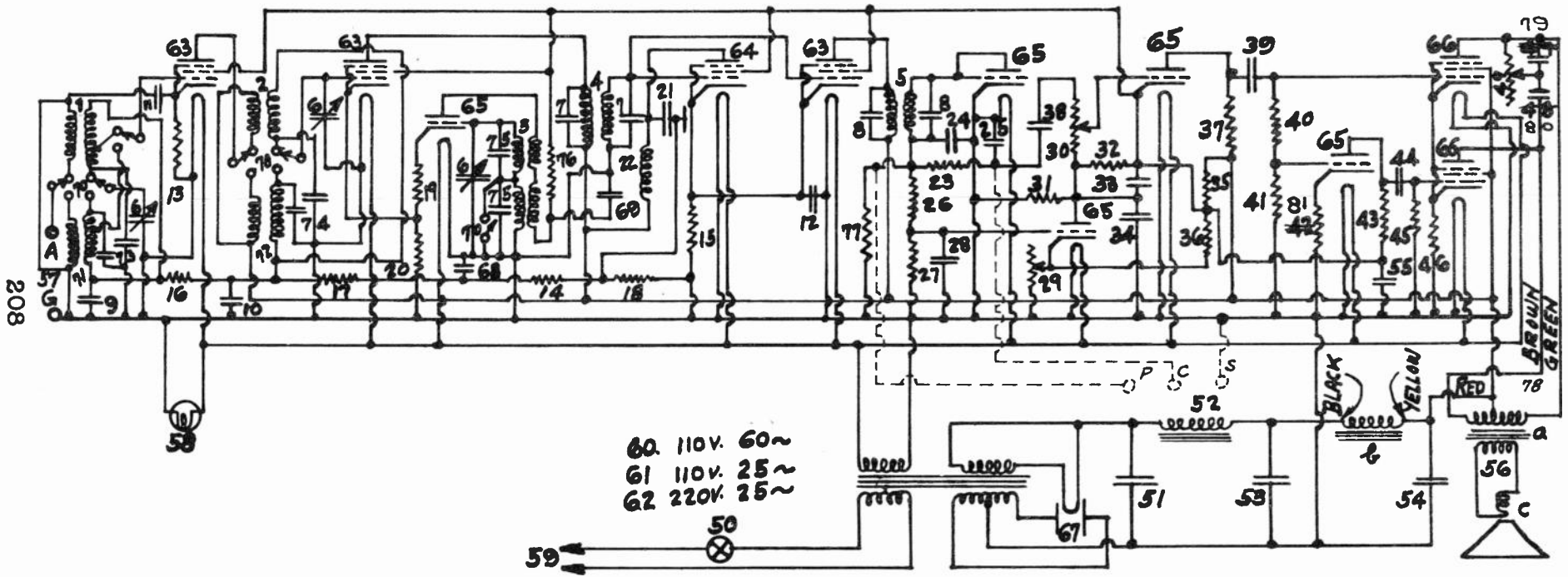
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G12-24995	Ant. Coil	25	21454	1 megohm Res.
2	G17-24996	Osc. Coil	26	W-23907	750 ohm Res.
3	L-28527	Tuning Cond.	27-28	W-25857-B	8-8 mfd. 25-200 v. Cond.
5	G2-25948	1st I.F. Tuning Cond.	29	W-23701-B	7 mfd. 440 v. Cond.
6	G9-25948	3rd I.F. Tuning Cond.	31	W-23191-A	.01 mfd. 400 v. Cond.
7	G10-25445	2nd I.F. Trans.	32	28489	342-2M Speaker
9	W-28959-A	D.P.S.T. Switch	38-39	W-25964-C	On-Off Sw. Vol. Cont.
10-11	W-27204	.02 mfd. 200 v. Cond.	40	4085	Eyelet Cond.
12	21454	1 megohm Res.	41	W-27548	2nd I.F. Tuning Cond.
14-15	W-27204	.02 mfd. 200 v. Cond.	42	W-27203	.02 mfd. 200 v. Cond.
17-18	W-25970	10,000-15,000 ohm Res.	43	26690	4500 ohm Res.
19	G1-28500	60 Cy. Power Trans.	44-46	W-29150-A	6-7-8 mfd. 400-450-25 v. Cond.
22	W-21454	1 megohm Res.	47	W-29592-A	.003 mfd. 400 v. Cond.
23-24	W-25969-A	.00017-.03 mfd. 400 v. Cond.			

MODEL 170



PARTS LIST, MODEL 170

Item No.	Part No.	Description	Item No.	Part No.	Description
2	G9-25967	Pre-Selector	27	21455	300,000 ohms Res.
3	W-29362	Band Change Sw.	28	21453	40,000 ohms Res.
4	G18-24996	Osc. Coil	29	28588	2700 ohms Res.
5-6	C-29026	Var. Tuning Cond.	30	21237	60,000 ohms Res.
		Osc. Trimmer Cond.	31	W-23615	.05 mfd. Cond.
7-8	W-27204	.02 mfd. Cond.	32	21455	300,000 ohms Res.
9	W-21965	375 ohms Flex. Res.	33	W-22873	220 ohms Flex. Res.
10	21455	300,000 ohms Res.	34-35	W-25517	.05-.008 mfd. Cond.
11	G3-25948	I.F. Tuning Cond.	36-37	W-25594-A	80,000 ohms Tone Cont.
12	G8-24065	1st I.F. Trans.			S.P.S.T. Sw.
13-14	W-25438	.1 mfd. Cond.	38	27622-A	317-4 Speaker
16	26577	3 meg. Res.	39-40	W-28471	8500-25,000 ohms Res.
17	G2-25449	2nd I.F. Trans.	41	G1-24628	Filter Choke
18	23785	500,000 ohms Res.	42	W-23705-A	12 mfd. 440 v. Cond.
19	21455	300,000 ohms Res.	43-45	W-29097-A	8-8-8 mfd. 450-350-250 v. Cond.
20	W-27532	.0001 mfd. Cond.	46	G25-25669	60 Cy. Power Trans.
21	W-26559	.006 mfd. Cond.	53	4921	10,000 ohms 1 w. Res.
22	G2-25449	Diode Coupling Trans.	55	W-26571	.0005 mfd. Cond.
23	W-25666-A	3 meg. Vol. Cont.	57	W-29585	600 ohms Flex. Res.
24	28588	2700 ohms Res.	58	W-26571	.0005 mfd. Cond.
25	21237	60,000 ohms Res.	59	26577	3 meg. Res.
26	W-23615	.05 mfd. Cond.			



208

MODEL 171

## PARTS LIST, MODEL 171

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-24995	Ant. Low F. Coil	39	W-23615	.05 mfd. 400 v. Cond.
2	G2-25968	R.F. Low F. Coil	40	21455	300,000 ohms Res.
3	G18-24996	Osc. Coil	41	21453	40,000 ohms Res.
4	G5-24065	1st I.F. Coil	42	28588	2700 ohms Res.
5	G10-24065	2nd I.F. Coil	43	21237	60,000 ohms Res.
6	C-29656	Var. Cond.	44	W-23615	.05 mfd. 400 v. Cond.
7-8	G3-25948	1st & 2nd I.F. Tuning Conds.	45	21455	300,000 ohms Res.
9-10	W-27204	.02 mfd. 200 v. Cond.	46	W22873	220 ohms Res.
11-12	W-25438	.1 mfd. 200 v. Cond.	47-48	W-25517	.008-.05 mfd. 400 v. Cond.
13	W-25937	275 ohms Res.	49-50	W-25594-B	Tone Cont. S.P.S.T. Sw.
14	23785	500,000 ohms Res.	51	W-23705-A	12 mfd. 440 v. Cond.
15	W-25937	275 ohms Res.	52	G1-24628	Filter Choke
16-18	23785	500,000 ohms Res.	53-55	W-29097	8-8-8 mfd. 450-350- 250 v. Cond.
19	W-25937	275 ohms Res.	56	27622	317-4M Speaker
20	W-28539	350 ohms Res.	60	G25-25669	60 Cy. Power Trans.
21	W-27540	.0005 mfd. 400 v. Cond.	68-69	W-27204	.02 mfd. 200 v. Cond.
22	G3-25445	Plate Choke Coil	70	B-29681-A	6 P.D.T. Sw.
23	23785	500,000 ohms Res.	71	G14-24995	Ant. High F. Coil
24-25	W-26152	.00015-.0001 mfd. 400 v. Cond.	72	G5-25968	R.F. High F. Coil
26	26578	5 meg. Res.	73	G1-29699	Ant. Trans. Trimmer Cond.
27	26577	3 meg. Res.	74	G1-29699	R.F. Trans. Trimmer Cond.
28	W-27203	.02 mfd. 200 v. Cond.	75	G1-29699	Osc. Trimmer Cond.
29	W-29657-B	"Q" Level Control	76	21876	10,000 ohms Res.
30	W-25666-B	Audio Level Cont.	77	21454	1 meg. Res.
31	26577	3 meg. Res.			
32	28403	150,000 ohms Res.			
33-34	W-25516	.25 mfd. 200 v. Cond.			
35-36	W-28471	8500-25,000 ohms. Res.			
37	28403	150,000 ohms Res.			
38	W-23142	.02 mfd. 400 v. Cond.			

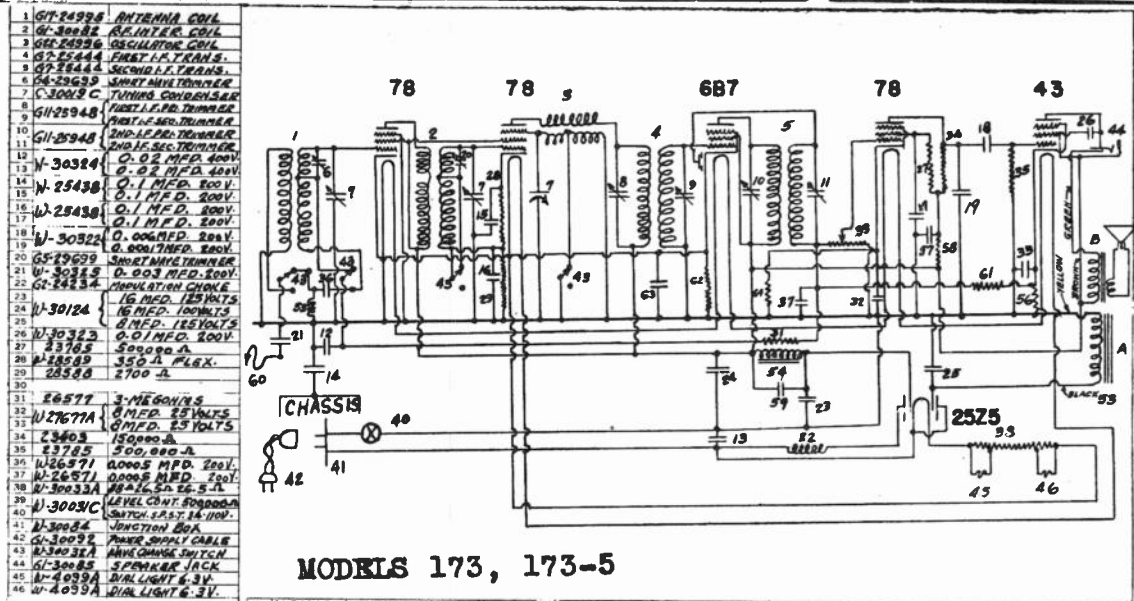
209

PARTS LIST, MODEL 171



## MODELS 173, 173-5, 174

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	R. F. Amplifier	112	112	4	0	6.3
78	Oscillator Modulator	112	112	20	0	6.3
6B7	I. F. Amplifier and Detector	112	112	4		6.3
78	A. F. Amplifier	7.5	12.5	4	4	6.3
43	Output	101	112	16.5		25
25Z5	Rectifier			125		25

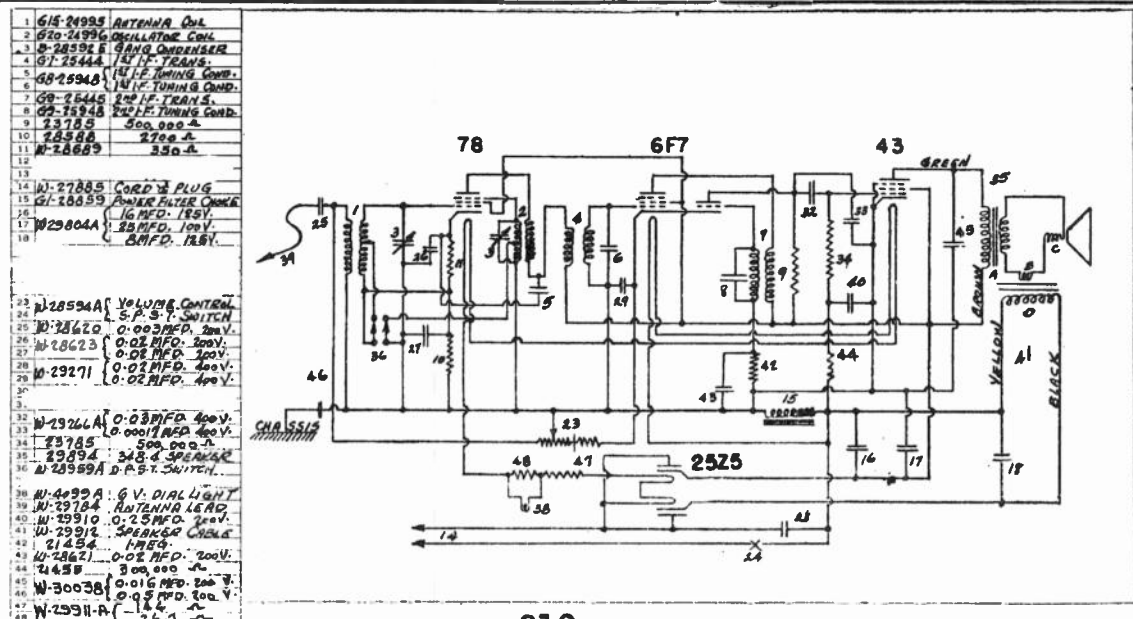


**MODELS 173, 173-5**

1	GT-2495	ANTENNA COIL
2	GT-2495	OSCILLATOR COIL
3	GT-2495	OSCILLATOR COIL
4	GT-2444	FIRST I.F. TRANS.
5	GT-2444	SECOND I.F. TRANS.
6	GT-2495	SHORT WAVE TRIMMER
7	C-3003 C	TUNING CONDENSER
8	GT-2594B	VARIABLE I.F. TRIMMER
9	GT-2594B	VARIABLE I.F. TRIMMER
10	GT-2594B	SHORT WAVE TRIMMER
11	GT-2594B	SHORT WAVE TRIMMER
12	N-2543B	0.02 MFD. 400V.
13	N-2543B	0.1 MFD. 500V.
14	N-2543B	0.1 MFD. 500V.
15	N-2543B	0.1 MFD. 500V.
16	N-2543B	0.1 MFD. 500V.
17	N-2543B	0.1 MFD. 500V.
18	N-2543B	0.06 MFD. 250V.
19	N-2543B	0.001 MFD. 500V.
20	GT-2594B	SHORT WAVE TRIMMER
21	N-2543B	0.003 MFD. 500V.
22	GT-2495	SHORT WAVE TRIMMER
23	N-2543B	16 MFD. 125 VOLTS
24	N-2543B	16 MFD. 100 VOLTS
25	N-2543B	0.1 MFD. 125 VOLTS
26	N-2543B	0.1 MFD. 500V.
27	N-2543B	500,000 Ω
28	N-2543B	350 Ω FLEX.
29	N-2543B	2700 Ω
30		
31	E-6577	3-MEG OHMS
32	N-2767A	8 MFD. 25 VOLTS
33	N-2767A	8 MFD. 25 VOLTS
34	Z-5603	150,000 Ω
35	Z-5725	500,000 Ω
36	N-2543B	10,000 MFD. 250V.
37	N-2543B	10,000 MFD. 250V.
38	N-2543B	10,000 MFD. 250V.
39	N-2543B	10,000 MFD. 250V.
40	N-2543B	10,000 MFD. 250V.
41	N-2543B	10,000 MFD. 250V.
42	N-2543B	10,000 MFD. 250V.
43	N-2543B	10,000 MFD. 250V.
44	N-2543B	10,000 MFD. 250V.
45	N-2543B	10,000 MFD. 250V.
46	N-2543B	10,000 MFD. 250V.
47	N-2543B	10,000 MFD. 250V.
48	N-2543B	10,000 MFD. 250V.
49	N-2543B	10,000 MFD. 250V.
50	N-2543B	10,000 MFD. 250V.
51	N-2543B	10,000 MFD. 250V.
52	N-2543B	10,000 MFD. 250V.
53	Z-5923	347-5 SPEAKER
54	GT-2442	FILTER CHOKE
55	GT-2442	FILTER CHOKE
56	GT-2442	FILTER CHOKE
57	N-2478A	0.25 MFD. 250 VOLT
58	R-1875	100,000 Ω
59	N-2721G	100 MFD. 250 VOLT
60	N-2543B	ANTENNA COIL
61	E-6577	3 MEG OHMS
62	N-2543B	75 Ω FLEX.
63	N-2445A	0.1 MFD. 500V.
64	Z-5588	2700 Ω
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78		

**MODEL 174**

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	Oscillator-Modulator	108	108	21	0	6.0
6F7	I. F. Amplifier and Detector	20	108	3.5		6.0
43	Output	104	110	0		25.
25Z5	Rectifier				110	25.



# Model 175

## Specifications

Model 175 is a fourteen tube dual band superheterodyne designed for operation from A.C. electric circuits. The intermediate frequency is 181.5 Kc.

## Tubes and Voltage Limits

The following are the tubes and voltages measured with the receiver in operating con-

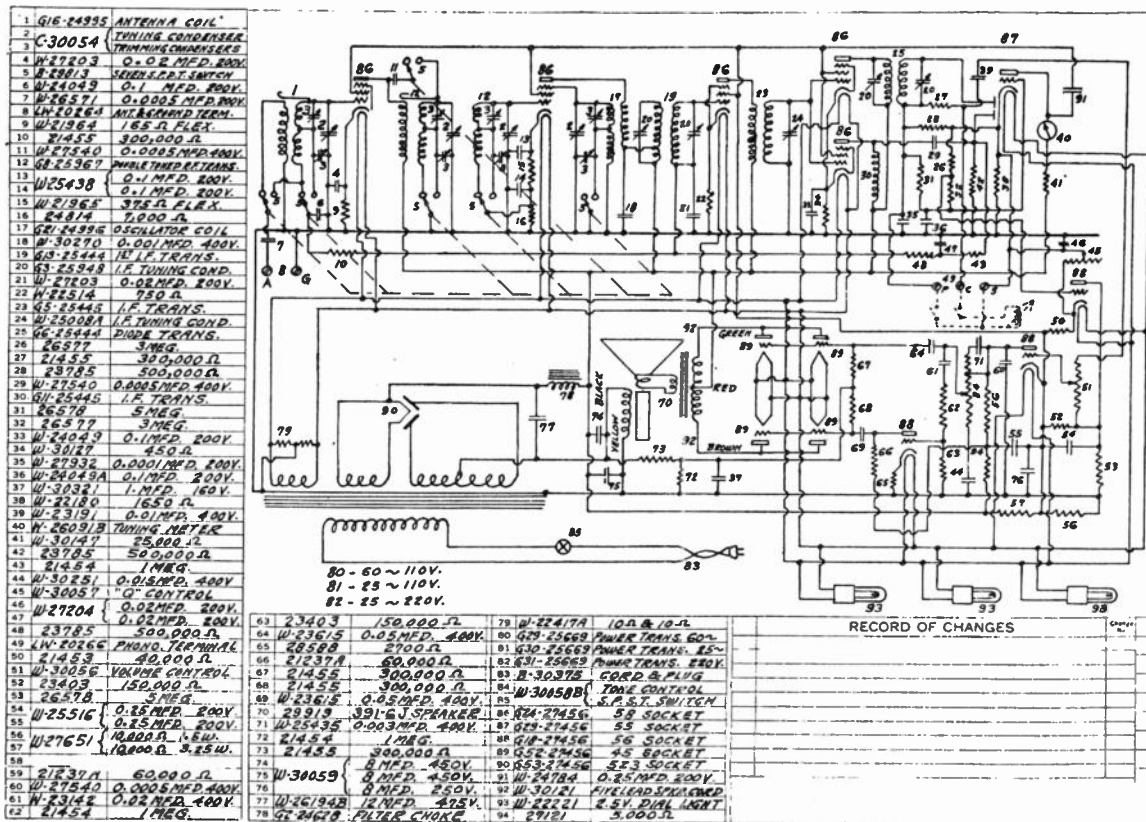
dition but with no signal to the antenna circuit, and with a line voltage of 117.5 volts (235 for 220 volt receivers). All voltages, except filament, are measured with 300 volt D.C. voltmeters (1000 ohms per volt) from tube contact to chassis. Filament voltages are measured with a low range A.C. voltmeter.

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
58	R. F. Amplifier	280	90	2.5	2.5	2.5
58	Oscillator Modulator	280	90	32.0	0	2.5
58	I. F. Amplifier	280	90	5.0	5.0	2.5
58	I. F. Amplifier	280	90	4.5	4.5	2.5
58	A. V. C.	280	90	4.5	4.5	2.5
55	Detector	80		15.5		2.5
56	"Q" Control Tube	70		0-22.0*		2.5
56	A. F. Amplifier	165		90.0		2.5
56	Phase Shifter	125		6.0		2.5
4-45	Output	280		0		2.5
5Z3	Rectifier	295				5.0

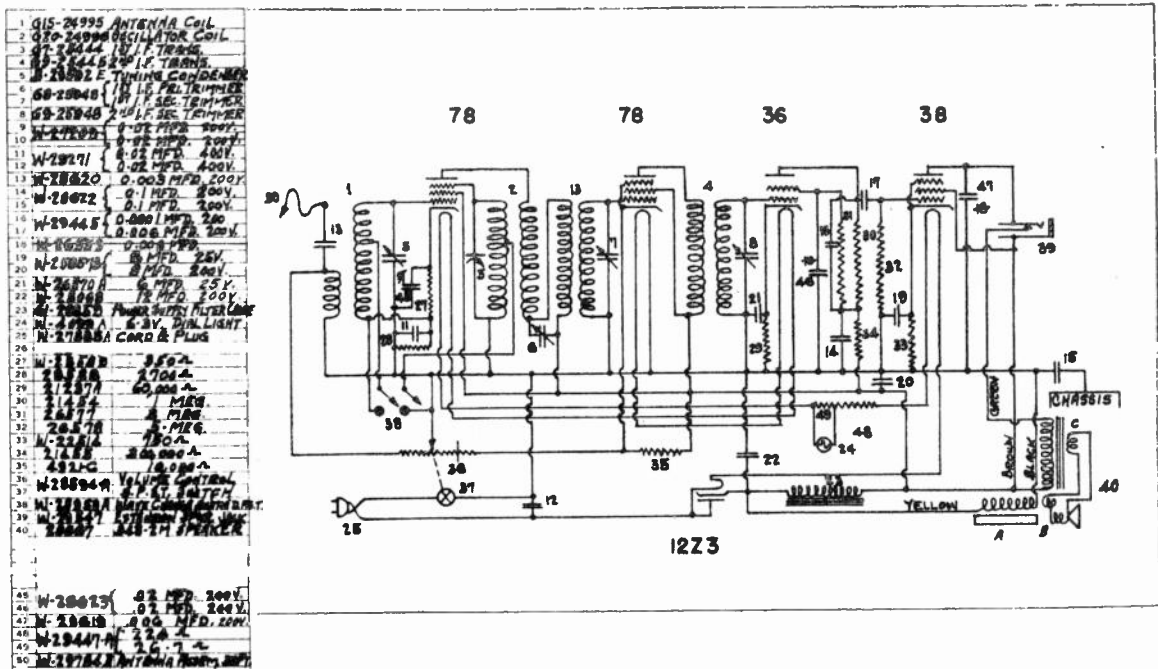
Voltage limits are plus or minus 10% of values given.

\*Voltage depends on position of "Q" control.

Chassis to "B-" 75 volts of which 55 volts is used for biasing output tubes.



# Model 176



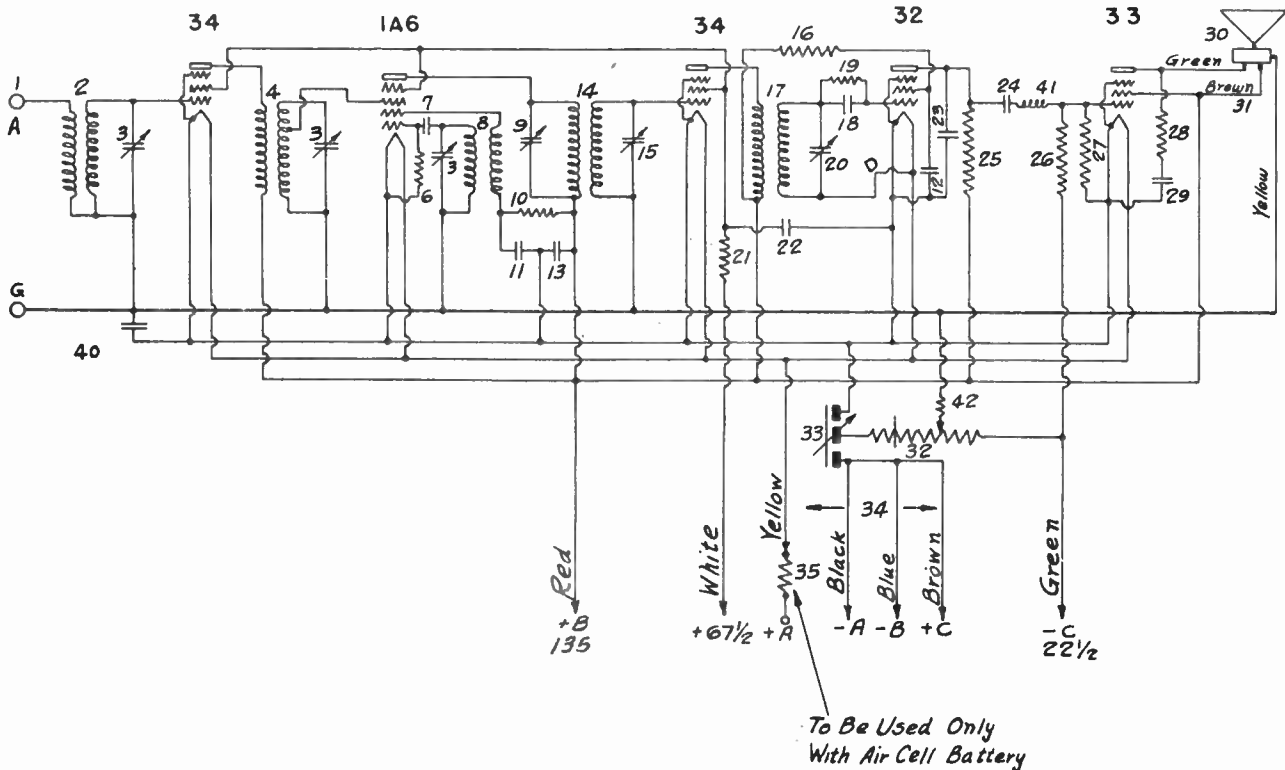
**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**

Crosley supplies a general replacement line of radio parts through its national distributor organization. Do not hesitate to write to the factory for information as to where these parts may be purchased.

# Model 178

Tube	Position and Use	Plate	Screen Grid	Voltages Grid	Filament
34	RF Amplifier	135	67.5	4.0	2.0
1A6	Oscillator	95	5		
	Modulator	135	67.5	4.0	2.0
34	IF Amplifier	135	67.5	4.0	2.0
32	Detector	50	15	0	2.0
33	Output	135	135	8.0	2.0

Voltage limits are plus or minus 10% of values given.



MODEL 178 WIRING DIAGRAM

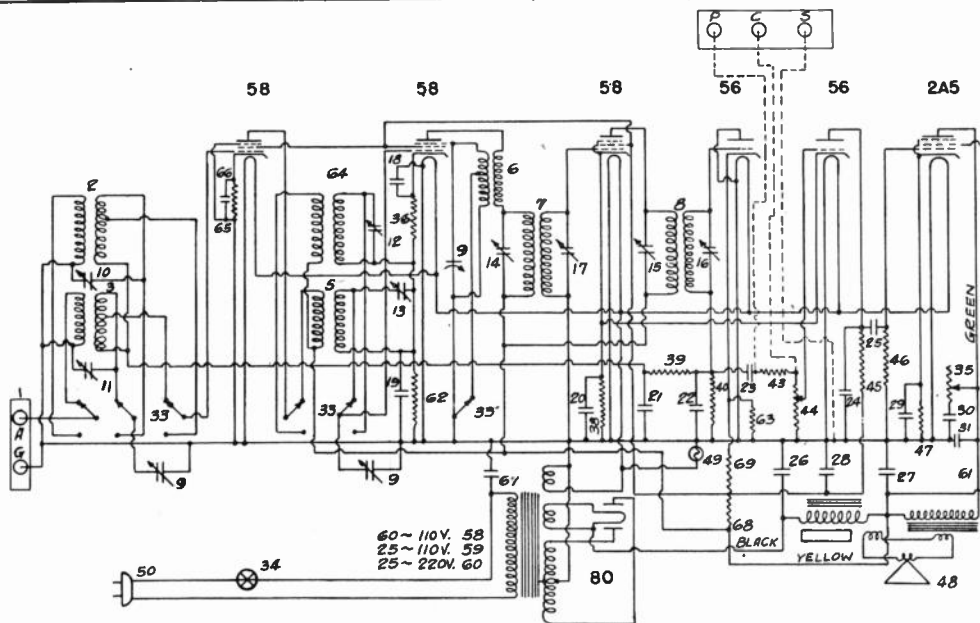
Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	LW20284	Ant. & Gr. Terminal .....	1	1	W26974B	Tube Shield .....	
1	G10-24905	Antenna Coil .....	2	1	B30542A	Battery Cable .....	34
1	G8-25968	R. F. Transformer Coil ...	4	1	W27933	Speaker Cable .....	31
1	G13-24996	Oscillator Coil .....	8	1	W27930B	Vol. Control & Switch.....	32-33
1	G7-25444	1st I. F. Transformer .....	14	1	G1-24234	R. F. Choke .....	41
1	G9-25445	2nd I. F. Transformer .....	17	2	G1-23472	Knobs .....	
4	W25025A	Coil Shield (1 1/2" high) ...		1	B27818	Bottom .....	
1	W25024A	Coil Shield (1 1/2" high) ...					
5	W25200	Coil Socket .....					
5	W24360	Insulating Washer .....					
5	W21541B	Coil Ret'ng Ring (.25 doz.)					
1	B28974	Tuning Condenser gang .....	3	2	W5382	0.00025 Mfd. Cond. ....	7-18
1	G11-25050	Dial Drive Assembly .....		1	W25438	0.1-0.1 Mfd. 200 V. Cond.	11-12
1	G2-25948	I. F. Tuning Condenser ...	9	1	W24784	0.25 Mfd. 200 V. Cond. ....	13
1	W27548	I. F. Tuning Cond. Blade	15	1	W30321	1.0 Mfd. 160 V. Cond. ....	22
1	W25584	Mica Insulator .....		1	W23537	0.001-0.03 Mfd. 400 V. Cond.	23-24
1	R80	Screw .....		1	W28559	0.006 Mfd. 200 V. Cond. ....	29
1	W28069B	Adjusting Nut .....		1	W30366	0.5 Mfd. 160 V. Cond. ....	40
1	W24865	Metal Washer (Round) .....					
1	W25450B	Insulating Washer (Small)					
1	W25007B	Insulating Washer (Small)					
1	W25446	Bakelite Washer (Large)..		2	W21875	100,000 Ohm Resistor .....	6-42
1	O4	Washer .....		1	W22196	20,000 Ohm Resistor .....	10
1	M20	Rivet .....		2	W21454	1 Megohm Resistor .....	16-26
1	G13-25948	I. F. Tuning Condenser ...	20	2	W26577	3 Megohm Resistor .....	19-27
				1	W21482	1,100 Ohm Resistor .....	21
				1	W23403	150,000 Ohm Resistor .....	25
				1	W24814	7,000 Ohm Resistor .....	28
				1	G2-23300	53 Ohm (Air Cell) Resistor	35
1	W26973A	Tube Shield Base .....		1	336-3B	Speaker .....	

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

# Model 179

Tube	Position and Use	Plate	Screen Grid	Cathode	Supp. Grid	Filament
58	RF Amplifier	260	125	3	3	2.5
58	Oscillator-modulator	260	125	34	0	2.5
58	IF Amplifier	260	125	4	4	2.5
56	Diode detector	0		0		2.5
56	AF Amplifier	50		4		2.5
2A5	Output	250	260	16.5		2.5
80	Rectifier	355				

Voltage limits are plus or minus 10% of values given.



MODEL 179 WIRING DIAGRAM

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G7-24995	Low F Antenna Coil.....	2	1	B31335A	Tube & Cond. Shield.....	
1	G14-24995	Hi F Antenna Coil.....	3	1	h21491A	Cable & Plug.....	50
2	G1-29699	Ant. R. F. Coil Trimmer Cond.....	10-11 12-13	1	W25504B	Tone Control & Switch.....	34-35
1	G9-25968	Low F. R. F. Coil.....	4	1	W25066B	Level Control (volume).....	44
1	G5-25968	Hi F. R. F. Coil.....	5	4	G1-23472	Knob .....	
1	G21-24996	Oscillator Coil.....	6	1	W31157A	Knob (Moderne).....	
1	G1-25444	1st I. F. Trans. Coil.....	7	3	W31583A	Knob (Moderne).....	
1	G1-25948	1st I. F. Prim. 2nd I. F. Prim. 2nd I. F. Sec. Trimmer Cond. Assem.....	14-15 16	1	W31443	Escutcheon.....	
1	W25008A	1st I. F. Sec. Trimmer Cond. Blade.....	17	3	S27	Escutch. Screws....(.25 doz.)	
1	R80	Screw .....		1	W31000	Speaker Cord.....	61
1	W26069B	Adjusting Nut.....				<b>POWER TRANSFORMERS</b>	
1	W24865	Metal Washer (round).....		1	G17-23559	Power Trans. 60 Cy. 110 V.	58
1	W25440	Bakelite Washer (large)....		1	G18-23559	Power Trans. 25 Cy. 110 V.	59
1	W25450B	Insulating Washer (small)		1	G10-23559	Power Trans. 25-60 Cy. 220 V.....	60
1	W25007	Insulating Washer (small)				<b>FILTER &amp; BYPASS CONDENSERS</b>	
1	M20	Rivet .....		2	W27204	.02-.02 Mfd. 200 Volt .....	18-19
1	W25584	Mica Insulator .....		1	W25069A	.00017-.03 Mfd. 400 Volt .....	20-21
1	G8-25444	2nd I. F. Trans. Coil.....	8	1	W25537A	.001-.03 Mfd. 400 Volt .....	22-23
7	W25200	Coil Sockets.....		1	W26194B	12. Mfd. 475 Volt .....	24 25
5	W25024A	Coil Shield (1 1/2" high).....		1	W29150A	7.-8.-8. Mfd. 450-400-25 Volt .....	27-28
3	W25025A	Coil Shield (1 1/2" high).....		1	W25517A	.05-.008 Mfd. 400 Volt .....	29
7	W21541B	Retainer Ring.....(.25 doz.)		1	W27203	.02 Mfd. 200 Volt .....	30-31
4	W24860	Square Hole Ins. Washer		1	W30805	.01 Mfd. 400 Volt .....	32
3	W26501	Semi-Cir. Hole Ins. Wash.		1		<b>Resistors</b>	
1	C30704	Var. Tun. Cond Gang.....	9	3	W25937	275 Ohms .....	36-38
1	G3-27134	Dial Light Socket Assem.		1	W26577	3 Megohm .....	39
1	G25-25751	Dial Assembly.....		1	W21454	1 Megohm .....	40
1	B29787	Dial Cover (celluloid).....		2	W23785	500000 Ohm .....	43-46
1	B30569B	G P. D. T. Switch.....	33	1	W23403	150000 Ohm .....	45
1	LW-20264	Ant.-Gnd. Terminal.....	1	1	W25521	450 Ohm .....	47
				1	W31094	4500 Ohm .....	62
				1	W30127	450 Ohm .....	63
3	W26010	Tube Shield Base.....		1	W28471	8500-2500 Ohms (Canddem)	68-69
3	B26009C	Tube Shield.....		1	C30719A	Chassis Bottom .....	
<b>312-4 MAGNAVOX SPEAKER SPEC. 939</b>							
1	27307	Cone & Voice Coil Assem.		1	29190	Transformer .....	
1	29197	Field Coil .....					

# Model 180

## Specifications

Model 180 is a ten tube superheterodyne designed for operation from AC electric circuits. It uses an intermediate frequency of 181.5 kc.

### Tubes and Voltage Limits

The following are the tubes and voltages meas-

ured from tube contact to chassis with the receiver in operating condition but with no signal to the antenna circuit, and with a line voltage of 117.5 volts (235 for 220 volt receivers). All voltages, except filament, are measured with a 500 volt (1000 ohms per volt) d. c. voltmeter. Filament voltages are measured with a low range a. c. voltmeter.

Tube	Position and Use	Plate	Screen Grid	Voltages		Filament
				Cathode		
58	Modulator	270	112	5.5		2.5
58	RF Amplifier	270	112	3.5		2.5
56	Oscillator	50		5.5		2.5
58	IF Amplifier	270	112	3.7		2.5
56	Diode	0		0		2.5
56	AF Amplifier	50		3.0		2.5
56	Phase Inverter	50		3.0		2.5
Two 2A5	Output	260	270	17.5		2.5
80	Rectifier	360				4.8

All voltage limits are plus or minus 10% of values given.

## PARTS LIST—MODEL 180

INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used if article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	LW20264	Antenna & Ground Terminal	1	3	W31585B	Knob (Moderne).....	
1	G14-24995	Antenna Coil (High Freq.)	2	1	W31157B	Knob (Moderne).....	
1	G7-24995	Antenna Coil (Low Freq. Broadcast)	3	1	C23613B	Bottom .....	
1	G5-25068	Interstage Coil (H. F.).....	7	1	C28477D	Back .....	
1	G9-25968	Interstage Coil (Low F. Broad.)	8	1	C20200G	Tube & Condenser Shield.....	
1	G18-24996	Oscillator Coil .....	9	1	W31942	Speaker Cable.....	69
1	G5-24085	1st I. F. Transformer.....	18	1	G33-25669	POWER TRANSFORMER	
1	G10-24085	Diode Feeding Transformer	19	1	G34-25669	Power Trans. 110 V. 60 Cy.	51
1	G3-31267	Coil Shield Assembly.....		1	G35-25669	Power Trans. 110 V. 25 Cy.	52
3	W25200	Coil Sockets.....				Power Trans. 220 V. 25 to 60 Cy.	53
2	W25024A	Coil Shield (1 1/2" high).....				FILTER & BY PASS	
1	W25025A	Coil Shield (1 1/2" high).....		1	W25438	CONDENSERS	
5	W21541B	Retainer Rings (.25 doz.)....		1	W27932	0.1-0.1 Mfd. 200 Volt.....	13-14
3	W26891	Insulating Washer (Semi-Cir. Hole)		1	W28559	0.0001 Mfd. 200 Volt.....	20
2	W24360	Insulating Washer (Square Hole)		1	W28559	0.006 Mfd. 200 Volt.....	23
1	B30569C	6 P. D. T. Switch.....	4	2	W23615	0.05 Mfd. 400 Volt.....	31-35
1	C31356	Var. Cond. Gang.....	5-6	1	W20571	0.005 Mfd. 200 Volt.....	43
1	G25-25751	Dial Drive Assembly.....		3	W27203	0.02 Mfd. 200 Volt.....	66
1	G3-27134	Dial Light Bracket.....		1	W31052	0.05-0.004 Mfd. 400 Volt.....	74-75
1	W28878A	Condenser Shield Assembly		1	B30059A	8-.8-.8. Mfd. 250, 450, 450 V.	45-46
1	G15-25948	I. F. Tuning Condenser.....	76				47
1	G3-25948	I. F. Tuning Condenser.....	17	1	W26194B	12. Mfd. 475 Volt.....	49
				1	W23403	RESISTORS	
				2	W23937	150000 Ohm .....	71
				1	W21965	275 Ohm .....	12-70
				1	W21454	375 Ohm .....	15
				4	W21455	1 Megohm .....	21
						300000 Ohm .....	22-23
							36-37
6	W26010	Tube Shield Base.....		1	W26577	3 Megohm .....	24
3	B26009C	Tube Shield (58 tube).....		1	W28589	350 Ohm .....	25
2	W26231B	Tube Shield (56 tube).....		1	W31361	11000-7000 Ohm .....	28-29
1	B21491B	Cord & Plug.....	54	1	W21453	40000 Ohm .....	33
1	W25866B	Volume Control.....	26	1	W22873	220 Ohm .....	34
1	W25594B	Tone Control & Switch.....	41-42	1	W31093	2700 Ohm .....	37
1	G1-24628	Filter Choke.....	48	1	W21237A	60000 Ohm .....	38
3	W22300	Knob .....		1	W4921C	10000 Ohm .....	65
1	W24556	Knob .....		1	W26578	5 Megohm .....	68

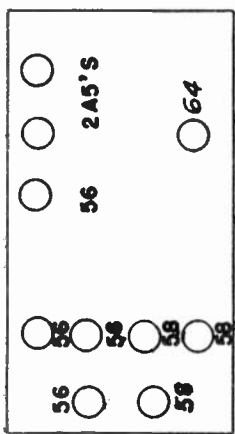
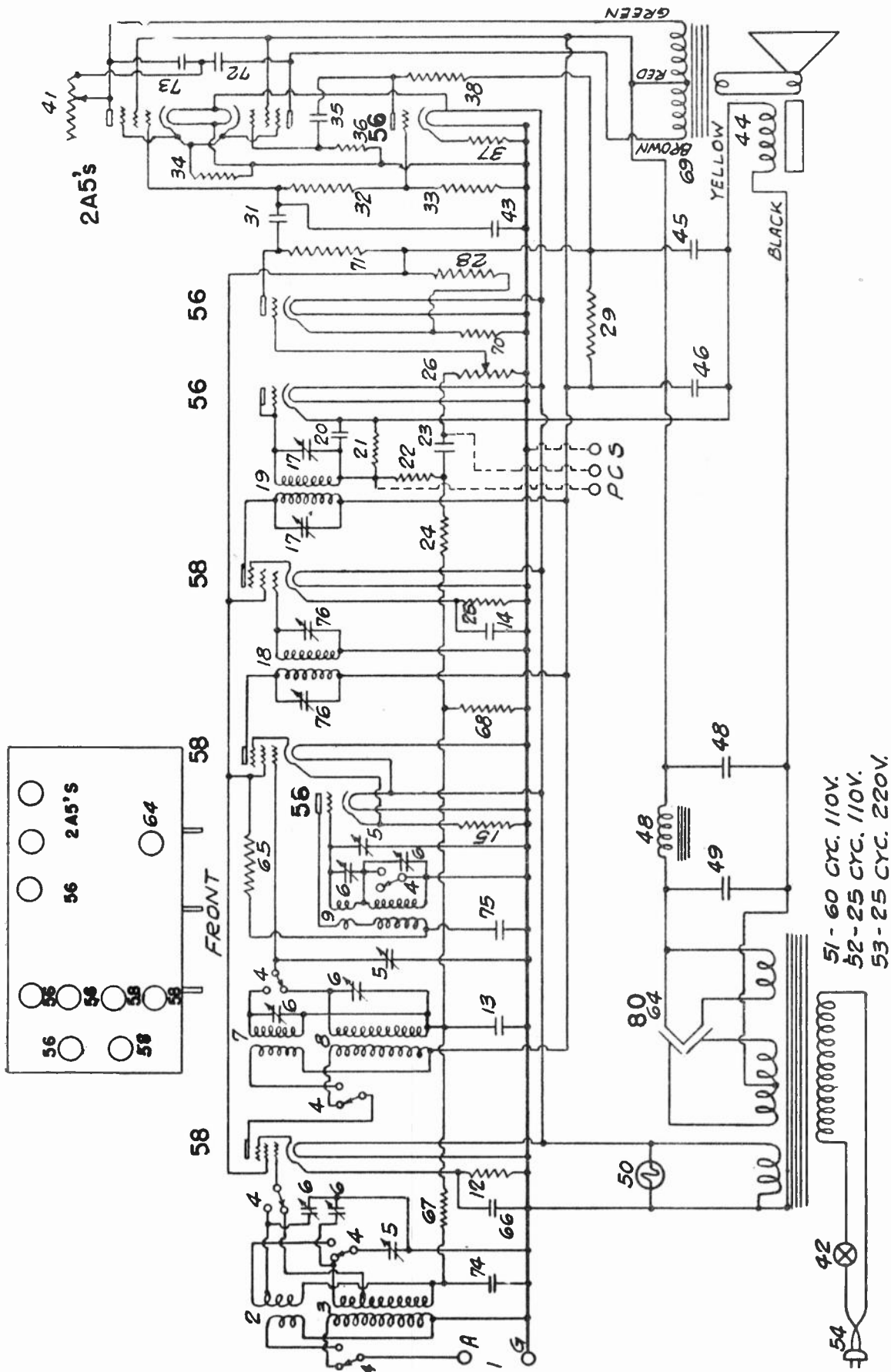
  

SPEAKER PARTS (8" Speaker)			
	Magnavox	Rola	
	317-4M	317-4R	
	Spec. 1104		
1	27307	31090	Cone & Voice Coil Assembly.....
1	27797	31091	Field Coil .....
1	27798	31092	Transformer .....

SPEAKER PARTS (10" Speaker)			
	Magnavox	Rola	
	317-5M	317-5R	
	Spec. 985		
1	27661	31088	Cone & Voice Coil Assembly.....
1	27797	31087	Field Coil .....
1	29658	31088	Transformer .....

MODEL 180



MODEL 180 WIRING DIAGRAM

# Model 181

## Specifications

Model 181 is a six tube superheterodyne designed for operation from AC electric circuits. The intermediate frequency used is 456 kc.

## Tubes and Voltage Limits

The following are the tubes and voltages meas-

ured from tube contact to chassis with the receiver in operating condition but with no signal to the antenna circuit, and with a line voltage of 117.5 volts (235 volts for 220 volt receivers). All voltages, except filament, are measured with a 500 volt (1000 ohms per volt) DC voltmeter. Filament voltages are measured with a low range AC voltmeter.

Tube	Position and Use	Plate	Screen Grid	Voltages		
				Cathode	Supp. Grid	Filament
2A7	Oscillator	165		-9.5		
	Modulator	240	110	2.5		2.45
58	IF Amplifier	236	110	0		2.45
56	Diode Detector and AVC					2.45
58	AF Amplifier	52	27	0		2.45
2A5	Output	222	240	0		2.45
80	Rectifier	330				4.8

Chassis to B- 93 volts.

Bias voltages are obtained by a resistor divider shunting the speaker field which is in B- circuit, from rectifier to chassis.

IF Amplifier bias (Grid to B-) 28 volts.

AF Amplifier bias (Grid to B-) 12 volts.

Output bias (Grid to B-) 18 volts.

## PARTS LIST—MODEL 181

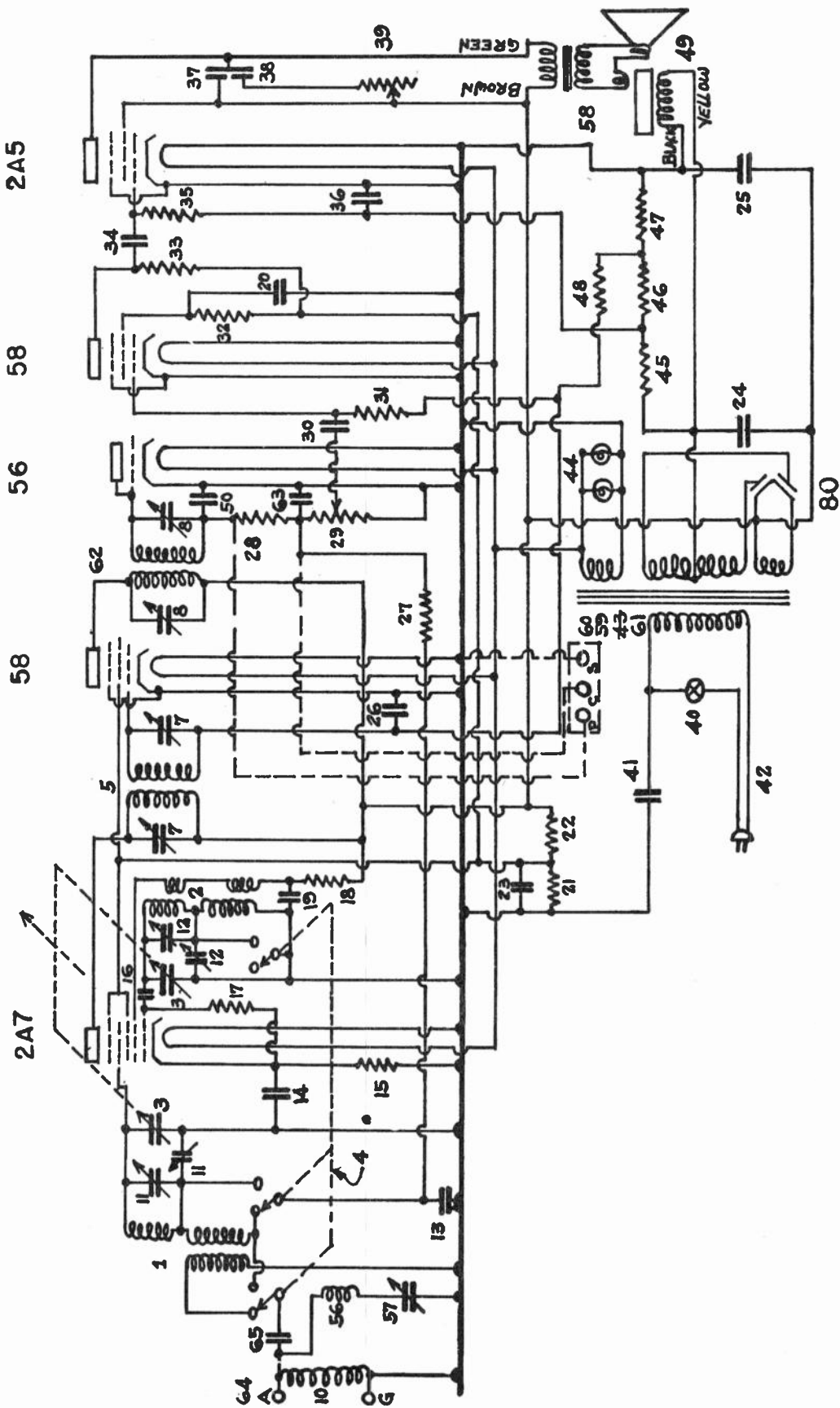
**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G23-24995	Antenna Coil.....	1	2	W31225	Knobs (large).....	
1	G28-24996	Oscillator Coil.....	2	2	W31224	Knobs (small).....	
2	G7-29099	Ant. and Oscillator Coil, Trimmer Condenser.....	11, 12	2	W30463	Escutcheons.....	
1	G2-30795	First I. F. Transformer.....	5	6	S-27	Escutcheon Screws.....	
1	G2-30795	Second I. F. Transformer.....	62	1	W31007	4 Lead Speaker Cord.....	58
2	W30027	Coil Shield.....		<b>POWER TRANSFORMERS</b>			
2	W30802	Coil Shield.....		1	G4-30745	Power Trans. 110 V. 60 Cy.	61
4	W25200	Coil Socket.....		1	G2-30745	Power Trans. 110 V. 25 Cy.	59
4	W30026	Retainer Ring.....		1	G3-30745	Power Trans. 220 V.....	60
2	W30845	Insulating Washer.....		<b>FILTER &amp; BY PASS CONDENSERS</b>			
2	W30877	Insulating Washer.....		1	W30325	0.003 Mfd. 200 Volt.....	9
1	W30744A	No. 3 P. D. T. Change Sw.	4	1	W27204	.02-.02 Mfd. 200 Volt.....	18, 14
1	B30769A	Variable Tuning Condens- er Assm.....	3	1	W30741	.00025 Mfd. 1000 Volt.....	16
1	G4-27812	Dial Light Socket.....		1	W25474	1-1 Mfd. 400 Volt.....	19, 20
1	G9-25050	Dial Assembly.....		1	W30059A	8-.8-.8. Mfd. 250 V.-450 V.- 450 V.....	23, 24
1	G1-30070	V. C. Dial Assembly.....		1	W24040	.1 Mfd. 200 Volt.....	25
2	G14-25948	I. F. Condenser.....	7, 8	2	W27203	.02 Mfd. 200 Volt.....	30, 34
1	W25008	Condenser Blade.....	57	1	W30321	1. Mfd. 160 Volt.....	36
1	R80	Screw.....		1	W25517	.008-.05 Mfd. 400 Volt.....	37, 38
1	W20069B	Adjusting Nut.....		1	W30805	.01 Mfd. 400 Volt.....	41
1	W24805	Metal Washer.....		2	W27932	.0001 Mfd. 200 Volt.....	50, 63
1	W25450B	Insulating Washer.....		1	W20571	.05 Mfd. 200 Volt.....	65
1	W25007	Insulating Washer.....		<b>RESISTORS</b>			
1	W25446	Bakelite Washer.....		1	W25937	275 Ohms.....	15
1	O-4	Flat Washer.....		3	W21875	100000 Ohms.....	17, 33
1	M-20	Rivet.....		1	W5370A	20000 Ohms.....	46
1	G1-26719	A. G. Terminal.....	10	1	W25970	15000-10000 Ohms.....	18
2	G5-24234	R. F. Choke Assm.....	56.64	1	W20577	3 Megohm.....	21, 22
				1	W21237A	60000 Ohms.....	27
				1	W21454	1 Megohm.....	31
4	W27981	Tube Shield Base.....		4	W23785	500000 Ohms.....	32, 35
1	W20231B	Tube Shield.....		1	W22196	20000 Ohms.....	45, 48
1	W27328A	Tube Shield.....					47
2	B20009C	Tube Shield.....		<b>SPEAKER PARTS</b>			
1	B30875	AC Cord and Plug.....	42	Magnavox 354-4M			
1	W30836	Tone Control and Switch..	39, 40	Spec. 952			
1	W30610C	Level Control (volume)....	29	27307			
				27455			
				27461			
				G1-31184		Cone Assem.....	
				W31445		Field Coll.....	
				G8-24628		Transformer.....	



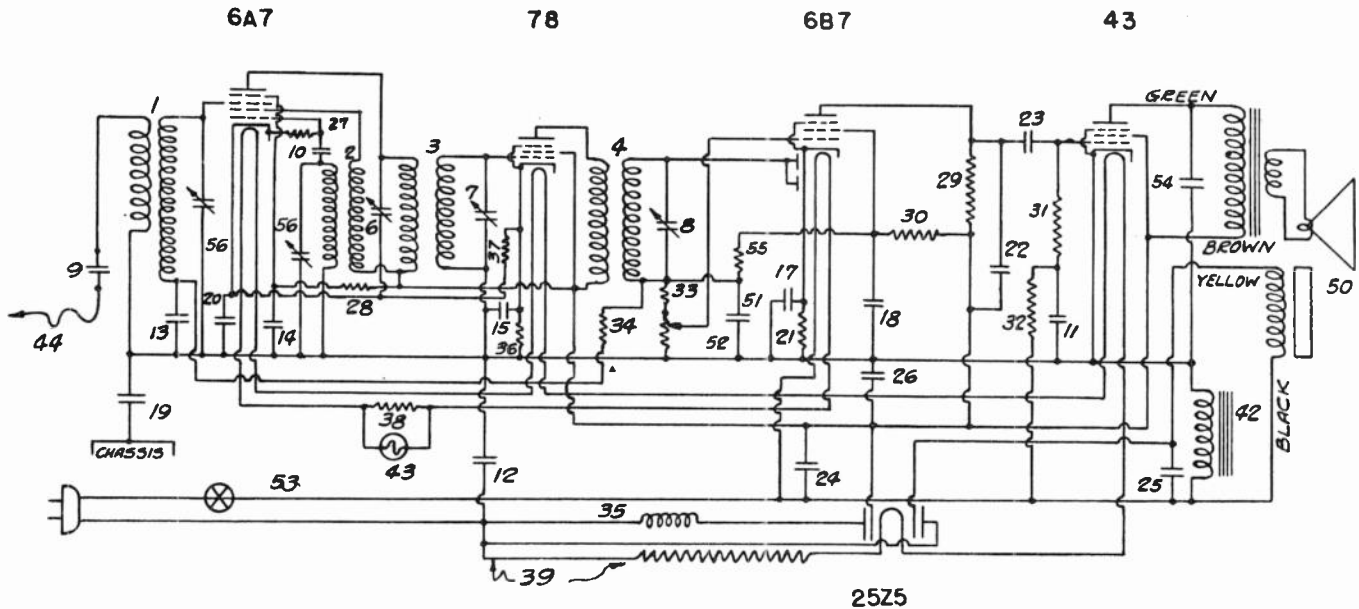
MODEL 181



MODEL 181 WIRING DIAGRAM

# Model 182

Tube	Position and Use	Plate	Screen Grid	Voltages			Fila-ment
				Control Grid	Cathode	Supp. Grid	
6A7	Oscillator	120		-8			
	Modulator	120	50		3		6.5
78	IF Amplifier	120	120		2.5	2.5	6.5
6B7	Diode and AF Amplifier	20	30		3	3	6.5
43	Output	115	120	*-20	0		25.1
25Z5	Rectifier				120		25.1



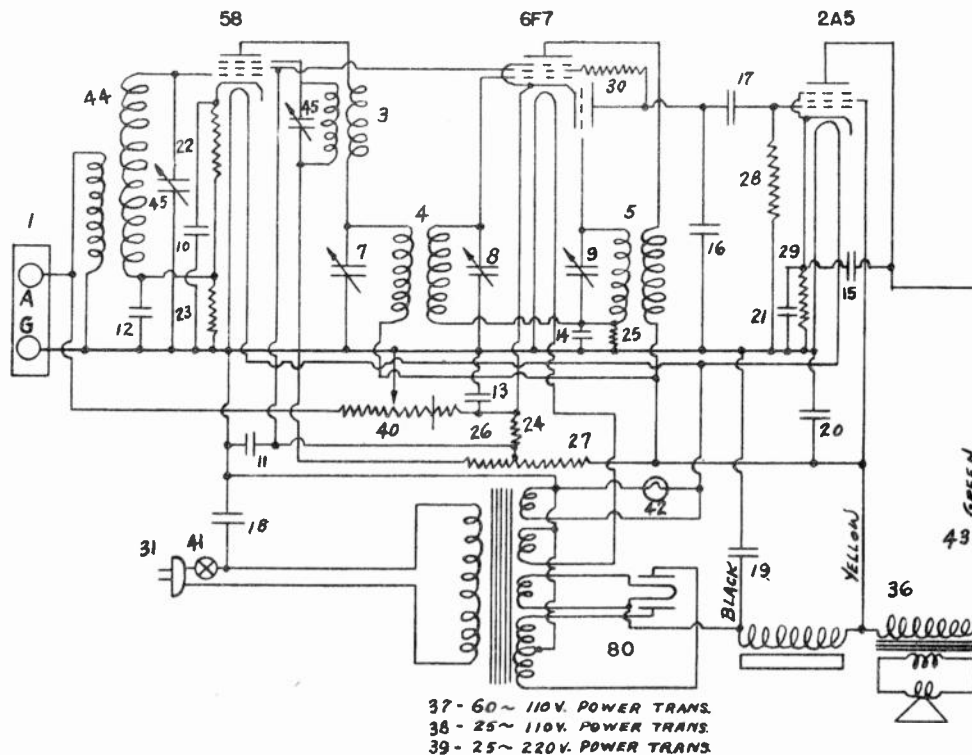
MODEL 182 WIRING DIAGRAM

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G24-24995	Antenna Coil .....	1	1	W24784	0.25 Mfd. 200 Volt .....	11
1	G29-24996	Oscillator Coil .....	2	1	W30324	0.02-0.02 Mfd. 400 Volt .....	12-13
1	B31582A	Tuning Condenser Gang ..	56	1	W27204	0.02-0.02 Mfd. 200 Volt .....	14-15
1	W20537B	Condenser Cover .....		1	W25438	0.1-0.1 Mfd. 200 Volt .....	18-19
1	G2-30795	1st I. F. Transformer .....	3	1	W27203	0.02 Mfd. 200 Volt .....	20
1	G14-25948	I. F. Trimmer Condensers	6-7	1	W30322	0.00017-0.006 Mfd. 200 Volt	22-23
1	G10-25445	2nd I. F. Transformer .....	4	1	W7847A	0.0001 Mfd .....	51
1	Q9-25048	Trimmer Condenser .....	8	1	W31219	0.023 Mfd. 200 Volt .....	54
3	W25025A	Coil Shield .....		1	W26870A	6. Mfd. 25 Volt .....	17
1	W30802	Coil Shield .....		1	W30962	25.-8. Mfd. 125 Volt .....	24-25
4	W25200A	Coil Socket .....		1	W30963	16. Mfd. 110 Volt .....	26
1	W30026	Retainer Ring .....				<b>RESISTORS</b>	
3	W21541B	Retainer Ring .....		1	W27503	1400 Ohms .....	21
1	W30877A	Insulating Washer .....		2	W21237A	60000 Ohms .....	27-33
3	W24390	Insulating Washer .....		1	W21453	40000 Ohms .....	28
1	W31204	Level Control & Switch .....	52-53	1	W23403	150000 Ohms .....	29
1	G2-27812	Dial Light Bracket Assem.		2	W23783	500000 Ohms .....	30-31
				1	W21455	300000 Ohms .....	32
				1	W21454	1 Megohm .....	34
2	W31210	Tube Shield Ring .....		1	W21964	165 Ohm .....	36
2	W31212	Tube Shield Half .....		1	W25357	75 Ohm .....	37
2	W31213	Tube Shield Half (with slot) .....		1	W30539	26.7 Ohm .....	38
4	W31211	Tube Shield Clip .....		1	W28577	3 Megohm .....	55
1	B30957B	120 Ohm Resistance Cable (A. C. Cord & Plug)...	39			<b>SPEAKER PARTS</b>	
1	W29764B	Antenna Roll .....	44	1	G1-29520	Cone & Voice Coil Assem.	
1	G1-28859	Filter Choke .....	42	1	31214	Field Coil .....	
1	G1-24234	A. F. Choke .....	35	1	G6-29535	Transformer .....	
		<b>FILTER &amp; BY-PASS CONDENSERS</b>			W28735	Black Knob .....	
1	W30325	0.003 Mfd. 200 Volt .....	9		W28736	Green Knob .....	
1	W26571	0.0005 Mfd. 400 Volt .....	10		W30028	Brown Knob .....	
					W31500	Wooden Knob .....	
					W31812	Dial Pointer .....	
					W28608	Bottom .....	

# Model 184

Tube	Position	Plate	Screen Grid	Cathode	Supp. Grid.	Filament
58	Oscillator-modulator	165	82	22	0	2.5
6F7	I. F. & Detector	165	82	2	0	2.5
2A5	Output	158	165	10		2.5
80	Rectifier	295				4.9



MODEL 184 WIRING DIAGRAM

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	•	Qty.	Part No.	Description	•
1	W20294	Ant.-Grd. Terminal	1	1	W27328A	Tube Shield (6F7)	
1	G28-24895	Antenna Coil	44	1	B24009C	Tube Shield (58)	
1	G12-24896	Oscillator Coil	3	1	B21491B	A. C. Cable & Plug	31
1	G7-25444	1st I. F. Transformer	4	1	W31009	Speaker Cable	43
1	G9-25445	2nd I. F. Transformer	5	1	W28573B	Volume Control & Switch..	40-41
1	W25024	Coil Shield (Large)		2	G1-23472	Knobs	
3	W25025	Coil Shield (Small)		1	G1-28500	Power Trans. 110 V. 80 Cy.	37
4	W25200	Coil Socket		1	G2-28500	Power Trans. 110 V. 25 Cy.	38
4	W24801	Insulating Washer		1	G3-28500	Power Transformer 220 V.	39
4	W21541B	Coil Retaining Ring					
1	B31784	Variable Condenser Gang...					
1	G15-25050	Dial Assem.					
1	G2-25048	1st I. F. Prim. Trim. Cond.	7				
1	G10-25948	2nd I. F. Prim. Trim. Cond.	9				
1	W27548	1st I. F. Sec. Trim. Cond. (Adjustable Blade Only)	8				
1	W25584	Mica					
1	R80	Screw					
1	W26069B	Adjusting Nut					
1	W24865	Metal Washer					
1	W25450B	Insulating Washer					
1	W25007B	Insulating Washer					
1	W26446	Bakelite Washer (Large)					
1	O4	Washer					
1	M20	Rivet					
2	W29010	Tube Shield Base					

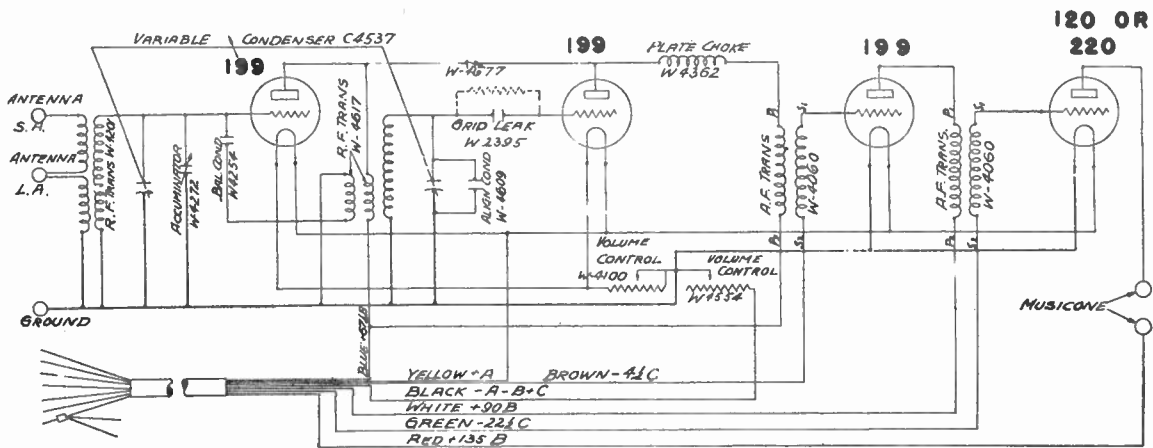
**FILTER & BY PASS CONDENSERS**

**RESISTORS**

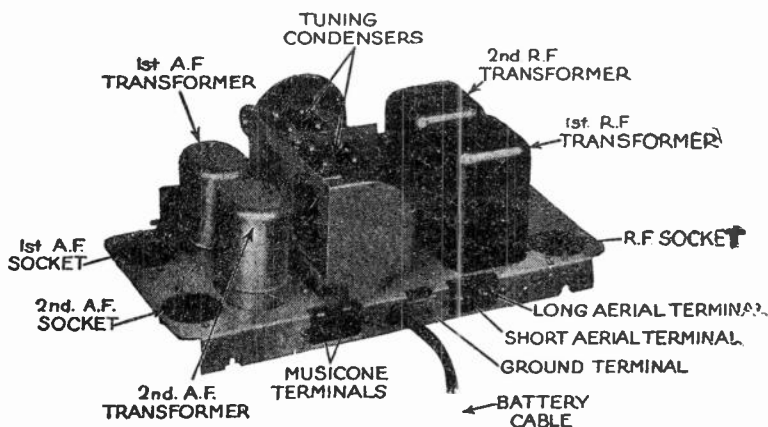
**SPEAKER PARTS \* 36**

	<b>Magnavox</b> 324-2M Spec. 1300 28761 28763 28764	<b>Jensen</b> 342-2J Spec. 2617 29434 29436 29437	
1			Cone & Voice Coil Assem.
1			Field Coil
1			Transformer

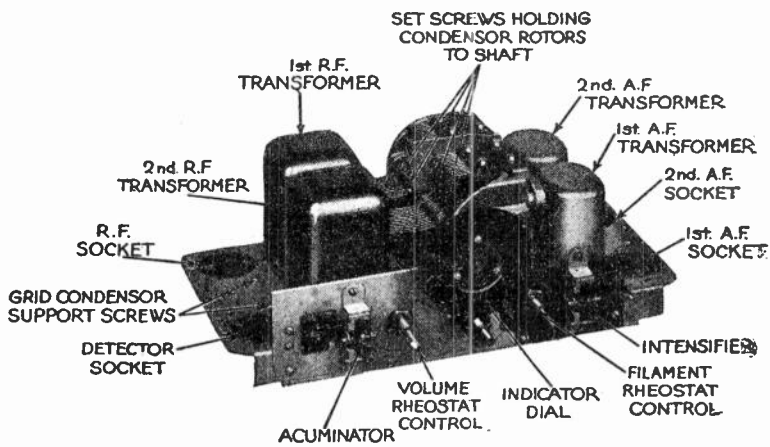
# MODEL 401



CIRCUIT, MODEL 401

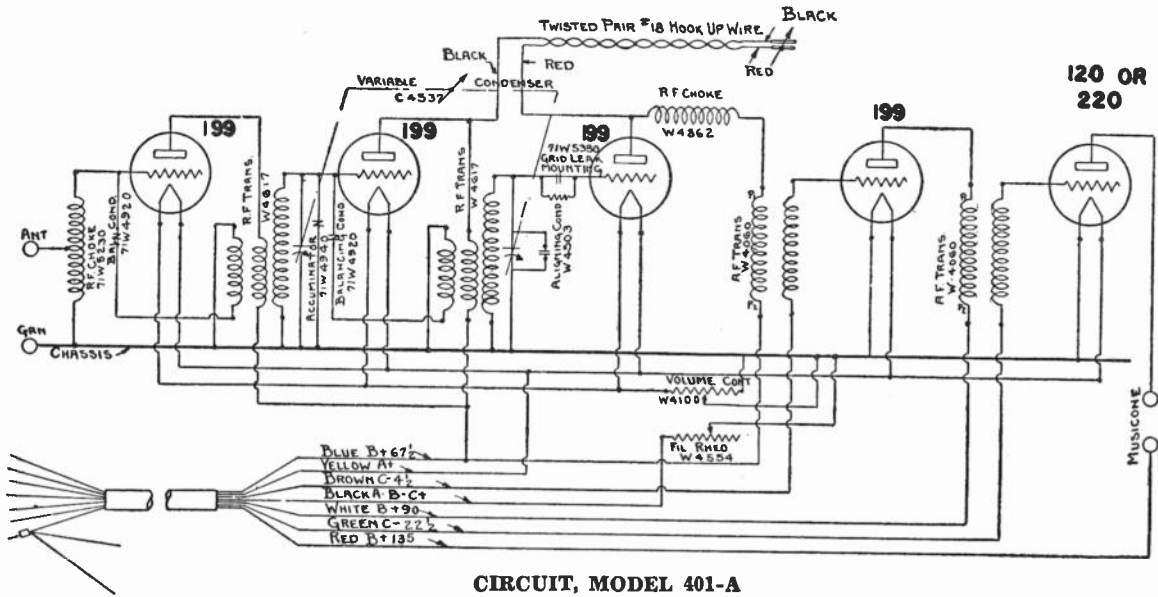


REAR VIEW, MODEL 401 CHASSIS

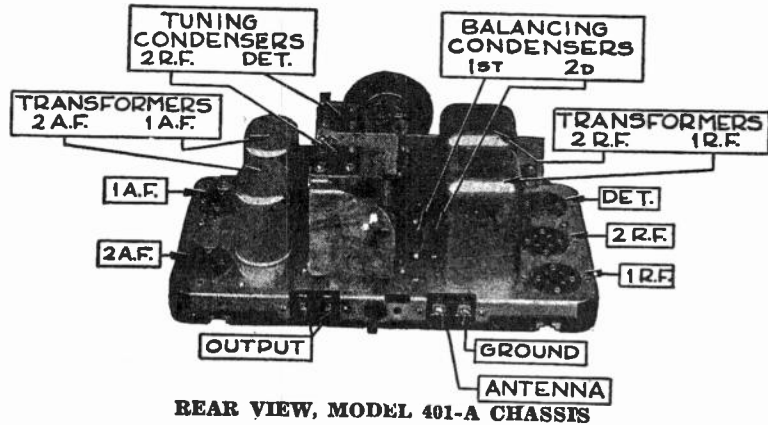


FRONT VIEW, MODEL 401 CHASSIS

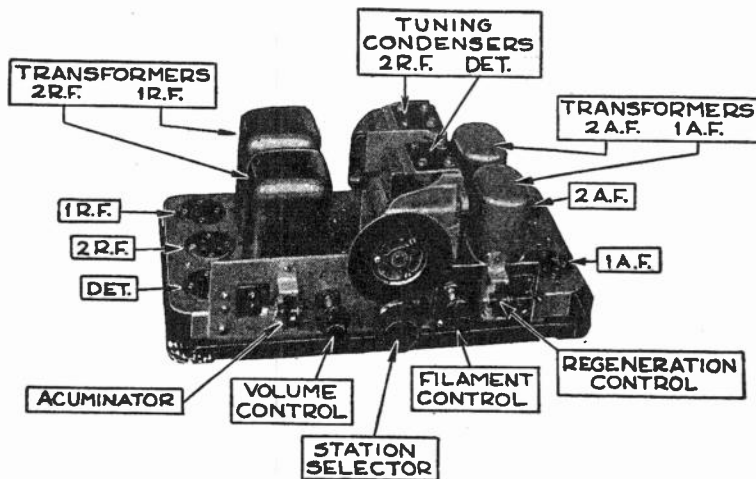
# MODEL 401A



CIRCUIT, MODEL 401-A



REAR VIEW, MODEL 401-A CHASSIS



FRONT VIEW, MODEL 401-A CHASSIS

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G
1A6	Oscillator-Modulator	2.0	135	63	0
34	I-F Amplifier	2.0	135	63	0
1A6	Detector & A-F Amp.	2.0	40	25	0
33	Output	2.0	130	135	0

"A" Battery Drain Approximately .44 Ampere.

"B" Battery Drain Approximately 20 Mils.

Power Output Approximately .7 Watt.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground wire (BLACK) at the rear of the chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the tuning condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condenser for the 2nd I-F transformer, for maximum output.

(e) Adjust both trimmer condensers, located on top of the 1st I-F transformer, for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna wire (BLUE) at the rear of the chassis.

(b) Set the signal generator to 1400 kilocycles.

(c) Place the chassis in the cabinet and adjust the station selector to 140 on the dial.

(d) Remove the chassis from the cabinet and adjust the "OSC" trimmer, 12Y, located on the tuning condenser, for maximum output.

(e) Adjust the "ANT" trimmer, 12Z, located on the tuning condenser, for maximum output.

(f) Tune-in the generator signal with the station selector for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G27-32000	Ant Coil	13	C -36726C	Battery Cable Assem.
	W -30802A	Coil Shield	14	-21875	Resistor 100,000 Ohm ¼ W.
	W -30026A	Retaining Ring	15	-21454	Resistor 1.0 Megohm ¼ W.
2	G9 -32004	1st I-F Coil—only	16	-26577	Resistor 3.0 Megohm ¼ W.
	W -25025B	Coil Shield	17	G5 -23300	Resistor 0.6 Ohm
	W -26891	Insulating Washer	18	-23785	Resistor 500,000 Ohm ¼ W.
	W -21541C	Retaining Ring	19	-21455	Resistor 300,000 Ohm ¼ W.
	W -25200A	Coil Socket	20	-24814	Resistor 7,000 Ohm ¼ W.
3	G13-32004	2nd I-F Coil Asem.	21	-24990	Resistor 25,000 Ohm ¼ W.
4	G9 -32002	Osc. Coil	22	-27121	Resistor 5,000 Ohm ¼ W.
	W -25025B	Coil Shield	23	W -23013	Resistor 2,000 Ohm ½ W. Flex.
	W -26891	Insulating Washer	24	W -21452	Resistor 1,100 Ohm ½ W. Flex.
	W -21541C	Retaining Ring	25A	G55-27975	Socket 1A6
	W -25200A	Coil Socket		W -33072	Socket Cushion
5A	W -28621	Condenser 0.02 Mfd. 200 V.	25B	G55-33070	Socket 1A6
5B	W -28621	Condenser 0.02 Mfd. 200 V.	26	G31-27975	Socket 34
5C	W -28621	Condenser 0.02 Mfd. 200 V.	27	G36-27975	Socket 33
5D	W -28621	Condenser 0.02 Mfd. 200 V.	28	-21M	Speaker
6	W -29910A	Condenser 0.25 Mfd. 200 V.	29	W 33922A	Volume Control
7	W -28619	Condenser 0.006 Mfd. 200 V.	30		On-Off Switch
8	W -5382	Condenser 0.00025 Mfd.	31	G5 -33005	Condenser 1st I-F Trimmer
9	W -30321A	Condenser 1.0 Mfd. 160 V.		D -33938	Cabinet
10A	W -28622	Condenser 0.1 Mfd. 200 V.		W -31140	Escutcheon (V. C.)
10B	W -28622	Condenser 0.1 Mfd. 200 V.		W -34050	Escutcheon (Dial)
11A	W -25572	Condenser 0.0005 Mfd. 400 V.		W -28760B	Escutcheon Pin (6)
11B	W -25572	Condenser 0.0005 Mfd. 400 V.		W -33939	Knob (2)
12Z	G6 -33001	2 Section Tuning Condenser Gang			
12Y					

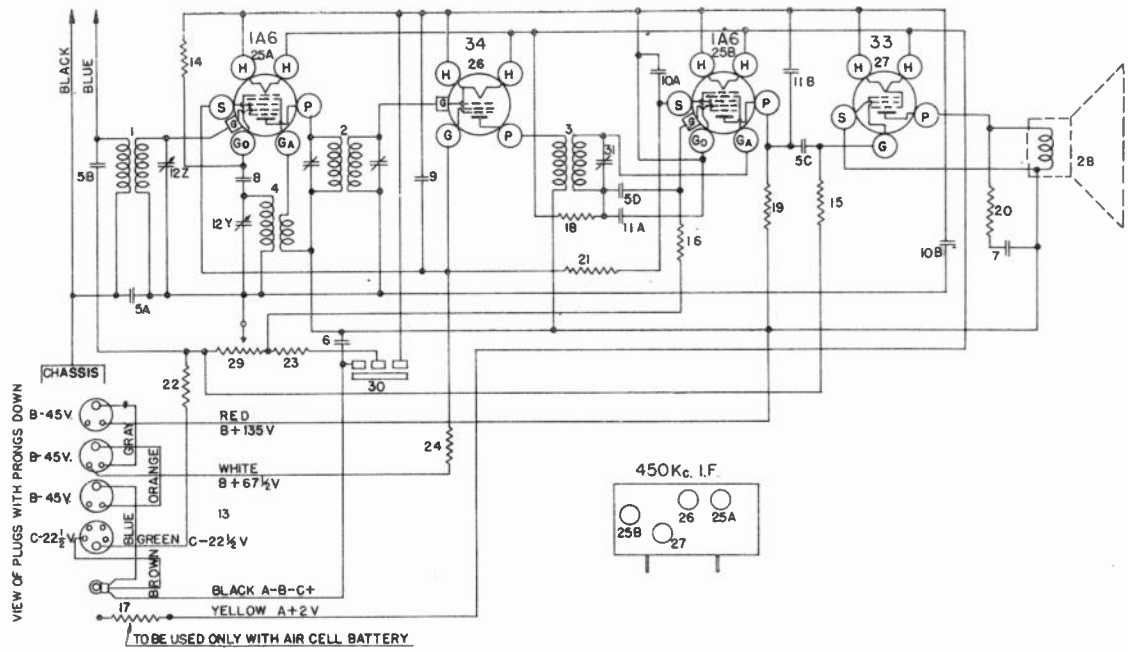


FIG. 1—WIRING DIAGRAM—MODEL 415

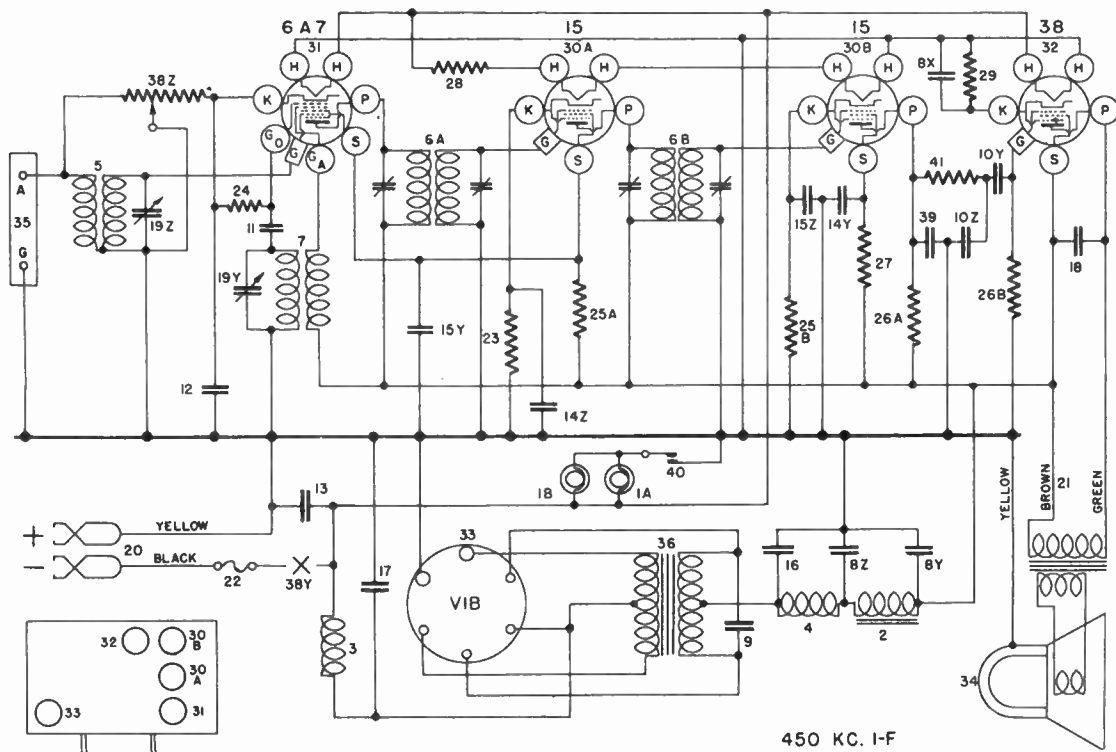


FIG. 1—WIRING DIAGRAM—MODEL 416

MODEL 416

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmers located on top of the 2nd. I-F Transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st. I-F Transformer for maximum output.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer on the "ANT" section of the condenser gang for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	S	G	S	G	K	Ga	Go
6A7	Osc.-Mod.	6.3	185	70	0	2.5	185	-10 to -20
15	I-F Amplifier	2.1	185	70	0	2.5		
15	Detector	2.1	20	4	0	4.5		
38	Output	6.3	170	185	0	11.0		

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W ---37922	Bulb Dial Light	23	W ---22514	Resistor 750 Ohm. 1/2W. I-F Cathode
	G3 ---37965	Socket Assembly Dial Light	24	---21453	Resistor 40,000 Ohm. 1/4W. Osc. Grid Leak
2	G10 ---29535	Choke 2.4H. Hum Filter	25A	---21237A	Resistor 60,000 Ohm. 1/4W. Screen Series
3	G13 ---28067	Choke Vib. "A" Filter	25B	---21237A	Resistor 60,000 Ohm. Det. Cathode Bypass
4	G1 ---24234	Choke R-F Filter	26A	---35602	Resistor 1 Megohm 1/4W. Det. Plate
5	G55 ---32000	Coil 540-1725 Kc. Antenna	26B	---35602	Resistor 1 Megohm 1/4W. Output Grid
6A	G119---32004	Coil 450 Kc. 1st I-F Assembly	27	---33490	Resistor 10 Megohm 1/4W. Det. Screen
6B	G119---32004	Coil 450 Kc. 2nd I-F Assembly	28	W ---41786	Resistor 9 Ohm. Filament Series
7	G9 ---32002	Coil 540-1725 Kc. Oscillator	29	W ---21452	Resistor 1100 Ohm. 3/4W. Output Cathode
8Z		Cond. 12 MF. 250V. Filter Bypass	30A	G88 ---28807	Type 15 I-F Amp.
8Y	W ---34896	Cond. 8 MF. 250V. Plate Bypass	30B	G88 ---28807	Type 15 A-F Amp.
8X		Cond. 8 MF. 25V. Output Bias Bypass	31	G47 ---28807	Type 6A7 Osc.—Mod.
9	W ---37214	Cond. .001 MF. 1000V. Synchronizing	32	G15 ---28807	Type 38 Output
10Z	W ---30322A	Cond. .00017 MF. Det. Plate Bypass	33	G92 ---28807	Type V1B Full Wave Vibrator
10Y		Cond. .006 MF. A-F Coupling	W	---35772	Tube Shield (Half) (6)
11	G1 ---34002	Cond. .00025 MF. Osc. Grid Coupling	W	---35774	Tube Shield Base
12	W ---28621	Cond. .02 MF. 200V. Osc.-Mod. Cathode Bypass	W	---35773	Tube Shield Cap
13	W ---37190	Cond. .02 MF. 160V. Filament Bypass (Metal Clad H-F)	34	---41316	Speaker Type 33PJ3, "A"
14Z	W ---28623	Cond. .02MF. 200V. I-F Cathode Bypass		---41434	Cone Assembly Used on 41316
14Y		Cond. .02MF. 200V. Det. Screen Bypass		---41458	Mtg. Ring Used on 41316
15Z	W ---28622	Cond. .1MF. 200V. Det. Cath. Bypass		---41454	Output Trans. Used on 41316
15Y	W ---37173	Cond. .1MF. 200V. Common Scr. Bypass	35	G26 ---26719	Terminal Board Assy. Ant. & Gnd.
16	W ---37173	Cond. .25 MF. 300V. V1B. "B" Bypass (Metal Clad H-F Type)	36	G5 ---31618	Transformer Power
17	W ---37174	Cond. .5MF. 160V. V1B. "A" Bypass (Metal Clad H-F Type)	37	W ---37216	Vibrator
18	W ---34647	Cond. .006MF. 400V. Output Plate to Screen		W ---37195	Vibrator Shield
19Z		Antenna Section		W ---37217	Vibrator Side Packing
19Y	G25 ---33001	Cond. Var. Tuning Osc. Section		W ---37218	Vibrator Top Packing
	C ---41755	Glass Dial—Calibrated		W ---26973B	Shield Base
	W ---41739	Dial Drive Unit	38Z		Volume Control 4800 Ohm.
	W ---41751	Dial Support Brkt. (R. H.)	38Y	---41754	Battery Switch
	W ---41752	Dial Support Brkt. (L. H.)	39	G2 ---34002	Cond. .0001 MF. Det. Plate Bypass
	W ---41753	Dial Mtg. Brkt. (R. H.)	40	W ---41068A	Switch Momentary Dial Light
	W ---40797	Dial Mtg. Brkt. (L. H.)	41	---35600	Resistor 100,000 Ohm. 1/4W. I-F Filter
	W ---40795B	Hand Shaft			
	W ---40907	Shaft Bearing Brkt.			
	W ---40909	Spring Washer (Shaft)			
	W ---41611	Shaft Retaining Ring			
	B ---40818C	Pointer Disc			
	W ---40486	Disc. Mtg. Screw			
	W ---41578	Gear Spring			
20	MG25---37103	Cable (Assembly) Battery Supply	B	---37172A	Cover V1B. Compartment
21	G6 ---35696	Cable 3 Lead Speaker	B	---41886	Escutcheon
22	W ---7983A	Fuse 3 Amp. "A" Supply	D	---28	Escutcheon Mtg. Screw
	G2 ---33339	Panel (Assembly) Fuse	W	---40840A	Crosley Shield
			W	---41221	Knob (Upper) Volume Control
			W	---41222	Knob (Lower) Dial Light Switch
			W	---41605	Knob Station Selector

Misc. Parts



## CHATTABOX — CHASSIS NO. 417

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K
25A6G	Oscillator and Det.	25	—	—	0
6J7G	Audio Driver	5.8	7	5	1.3
25A7G	Rectifier	25	105	—	—
	Modulator		90	95	11
	Output		90	95	11
W43357	Ballast		Rc—R 48 Volts, Tl—R 43 Volts		

### ALIGNMENT PROCEDURE

(a) Feed a 400 cycle modulated signal into the receiver and tune the receiver to this signal.

(b) Place one of the good Chattaboxes in front of the speaker of the radio. Turn the Chattabox "ON" and lock the switch in the "TALK" position.

(c) Place the unit to be aligned in an adjacent room and connect to the same electric circuit as the good unit in the other room is connected.

(d) The second good unit should be set up in the same room as the unit to be aligned. Its switch should remain in the "LISTEN" position.

(e) Connect the output meter from the plate of the 25A7G tube to chassis of the unit being aligned. A .1 mfd., or larger, condenser should be connected in series with one of the leads.

(f) Turn the unit "ON" and with the switch in the "LISTEN" position, adjust all three trimmers on the triple-tuned transformer for maximum reading on the output meter.

(g) Lock the switch in the "TALK" position. The signal produced in the good unit will be the beat note produced by the interaction of the unit being aligned and the good unit in the other room. CAUTION: The volume level of the good unit receiving the beat note should be kept low enough to prevent a microphonic howl.

(h) Adjust the top trimmer on the triple-tuned transformer until the note in the good unit is reduced almost to zero beat.

(i) Throw the switch lever back and forth several times between the "LISTEN" and "TALK" positions, listening each time to the tone of the beat note. If the note changes in pitch or disappears altogether, readjust the top trimmer. Repeat this operation until the note is stable and as close as possible to zero beat.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —44337	Bulb—Dial Light	22	—36322	Resistor, 500,000 Ohm $\frac{1}{4}$ W. Ins.
2	G151—32002	Osc. and Coupling Coil Assy.	23A	—35602	Resistor, 1. Megohm $\frac{1}{4}$ W. Ins.
3A	G1 —32007	R-F. Filter Choke	23B	—35602	Resistor, 1. Megohm $\frac{1}{4}$ W. Ins.
3B	G1 —32007	R-F. Filter Choke	24	269BI.6"U"	Speaker—Spec. No. 5-B-103
4	G2 —32007	R-F. Filter Choke		—45172	V. C. and Cone Assy.
5	G18 —29535	Audio Choke		—45292	Output Transformer
6	G17 —29535	Rectifier Filter Choke	25	G161—36400	Socket, Type 25A6
7A	W —43280	Condenser, 25 Mf. 150 V.	26	G157—36400	Socket, Type 6J7
7B	W —43280	Condenser, 25 Mf. 150 V.	27	G181—36400	Socket, Type 25A7
8A	W —44434	Condenser, 50 Mf. 25 V.	28	G170—36400	Socket Ballast—W-43357
8B	W —44434	Condenser, 50 Mf. 25 V.	29	B —44333	Switch—Listen, Talk and Signal
9		None	30	G-10 —26719	Direct Line Term. Board
10A	G3 —34002	Condenser, .0005 Mf. 200 V.	31		None
10B	G3 —34002	Condenser, .0005 Mf. 200 V.	32	—44612	Vol. Cont. (5,000-Ohm) and Line Switch
11A	W —30270	Condenser, .001 Mf. 400 V.	33	W —28619	Condenser, .006 Mf. 200 V.
11B	W —30270	Condenser, .001 Mf. 400 V.	34	—35927	Resistor, 2 Megohm $\frac{1}{4}$ W. Ins.
11C	W —30270	Condenser, .001 Mf. 400 V.	35	—38623	Resistor, 750,000 Ohm $\frac{1}{4}$ W. Ins.
12A	W —23191A	Condenser, .01 Mf. 400 V.	36	W —45418	Resistor, 50 Ohm 6W. Flex.
12B	W —23191A	Condenser, .01 Mf. 400 V.		7DF	Cabinet
13	W —27216	Condenser, .05 Mf. 200 V.		—43320	Knob (Vol. Cont.)
14A	W —23615	Condenser, .05 Mf. 400 V.		—44616B	Switch Lever
14B	W —23615	Condenser, .05 Mf. 400 V.		—44617A	Switch Lock
15A	W —24049C	Condenser, .1 Mf. 200 V.		—29023	Bezel (Jewel)
15B	W —24049C	Condenser, .1 Mf. 200 V.		—28723B	Jewel
15C	W —24049C	Condenser, .1 Mf. 200 V.		—44160	Cabinet Back
16A	W —22688	Condenser, .1 Mf. 400 V.		W —23012	Resistor (40 Ohm) Direct Line
16B	W —22688	Condenser, .1 Mf. 400 V.			
17	B —33906B	Power Cord and Plug			
18	W —29585	Resistor, 600 Ohm $\frac{1}{2}$ W. Flex.			
19	—35934	Resistor, 6,500 Ohm $\frac{1}{4}$ W. Ins.			
20	—36760	Resistor, 20,000 Ohm $\frac{1}{4}$ W. Ins.			
21A	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Ins.			
21B	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Ins.			

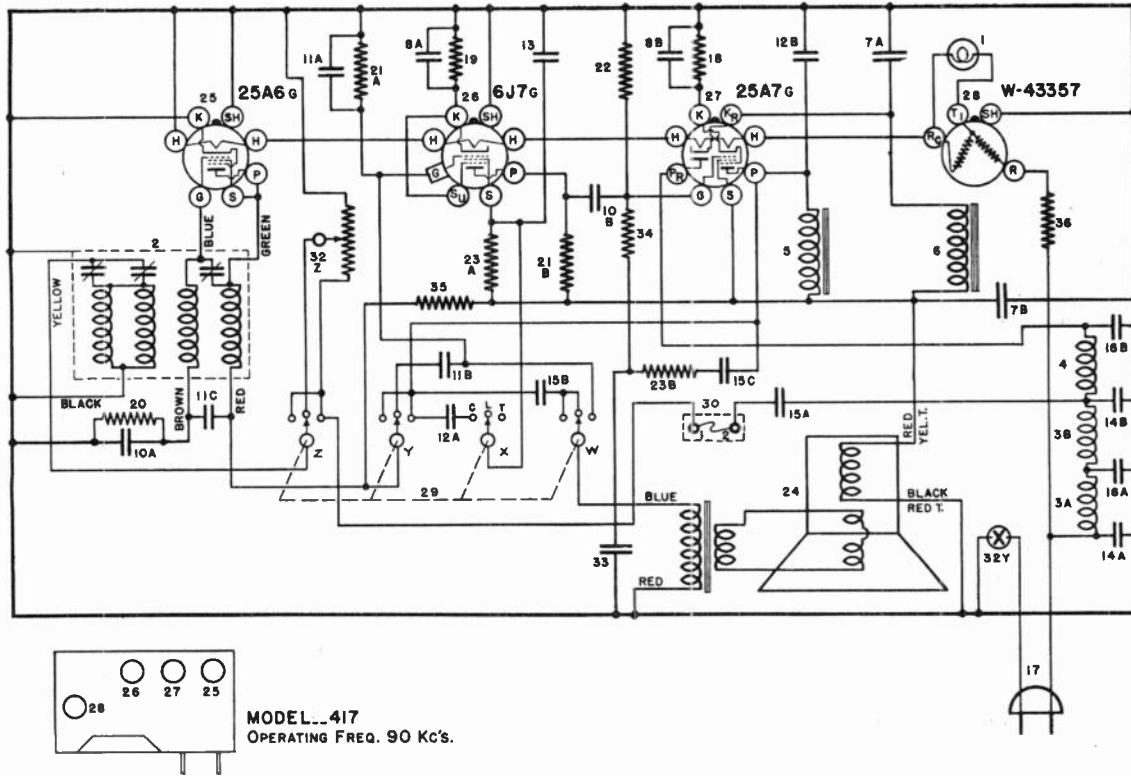


FIG. 1—WIRING DIAGRAM—MODEL 417

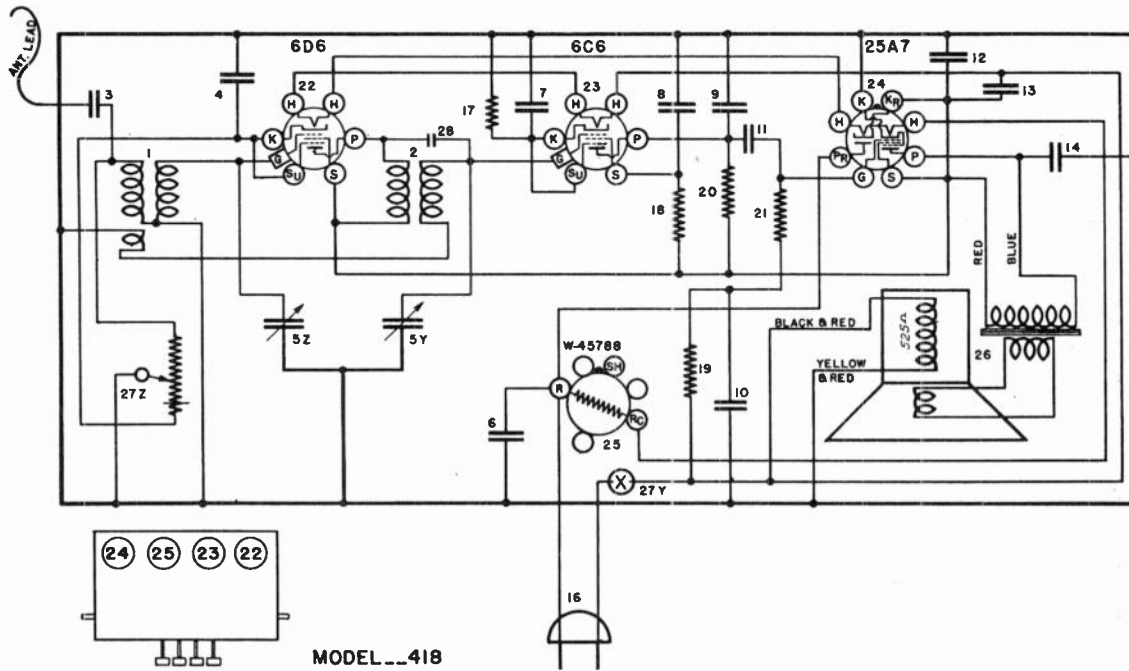


FIG. 1—WIRING DIAGRAM—MODEL 418

## MODEL 418 (VANITY)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R. F. Amplifier	6.3	103	104	2.5-25	2.5-25	—
6C6	Detector	6.3	24	8	10	10	—
25A7-G	Output	25	95	104	—	—	-10
	Rectifier	25	—	—	124	—	—
W-45788	Ballast	80 A. C.					

### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A7G output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd., or larger—not electrolytic) in series with one of the leads.

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected through the speaker field to one side of the power line and should be isolated in order that the power supply will not be short-circuited while the receiver is being aligned.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead on the set and the other lead through a .001 mf. condenser to the chassis (if your signal generator is A.C. operated).

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kc.

(d) Adjust the trimmers on the gang until the 1725 Kc. signal is heard. Gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

(f) Tune set to 1400 signal, then alternately adjust trimmers on gang until no further improvement can be noted.

NOTE: Always use the lowest signal generator output that will give a reasonable indication on the out-

put meter.

Keep the two grid leads as far as possible from each other.

Check Push Buttons to see if they need resetting.

### SETTING THE PUSH BUTTONS

The push buttons may be quickly and accurately set from the front of the receiver. Insert a small screw driver in the hole in the front of each push button to be set and loosen (DO NOT REMOVE) the set screw at the bottom of the hole.

Determine the favorite broadcasting stations whose call letters are to be placed in the push buttons. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency (kilocycles), that is the one nearest the 150 marking on the knob. Completely depress and hold the right hand push button in that position, while you SECURELY TIGHTEN THE SET SCREW.

The push button system is now set for the first station. Follow through with this same procedure, setting the other stations in the order of their frequency (kilocycles).

Cut the call letters of the stations selected, from the list supplied with your receiver and press them into the openings in the front of the push buttons. Four pieces of clear celluloid are supplied in a small envelope and should be snapped into place over the call letters to protect and hold them in place.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G173-32000	Antenna Coil		—46045	Output Transformer
2	G102-32001	Oscillator Coil		W —45900A	Speaker Mtg. Brkt.
3	W —45780B	Condenser, .02 Mf. 160 Volt	27Z }		Volume Control (40,000 Ohm)
4	W —45780B	Condenser, .02 Mf. 160 Volt	27Y }	—45786	
5Z }					
5Y }	G53 —33001	2 Section Gang Condenser	28	W —45789A	Line Switch
6	W —45782B	Condenser, .05 Mf. 400 Volt		G3 —50640	V. C. Mtg. Brkt.
7	W —45781B	Condenser, .25 Mf. 160 Volt		G6 —45683	Condenser, 7-10 Mmf.
8	W —45780B	Condenser, .02 Mf. 160 Volt		G27 —45683	Push Button Unit
9	G2 —34002	Condenser, .0001 Mf. Molded		G26 —45683	Rocker Plate Assy.
10	W —45781B	Condenser, .25 Mf. 160 Volt		W —50542C	Key Assy.
11	W —45780B	Condenser, .02 Mf. 160 Volt		W —45717	Key Clip (Lock Clamp)
12	W —45783	Condenser, 16 Mf. 150 Volt		W —50607B	Adjusting Screw
13	W —45783	Condenser, 16 Mf. 150 Volt		W —50561	Spring (Key Return)
14	W —45780B	Condenser, .02 Mf. 160 Volt		W —50547	Bearing Screw (Rocker Plate)
15	—None			W —50547	Key Plate (Rear Guide)
16	B —45784	Power Cord & Plug		W —45788	Ballast Tube
	W —45902	Clamp—Power Cord		W —46259	Cabinet Assy. 8BB (Brown)
17	—24990	Resistor, 25,000 Ohm 1/3 W.		W —45828B	Back Cabinet 8BB (Brown)
18	—37583	Resistor, 2.5 Megohm 1/3 W.		W —45930C	Rubber Foot (Bottom)
19	—34018	Resistor, 200,000 Ohm 1/3 W.		W —45931	Rubber Foot (Screw Type)
20	—23785	Resistor, 500,000 Ohm 1/3 W.			(Back)
21	—21455	Resistor, 300,000 Ohm 1/3 W.		W —45852	Baffle Board
22	G21 —28807	Socket, 6 Prong		W —45853	Grille Cloth
23	G21 —28807	Socket, 6 Prong		—45553B	Push Button (Brown)
24	G178-36400	Socket, 8 Prong (Octal)		—45822	Dial Knob (Brown)
25	G178-36400	Socket, 8 Prong (Octal)		—45825A	Vol. Cont. Knob (Brown)
	W —34175	Tube Shield Half (Slotted)		—50549	Station Call Letter List
	W —34174	Tube Shield Half		W —50551A	Celluloid Protector (Cover)
	W —31210	Ring—Tube Shield			
26	282-BL-4	Speaker Mfg. Spec. No. 5-B-129			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	G	Pt	Gt
78	Osc.-Mod.	6.5	105	105	17	20	—	—
6F7	I-F Amp. & Det.	6.5	105	105	0	3	35	0
43	Output	26.0	195	105	-20	0	—	—
25Z5	Rectifier	26.5	117.5	—	—	—	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 78 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE 6F7 TUBE.

(b) Set the station selector condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condenser for the 2nd I-F transformer for maximum output.

(e) Adjust both trimmer condensers for the 1st I-F transformer. for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(c) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

(c) Place the chassis in the cabinet and adjust the station selector to 140 on the dial.

(d) Remove the chassis from the cabinet and adjust the "OSC" trimmer, located on the station selector condenser, for maximum output.

(e) Adjust the "ANT" trimmer, located on the station selector condenser, for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784-3	Antenna Roll	16Z		
2	G2 —27812	Dial Light Socket Assem.	16Y {	G11—33006 }	2 Section 1st I. F. Trimmer
3	G1 —28859	Choke Assembly. (filter)	17	G5 —33005	1 Section 2nd I. F. Trimmer
4	G75—32000	Antenna Coil	18Z {	G16—33001 }	2 Section Tuning Condenser Gang
5	G3 —32004	First I. F. Coil Only	18Y {		
	W —25024B	Coil Shield	19	W —36786A	Gang Insulator Cover
	W —25200	Coil Socket	20	B —35350	Power Cord and Plug
	W —26891	Insulating Washer	21	—31093	Resistor 2700 Ohm ¼ W.
	W —21541	Retaining Ring	22	—24990	Resistor 25,000 Ohm ¼ W.
6	G11—32004	Second I. F. Coil Only	23	—21455	Resistor 300,000 Ohm ¼ W.
	W —25025B	Coil Shield	23A	—23785	Resistor 500,000 Ohm ¼ W.
	W —25200	Coil Socket	23B	—23785	Resistor 500,000 Ohm ¼ W.
	W —26891	Insulating Washer	24	W —28589	Resistor 350 Ohm ½ W Flex.
	W —21541	Retaining Ring	25	W —30539	Resistor 26.7 Ohm 3. W Flex.
7	G6 —32002	Oscillating Coil Only	26	G30—28807	Socket 43
	W —25025B	Coil Shield	27	G39—28807	Socket 78
	W —25200	Coil Socket	28	G51—28807	Socket 25Z5
	W —26891	Insulating Washer	29	G49—28807	Socket 6F7
	W —21541	Retaining Ring	30	—214BL9	Speaker
8Z		Condenser 16 Mfd. 125 V.	31Z {	—36793 }	Volume Control
8Y	W —29804A	Condenser 8 Mfd. 125 V.	31Y {		On-Off Switch
8X		Condenser 25 Mfd. 100 V.	D —36919A		Cabinet -5H
9Z	W —30322A	Condenser 0.00017 Mfd. 200 V.	W —36920A		Dial Plate
9Y		Condenser 0.006 Mfd. 200V.	W —36921A		V. C. Plate
10	W —30325	Condenser 0.003 Mfd. 200 V.	W —28760		Plate Pins (6)
11Z	W —29265	Condenser 0.008 Mfd. 200 V.	W —36922		Pointer (2)
11Y		Condenser 0.05 Mfd. 200 V.	W —35252A		Knob (2)
12	W —30488	Condenser 0.02 Mfd. 400 V.	W —28723A		Bulls Eye
13	W —28621	Condenser 0.02 Mfd. 200V.	W —29023		Bulls Eye Bezel
14Z	W —28623	Condenser 0.02 Mfd. 200V.	W —33924		Chassis Foot (2) Spreader
14Y		Condenser 0.02 Mfd. 200V.	B —36806C		Mounting Plate (Back)
15	W —29910A	Condenser 0.25 Mfd. 200 V.			

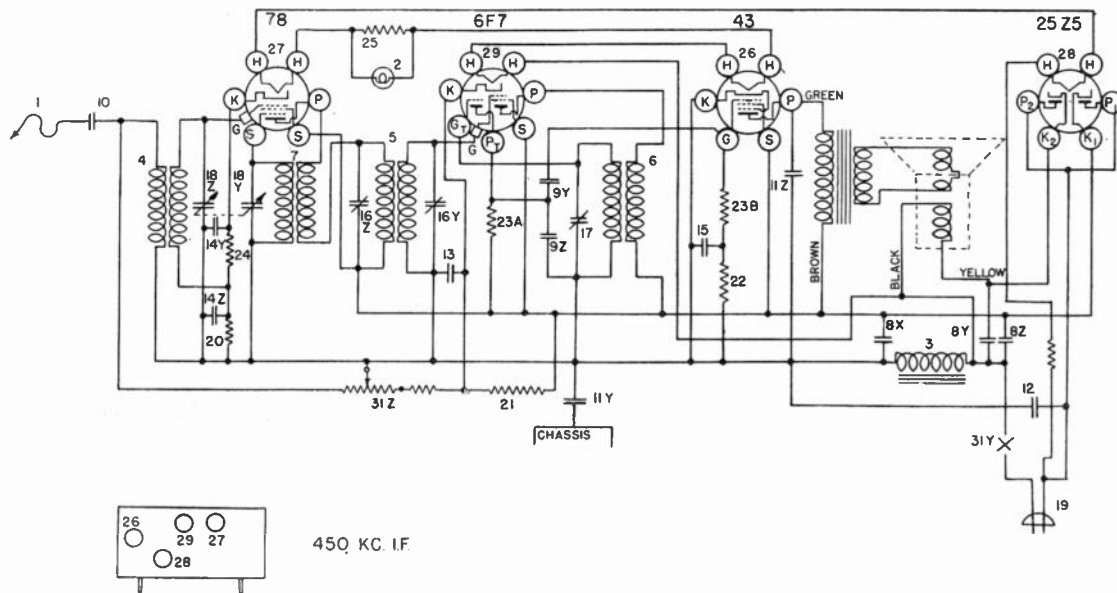


FIG. 1—WIRING DIAGRAM—MODEL 425

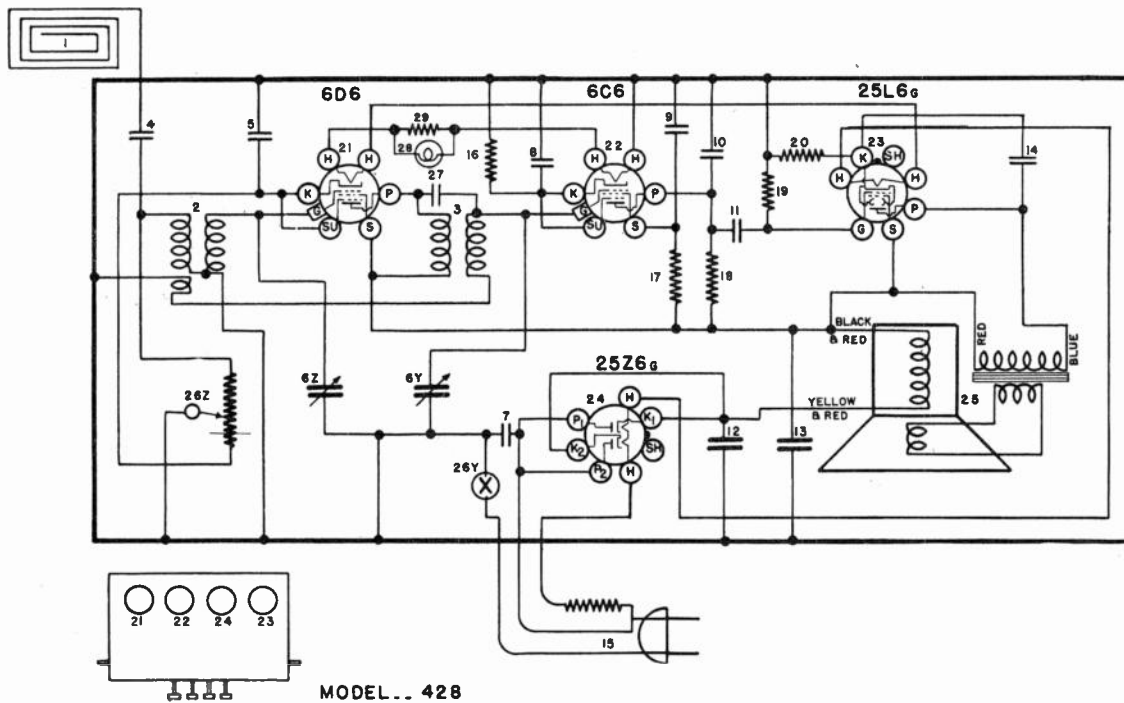


FIG. 1—WIRING DIAGRAM—MODEL 428

## MODEL 428 VANITY DE LUXE

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6C6	Detector	6.3	20	10	7	—	—
25L6-G	Output	25	85	98	6	—	—
25Z6-G	Rectifier	25	—	—	126	—	—

### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver (after the antenna has been completely unrolled. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

NOTE: Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

If the receiver has been re-aligned it may be necessary to readjust the setting of the push buttons.

### SETTING THE PUSH BUTTONS

The push buttons may be quickly and accurately set from the front of the receiver. Insert a small screw driver in the hole in the front of each push button to be set and loosen (DO NOT REMOVE) the set screw at the bottom of the hole.

Determine the favorite broadcasting stations whose call letters are to be placed in the push buttons. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency (kilocycles), that is the one nearest the 150 marking on the knob. Completely depress and hold the right hand push button in that position, while you SECURELY TIGHTEN THE SET SCREW.

The push button system is now set for the first station. Follow through with this same procedure, setting the other stations in the order of their frequency (kilocycles).

Cut the call letters of the stations selected, from the list supplied with your receiver and press them into the openings in the front of the push buttons. Four pieces of clear celluloid are supplied in a small envelope and should be snapped into place over the call letters to protect and hold them in place.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —45577	Antenna Roll	27	G3 —50640	Condenser Assembly
2	G180—32000	Antenna Coil	28	W —44337	Dial Light, 6-8 Volt
3	G104—32001	R. F. Coil		W —40570	Dial Light Shield
4	W —45780B	Condenser, .02 Mf. 160 V.	29	G6 —27134	Dial Light Socket
5		Condenser, .02 Mf. 160 V.		W —44396	Resistor, 40 Ohms 3½W. Flex.
6Z	G53 —33001	2 Section Gang Condenser	<b>PUSH BUTTON PARTS</b>		
6Y					
7	W —45782B	Condenser, .05 Mf. 400 V.	G6 —45683	Push Button Unit Assembly	
8	W —45781B	Condenser, .25 Mf. 160 V.	G26 —45683	Key and Toggle Assembly	
9	W —45780B	Condenser, .02 Mf. 160 V.	W —50542C	Key Clip (Lock Clamp)	
10	G2 —34002	Condenser, .0001 Molded		—45717	Adjusting Screw
11	W —45780B	Condenser, .02 Mf. 160 V.	G27 —45683	Rocker Plate Assembly	
12	W —45783	Condenser, 16 Mf. 150 V. Elect.	W —50561	½"—No. 6 x 40 Screw (Rocker Plate Bearing)	
13	W —45783	Condenser, 16 Mf. 150 V. Elect.	W —50547	Key Plate (Rear Guide)	
14	W —45817A	Condenser, .05 Mf. 160 V.	W —50607B	Spring (Push Button Slide)	
15	B —46114	Power Cord (165 Ohm 15W Lead)		—45832	Push Button
	W —45902	Cord Clamp		—45830	Dial Knob
16	—24990	Resistor, 25,000 Ohms ½W.		—45831A	Knob, V. C.
17	—37583	Resistor, 2.5 Meg Ohms ½W.		—50549	Call Letter Sheet
18	—23785	Resistor, 500,000 Ohms ½W.	W —50551A	Celluloid Cover	
19	—23785	Resistor, 500,000 Ohms ½W.	W —46260	Cabinet Assy. Complete	
20	W —45965	Resistor, 110 Ohms ½W. Flex.		—45814C	Cabinet
21	G21 —28807	6 Prong Socket		—45829B	Cabinet Back
22	G21 —28807	6 Prong Socket	W —45853	Grille Cloth	
23	G178—36400	8 Prong Socket	W —45930C	Rubber Mounting Foot	
24	G178—36400	8 Prong Socket	W —45931	Mounting Screw and Foot	
	W —34175	Tube Shield Half (Slotted)	W —45852	Baffle Board	
	W —34174	Tube Shield Half (Plain)		—46260	Cabinet Assembly
	W —31210	Tube Shield Ring			
25	281-BL-5-U	Speaker Spec. 5-B-130			
	W —45900A	Speaker Mtg. Bracket			
26Z	—45786	Volume Control, 40,000 Ohms			
26Y			On-Off Switch		
	W —45789A	V. C. Mtg. Bracket			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	C	Ga	Go
1A7-G	Oscillator-Modulator	1.5	82	48	0	82	—
1N5-G	I-F Amplifier	1.5	82	82	0	—	—
1H5-G	Detector & 1st A-F Amp.	1.5	17	—	0	—	—
1C5-G	Output	1.5	78	82	6*	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1C5G output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers for maximum

reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1600 kilocycles

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description.
1	G1 - 47697	Antenna Loop	22	—21454	Resistor, 1 Megohm 1/3W. Carb.
2	C - 47061B	Battery Cable	23	392-PL-8-"B"	Speaker, Spec. 503-PRW-1
3	G196—32002	Oscillator Coil		—48335	V. C. and Cone Assembly
4	G194—32004	1st I. F. Transformer Assembly		—48336	Output Transformer
5	G195—32004	2nd I. F. Transformer Assembly		—47286	Cardboard Ring
	W - 45513	No. 6—32 Pal Nut (I. F. Transformer Fastening)	24	G1 - 26719	Terminal Board "A" "G"
6A	G75 - 33001	Condenser, Var. Tuning (Ant. Section Osc. Section)	25	—47667	"A" Supply Switch
6B					
	D - 47692A	Dial Face		G178—36400	8 Prong Socket, No Marking
	W - 47679A	Dial Support Bracket		—9DA	Cabinet
	W - 47816	Dial Pointer		W - 47683B	Speaker Screen
	W - 47677	Drive Shaft		W - 47682A	Dial Lens
	W - 47678	Drive Shaft Bracket		—47846A	Knob (With Notch)
	W - 43549	Retaining Ring (Drive Shaft)		—47847	Knob
	—6876	No. 6—32 x 1/4" W. Hd. Screw (Drive Shaft Bracket)		W - 47848A	Knob Escutcheon (2 Req.)
	G19 - 41982	Drive Cord (17" Long)		G1 - 26719	Antenna Connection Terminal
	W - 46290	Drive Cord Clamp		—43885	No. 8 x 5/8" P. K. Screw (Chassis Fastening)
	W - 44989	Drive Spring		W - 30409	Flat Washer (Chassis Fastening)
7	G2 - 34002	Condenser, .0001 Mf. Molded		G64 - 35954	Antenna Junction Block
8	W - 28621	Condenser, .02 Mf. 200 V. Paper		W - 47696	Battery Support Rail
9	W - 28621	Condenser, .02 Mf. 200 V. Paper		—7668	No. 8 x 3/4" Rd. Hd. Wood Screws (Support Rail)
10	W - 46128	Condenser, 16 Mf. 250 V. Elect.		—47694	Instructions
11	G2 - 34002	Condenser, .0001 Mf. Molded		—23840	No. 6 x 5/8" Rd. Hd. Wood Screw
12	W - 30323	Condenser, .01 Mf. 200 V. Paper		—47689	Carton
13	W - 30323	Condenser, .02 Mf. 200 V. Paper		W - 32807	No. 8 x 1/2" Rd. Hd. Wood Screw (Antenna Frame)
14	G1 - 34002	Condenser, .00025 Mf. Molded			
15	W - 28619	Condenser, .006 Mf. 200 V. Paper			
16	—34018	Resistor, 200,000 Ohms 1/3W. Carb.			
17	—21453	Resistor, 400,000 Ohms 1/3W. Carb.			
18	W - 22514	Resistor, 750 Ohms 1/2W. Flex.			
19	—21455	Resistor, 300,000 Ohms 1/3W. Carb.			
20	—21875	Resistor, 100,000 Ohms 1/3W. Carb.			
21	—21454	Resistor, 1 Megohm 1/3W. Carb.			

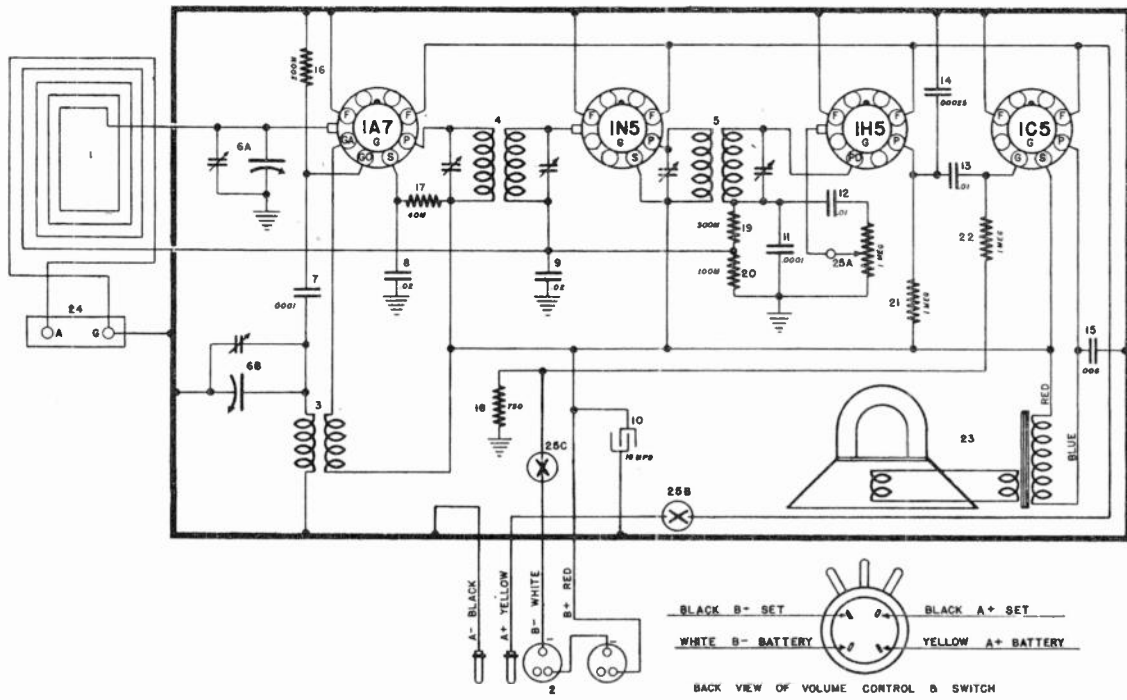


FIG. 1—WIRING DIAGRAM—MODEL 429

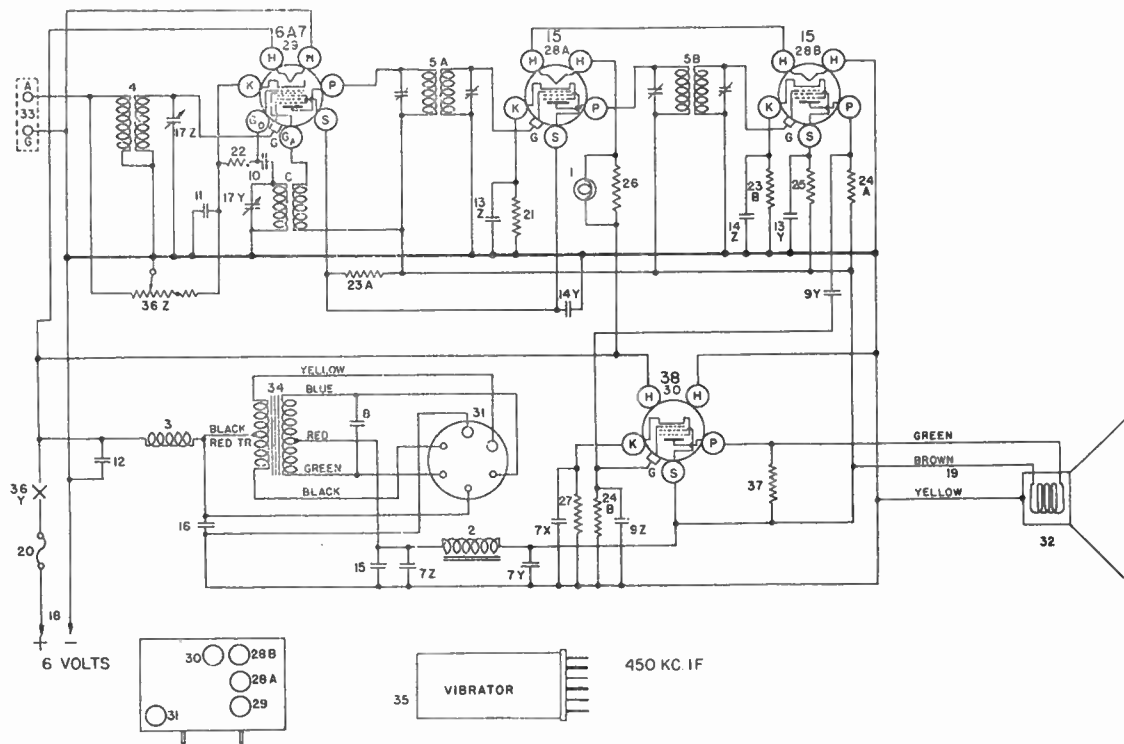


FIG. 1—WIRING DIAGRAM—MODEL 435



TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	S	G	S	G	K	Ga	Go
6A7	Osc.-Mod.	6.3	185	70	0	2.5	185	-10 to -20
15	I-F Amplifier	2.1	185	70	0	2.5	—	—
15	Detector	2.1	20	4	0	4.5	—	—
38	Output	6.3	170	185	0	11.0	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 38 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "Gnd" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the plates of

the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmers located on top of the 2nd. I-F Transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st. I-F Transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer on the "ANT" section of the condenser gang for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G6 —27134	Dial Light Brkt. Assm.	19	W —35111	Speaker Cable
2	G10—29535	Filter Choke 2.4 H.	20	G2 —33339	Fuse Panel
3	G13—28067	"A" Filter Choke	21	W —22514	Resistor 750 Ohm ½ W., Flex
4	G55—32000	Ant. Coil (only)	22	—21453	Resistor 40,000 Ohm ¼ W.
	W —30802A	Coil Shield	23A	—21237A	Resistor 60,000 Ohm ¼ W.
	W —30026A	Retaining Ring	23B	—21237A	Resistor 60,000 Ohm ¼ W.
5A	G70—32004	1st I. F. Coil Assm.	23C	—21237A	Resistor 60,000 Ohm ¼ W.
5B	G70—32004	2nd I. F. Coil Assm.	24A	—35602	Resistor 1.0 Megohm ¼ W.
6	G9 —32002	Osc. Coil (only)	24B	—35602	Resistor 1.0 Megohm ¼ W.
	W —25025B	Coil Shield	25	—33490	Resistor 10.0 Megohm ¼ W.
	W —26891	Insulating Washer	26	W —37189	Resistor 12.75 Ohm ½ W., Flex.
	W —21541C	Retaining Ring	27	W —21452	Resistor 1100. Ohm ¾ W., Flex.
	W —25200	Coil Socket	28A	G88—28807	Socket 15
7Z		Condenser 12.0 Mfd. 250 V.	28B	G88—28807	Socket 15
7Y	W —34896	Condenser 8.0 Mfd. 250 V.	29	G47—28807	Socket 6A7
7X		Condenser 8.0 Mfd. 25 V.	30	G15—28807	Socket 38
8	W —37214	Condenser 0.001 Mfd. 1,000 V.	31	G92—28807	Socket Vib.
9Z		Condenser 0.00017 Mfd. 200 V.		W —35772	Tube Shield (Half) (6)
9Y	W —30322A	Condenser 0.006 Mfd. 200 V.		W —35773	Tube Shield Cap (3)
10	G1 —34002	Condenser 0.00025 Mfd. (Mica)		W —35774	Shield Base (3)
11	W —28621	Condenser 0.02 Mfd. 200 V.	32	33—MS—3U	Speaker
12	W —37190	Condenser 0.02 Mfd. 160 V.	33	G1 —26719	Terminal Board Ant. & Grd.
13Z		Condenser 0.02 Mfd. 200 V.	34	G4 —31618	Power Transformer
13Y	W —28623	Condenser 0.02 Mfd. 200 V.	35	W —37216	Vibrator
14Z		Condenser 0.1 Mfd. 200 V.		W —37195	Vibrator Shield
14Y	W —28622	Condenser 0.1 Mfd. 200 V.		W —37217	Vibrator Side Packing
15	W —37173	Condenser 0.25 Mfd. 300 V.		W —37218	Vibrator Top Packing
16	W —37174	Condenser 0.5 Mfd. 160 V.		W —26973B	Shield Base
17Z		2 Section Tuning Cond. Gang.	36Z		Volume Control
17Y	G14—33001		36Y	—37187	On-Off Switch
	—36147B	Dial Drive Unit Assm.	37	—21453	Resistor 40,000 Ohm ¼ W.
MG16	—35757	Drive Mounting Brkt.	38	—35600	Resistor 100,000 Ohm ¼ W.
	W —36150A	Dial Face only	39	G2 —34002	Condenser 0.0001 Mfd.
	—37158	Dial Glass	40	G1 —24234	R. F. Choke
	—37156	Pointer		B —37172A	Synchrone Cover
	—37157	Pointer Screw		B —35917	Escutcheon
13	B —34902	Battery Cable		D —28	Escutcheon Screws (3)
	—34903	Battery Clip +		W —31585B	Knob (2)
	—34904	Battery Clip —		W —7983A	Fuse, 3 Amp.

**MODEL 438-M**  
**Chassis 438 — Phono Assy. 486**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Su	
6U7G	Amplifier	6.7	175	100	—	-3	—	
6Q7G	Det., A. V. C., 1st. A-F	6.7	78	—	-3	-1.5	—	
6V6G	Output	6.7	172	178	—	-10.	—	
5Y3G	Rectifier	4.1	negative end of spk. field to No. 8 pin 225 volts					

Voltage drop across speaker field 40 volts.  
 Maximum power output approximately 3. Watts  
 Power consumption at 117.5 line approx. 36 watts. Phono—15 watts additional.

**ALIGNMENT PROCEDURE**

The signal generator high side should be connected to the antenna through a .0001 Mf. condenser, after the antenna has been completely uncoiled. The low side of the signal generator is connected to chassis.

- (a) First check to see that the pointer makes a complete trip both ways.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Set the pointer of receiver to 140 on the dial.

(d) Adjust trimmer condensers on the gang for maximum output.

(e) Check to see that set will tune to 1725 kilocycles, it does not have to tune through a peak at this frequency.

Any large discrepancy in tracking may be compensated for by slight adjustments of the split end plates of the condenser gang.

Check Push Buttons to see if they need resetting.

**PARTS LIST — MODEL 438**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —46237A	Antenna Roll (40 Ft.)	30	G178 —36400	Socket 8 Prong Octal
2	W —37922	Dial Light, 6-8 Volt	31	G178 —36400	Socket 8 Prong Octal
	G12 —45398	Dial Light Socket Assy.	32	G103 —28807	Socket 5 Prong (Speaker)
3	G177 —32000	Antenna Coil	33	380BP12"B"	Speaker Spec. No. 55WA30
4	G103 —32001	R-F Coil		—46693	Field Coil 700 Ohms
5	W —45780B	Condenser, .02 Mf., 160 V.		—46694	Output Transformer
6	G58 —33001	2 Section Gang Condenser		380BP12"H"	Speaker Spec. No. S55330MA
	C —46136A	Dial Face		—46901	Field Coil 700 Ohms
	W —45742B	Rubber Dial Cushion		—46902	Output Transformer
	W —45984	L. H. Face Mtg. Clip	34	—46133	Power Trans. 60 Cycle, 110 Volt
	W —45985	R. H. Face Mtg. Clip	35	G41 —26719	Phono Terminal Board
	B —45743B	Dial Support Bracket (Mask)	36	—41624	Line Sw. & Vol. Control (1 Meg)
	MG14—45894	R. H. Pulley & Dial Support Brkt. Assy.		G7 —45683	Push Button Unit Assy.
	MG15—45894	L. H. Pulley & Dial Support Brkt. Assy.		G23 —45683	Key & Toggle Assy.
	G12 —43564	Pulley & Hub. Assy. (Gang)		G22 —45683	Gear & Rocker Plate Assy.
	W —46397	Pointer		W —50561	Screw, Rocker Plate Assy.
	W —46037A	Pointer Guide		W —50542C	Lock Clamp
	—46056	Manual Drive Shaft		—45717	Screw, Station Setting
	W —43542B	Bracket, Drive Shaft Mtg.		W —50607C	Spring, Key Return
	G2 —41582	Drive Cord (44")		—46194	Push Button
	W —46087	Tension Spring		—50841	Station Call List
	W —46290	Cord Clamp (Drive Cord)		W —50541A	Celluloid Cover
	—46118A	Escutcheon, Dial		—8N	Cabinet
	D —30	Screws, Escutcheon Mtg.		D —46180A	Back, Cardboard
7	W —45780B	Condenser, .02 Mf., 160 V.		W —46464	Thumb Screw, Back Mtg.
8	W —45780B	Condenser, .02 Mf., 160 V.		—47009	Lid, Support Bracket
9	W —30805	Condenser, .01 Mf., 400 V.		D —46145C	Board, Panel
10	Deleted	Was Capacity Coupling (Twisted Leads)		W —33502	Needle Cup
				W —33503	Lid, Needle Cup
11	G2 —34002	Condenser, .0001 Mf., Molded		W —46169B	Motor
12	W —45780B	Condenser, .02 Mf., 160 V.		W —46144	Shield, Motor (Metal)
13	W —46128	Condenser, 15 Mf., 250 V. Elect.		W —46368	Shield, Insulating Cover
14	W —46128	Condenser, 15 Mf., 250 V. Elect.		—46200	Friction Drive (on Motor Shaft) 60 Cycle
15	W —45780B	Condenser, .02 Mf., 160 V.		W —46991	Friction Drive (on Motor Shaft) 50 Cycle
16	W —28621	Condenser, .02 Mf., 200 V.		—46162A	Magnetic Pick-up & Arm
17	W —22688	Condenser, .1 Mf., 400 V.		—46946	Magnet & Coil Assy.
18	B —45769	Power Cord & Plug		—46947	Arm & Pivot Only
19	—21453	Resistor, 40,000 Ohm 1/3 W.		—46161	Nut, Army Mounting
20	—26577	Resistor, 3 Megohm 1/3 W.		—46821	Needle Screw
21	—21237A	Resistor, 60,000 Ohm 1/3 W.		W —46364	Needles, Chrome Tipped
22	W —24537	Resistor, 60 Ohm 1/2 W.		W —46172	Turn Table, Plate
23	W —37631	Resistor, 32 Ohm 1/2 W.		—46118	Escutcheon
24	—26577	Resistor, 3 Megohm 1/3 W.		W —20754A	Cup Washer (Panel Mtg.)
25	—34020	Resistor, 250,000 Ohm 1/3 W.		D —165	Screw (Panel Mtg.)
26	W —41759	Resistor, 140 Ohm 1/2 W.		—46148	Phono-Radio Switch
27	—21455	Resistor, 300,000 Ohm 1/3 W.		W —46367	Insulating Shield, Switch
28	G178 —36400	Socket 8 Prong Octal		—46143	Instruction Booklet.
29	G178 —36400	Socket 8 Prong Octal			

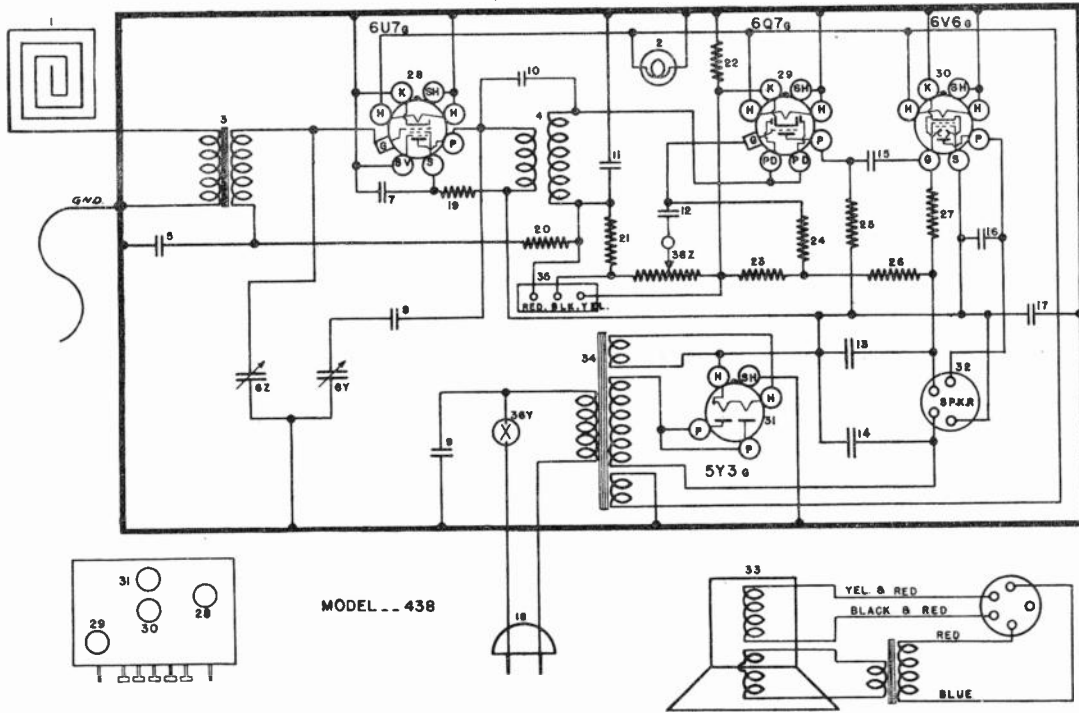
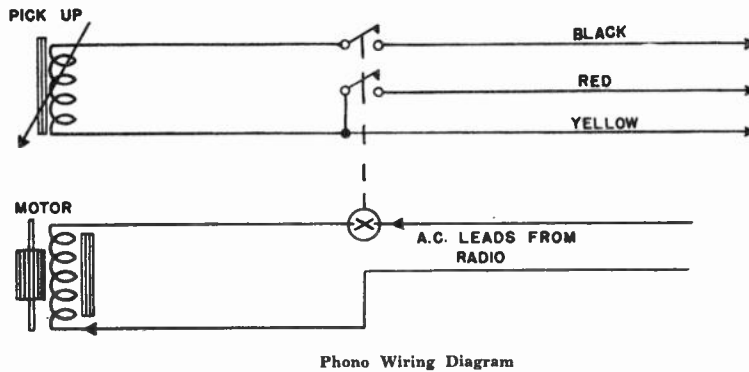
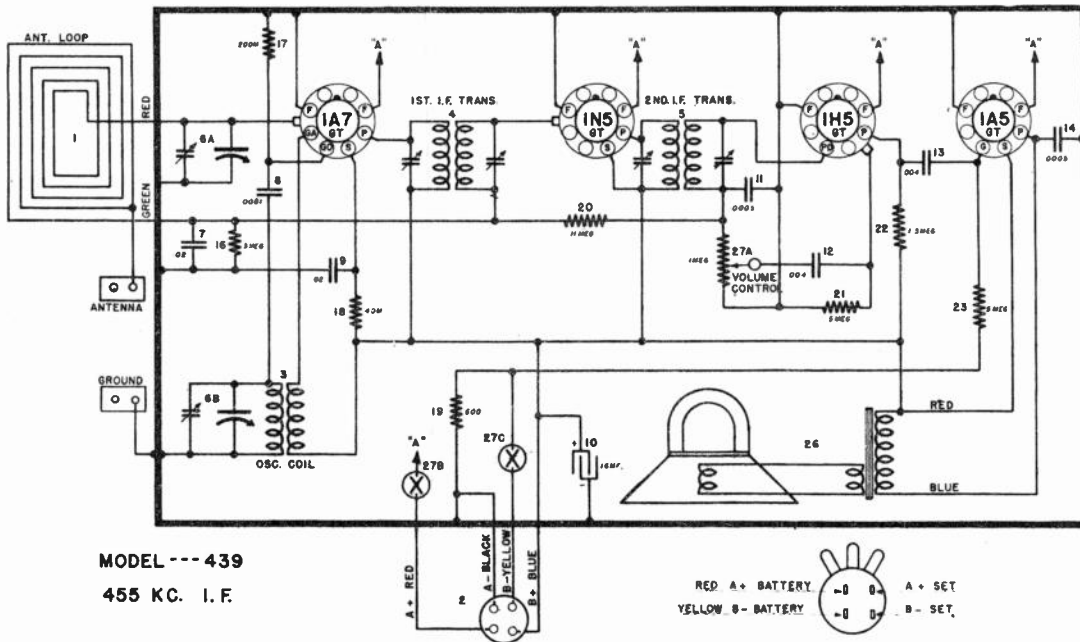


FIG. 1—WIRING DIAGRAM—MODEL 438



Phono Wiring Diagram



MODEL --- 439  
455 KC. I. F.

FIG. 1—WIRING DIAGRAM—MODEL 439

MODEL 439—PORTABLE (Battery)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7-GT	Oscillator-Modulator	---	1.5	58	34	Neg.	58	---	---
1N5-GT	I-F Amplifier	---	1.5	58	58	---	J.B.	---	---
1H5-GT	Detector & 1st A-F Amp.	---	1.5	10	---	---	---	---	---
1A5-GT	Output	---	1.5	58	59	3*	---	---	J.B.

Power Output approximately 100 milliwatts.  
 "A" Battery Drain approximately .20 Ampere at 1.5 Volts.  
 "B" Battery Drain approximately 5.2 Milliamperes at 61.5 Volts.  
 \*Measured across item 19.  
 J.B. = Junction Block.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1A5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 455 Kilocycles

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust both 2nd I-F trimmers for maximum reading on

the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" terminal (right-hand bracket used to fasten back) of the receiver. (Check dial pointer to see that it covers complete range.)

- (a) Set the signal generator to 1500 kilocycles.
- (b) Open the condenser gang all the way.
- (c) Adjust the "OSC" trimmer condenser on gang for maximum output.
- (d) Set the signal generator to 1400 kilocycles.
- (e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).
- (f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**
- (g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

PARTS LIST—MODEL 439

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B —48732A	Loop Antenna	16	—36688	Resistor, 3 Megohms 1/4 Watt Ins.
2	B —48697	Battery Cable	17	—35930	Resistor, 200,000 Ohms 1/4 Watt Ins.
3	G215—32002	Oscillator Coil	18	—36761	Resistor, 40,000 Ohms 1/4 Watt Ins.
4	G194—32004	1st I-F. Transformer Assembly	19	W —29585	Resistor, 600 Ohms 1/2 Watt Flex.
5	G195—32004	2nd I-F. Transformer Assembly	20	—48693	Resistor, 11 Megohms 1/4 Watt Ins.
	W —45513	No. 6—32 Pal Nut (I-F. Trans.) (4 Req.)	21	—17131	Resistor, 5 Megohms 1/4 Watt Ins.
6A } 6B }	G88 —33001	2 Sect. Var. Cond. { Antenna Section	22	—18692	Resistor, 1 1/2 Megohms 1/4 Watt Ins.
	—31388	{ Oscillator Section	23	—47131	Resistor, 5 Megohms 1/4 Watt Ins.
	—48695	No. 8—32 x 1/4" W. Hd. Screw (Var. Cond.) (2 Req.)	26	392-PL-6-"W"	Speaker, Spec.
	W —44808B	Drive Shaft		—48801	Output Transformer
	—6876	Drive Shaft Bracket		—48800	V. C. and Cone Assembly
	N —5062	No. 6—32 x 1/4" W. Hd. Mach. Screw (Drive Shaft Bracket)	27A } 27B } 27C }	—18709	Volume Control, 1 Megohm
G19	—41582	Drive Cord, 17"		W —16662	Battery Switch, A+
W	—44989	Drive Cord Spring		W —51108A	Battery Switch, B—
W	—46290	Drive Cord Clamp		G199—34403	3/8" Pal Nut (Volume Control)
W	—43549	Retaining Ring (Drive Shaft)		G200—34403	8 Prong Socket (No Marking)
D	—48923	Dial Face		—9DB	Antenna Lead (Red) (1 Req.)
	—6415	No. 8—32 x 1/4" W. Hd. Mach. Screw (Dial Face) (2 Req.)		—48061	Ground Lead (Green) (2 Req.)
O	—8	No. 8 Flat Washer (Dial Face) (2 Req.)		—48068	Cabinet
U	—49113	Dial Pointer		B —48065	Carton
	—49111	No. 6—32 x 1/4" Gulmite Screw (Dial Pointer)		W —48691	Instructions
	W —20800	No. 6 Shakeproof Washer (Dial Pointer)		W —48691	Speaker Screen
7	W —28621	Condenser, .02 Mf. 200 Volts Paper		W —44827	Dial Lens
8	G2 —34002	Condenser, .0001 Mf. Molded		W —4827	No. 8 x 3/4" H. H. P. K. Screw (Chassis Mtg.)
9	W —28621	Condenser, .02 Mf. 200 Volts Paper		W —37953	Flat Washer (Chassis Mtg.)
10	W —45783	Condenser, 16 Mf. 125 Volts Elect.		W —48705A	Knob
11	G3 —34002	Condenser, .0005 Mf. Molded		—48719A	Knob
12	W —28904	Condenser, .004 Mf. 200 Volts Paper		—48720A	Indicator Tack
13	W —28904	Condenser, .004 Mf. 200 Volts Paper		W —49071	CR-49 Battery Pack and Carton
14	G3 —34002	Condenser, .0005 Mf. Molded			

## MODEL 448 COMBINATION

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6C6	Detector	6.3	20	10	7	—	—
25L6-G	Output	25	85	98	6	—	—
25Z6-G	Rectifier	25	—	—	126	—	—

NOTE: The RED and BLACK terminals on the phono terminal board supply the current for the phono motor, therefore HAVE 110 VOLTS ACROSS THEM WHEN THE RECEIVER IS IN OPERATING POSITION. BE CAREFUL NOT TO TOUCH OR SHORT CIRCUIT THEM WHILE WORKING ON THE CHASSIS.

#### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

#### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver (after the antenna has been completely unrolled. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.

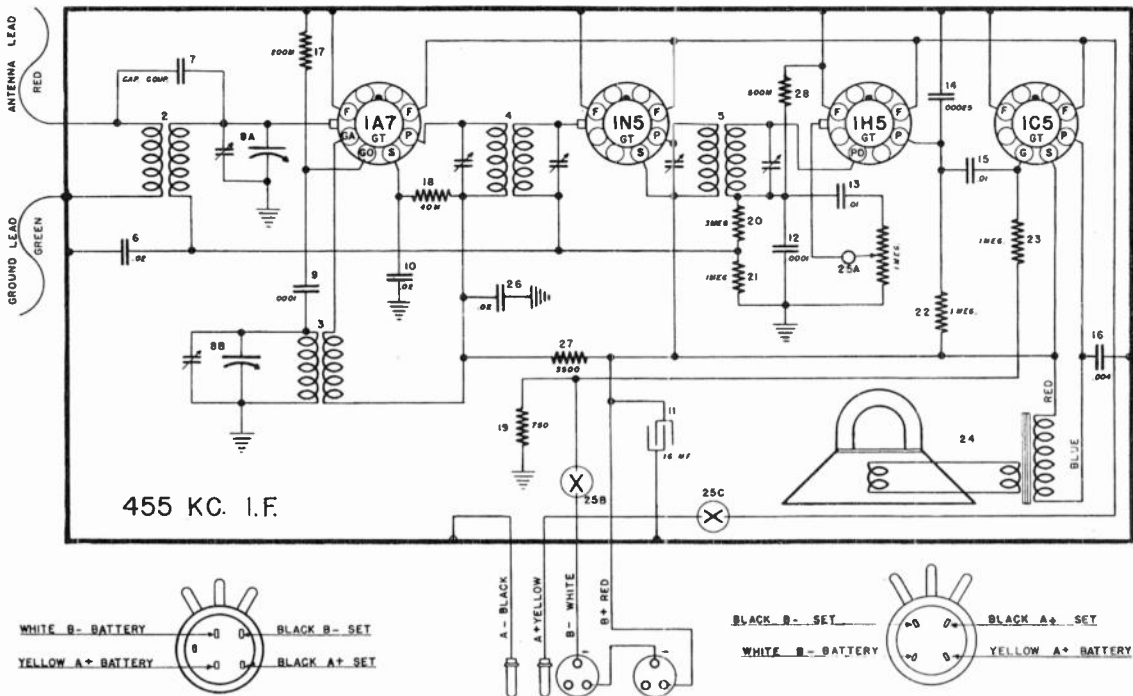
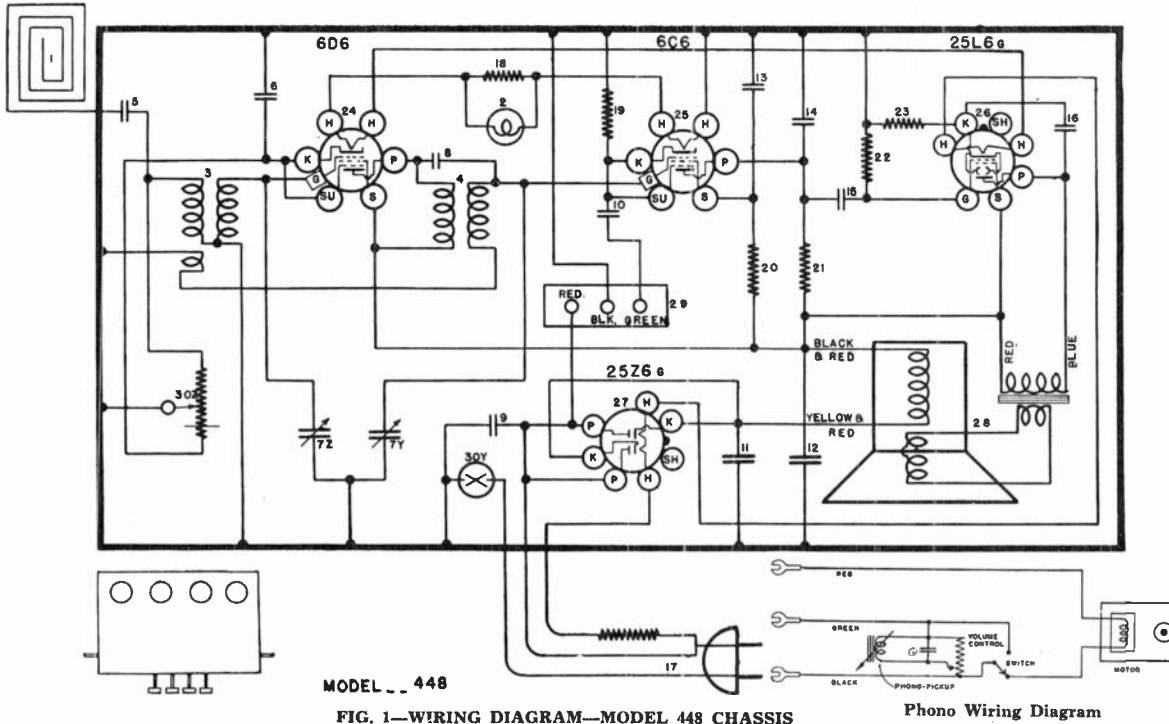
(e) Set the generator to 1400 Kc.

(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

NOTE: Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —45577B	Roll Antenna		W —45900B	Speaker Mounting Bracket
	W —40570	Dial Light Shield	29	G42 —26719	Phono. Terminal Board
2	W —44337	Dial Light 6-8 Volt	30	—45786	Line SW. & Vol. Cont. (40,000 Ohm)
	G6 —27134	Dial Light Socket		W —45789A	V. C. Mtg. Bracket
3	G180 —32000	Antenna Coil		G9 —45683	Push Button Tuning Unit
4	G104 —32001	R-F Coil		G27 —45683	Rocker Plate Assy.
5	W —45780B	Condenser, .02 Mf., 160 V.		G20 —45683	Key & Toggle Assy.
6	W —45780B	Condenser, .02 Mf., 160 V.		W —50542C	Lock Clamp
7	G53 —33001	2 Section Gang Condenser		—45717	Screw, Lock Clamp
8	G3 —50640	Condenser, .000004 Mf., (Twisted Leads)		W —50607C	Spring, Key Return
9	W —45782B	Condenser, .05 Mf., 400 V.		W —50561	Screw, Rocker Plate Bearing
10	W —45781B	Condenser, .25 Mf., 160 V.		—46177	Tuning Knob
11	W —45783	Condenser, 16 Mf., 150 V. Electr.		—46178	Vol. Control Knob
12	W —45783	Condenser, 16 Mf., 150 V. Electr.		—46182	Push Button
13	W —45780B	Condenser, .02 Mf., 160 V.		—50841	Station Call Letter List
14	G2 —34002	Condenser, .0001 Mf., Molded		W —50551A	Celluloid Cover
15	W —45780B	Condenser, .02 Mf., 160 V.		—8E	Cabinet
16	W —45871A	Condenser, .05 Mf., 160 V.		B —46166A	Back, Cabinet
17	B —46114	Power Cord & Plug (165 Ohms 20 W)		—46656	Lid Assy.
	W —45902	Cord Clamp		MG40—46153	Motor Board Assy. (487)
18	W —44396	Resistor, 40 Ohm, 3½ W.		MG42—46153	Motor Unit
19	—24990	Resistor, 25,000 Ohm, 1/3 W.		W —46172	Turn Table (10")
20	—37583	Resistor, 2.5 Meg., 1/3 W.		W —46159	Phono.-Radio Switch
21	—23785	Resistor, 500,000 Ohm, 1/3 W.		MG41—46153	Motor Mtg. Bracket & Spindle
22	—23785	Resistor, 500,000 Ohm, 1/3 W.		—46200	Friction Drive (Rubber Bushing)
23	W —45965	Resistor, 110 Ohm, ½ W.		—46160	Phono. Volume Control
24	G21 —28807	Socket 6 Prong		—35252A	Vol. Cont. Knob
25	G21 —28807	Socket 6 Prong		W —30323	Condenser, .01 Mf., 200 V.
26	G178 —36400	Socket, 8 Prong Octal		W —46171	Phono. Cable Assy.
27	G178 —36400	Socket, 8 Prong Octal		—46821	Needle Screw
	W —34175	Tube Shield (Slotted Half)		W —46364	Chrome Needle
	W —34174	Tube Shield (Plain Half)		—46162A	Magnetic Pickup
	W —31210	Tube Shield Ring		—46946	Coil & Magnet Assy. (Pickup)
28	281-BL-5"U"	Speaker Mfg. Spec. No. 5-B-130		—46947	Cast. Arm & Pivot Assy.
	—46047	Output Trans.		—46161	Nut, Arm Mounting
	281-BL-5"B"	Speaker Mfg. Spec. No. 55WA24		—46168	Instructions.
	—46687	Output Trans.			
	281-BL-5"H"	Speaker Mfg. Spec. No. S-5252-J5			
	—46797	Output Trans.			
	W —46915	Felt Gasket, Spk. Baffle			



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1A7-G	Oscillator-Modulator	1.5	72	30	—	72	—
1N5-G	I-F Amplifier	1.5	82	82	—	—	—
1H5-G	Detector & 1st A-F Amp.	1.5	10	—	—	—	—
1C5-G	Output	1.5	80	82	8*	—	—

1. Tuning I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GREEN lead of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers for maximum reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the RED lead of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	C —46433A	Battery Cable (449)	W	—46447	Tube Shield
1	C —47061	Battery Cable (459)	G178	—36400	8 Prong Socket, No Marking
2	G185—32002	Antenna Coil	<b>PUSH BUTTON PARTS</b>		
3	G201—32002	Oscillator Coil	G33	—45683	Push Button Unit Assembly
4	G194—32004	1st I. F. Transformer	G26	—45683	Riveted Key Assembly
5	G195—32004	2nd I. F. Transformer	G62	—45683	Rocker Plate Assembly
6	W —28621	Condenser, .02 Mf. 200 V. Paper	W	—50542E	Key Clip (4 Req.)
7	G6 —50640	Condenser Capacity Coupling	W	—45646B	Adjusting Clip (1 Req.)
8A	G66 —33001	2 Gang Var. Cond. { Antenna Section Oscillator Section	W	—50547	Key Plate
8B			W	—50561	No. 6—40 x 1/4" Fil. Hd. Screw (Rocker Plate Bearing)
	MG12—46750	Riveted Back Plate	W	—50588B	Adjusting Clip (3 Req.)
	G15 —43564	Pulley and Hub Assembly	W	—50607C	Key Return Spring (4 Req.)
	B —46830	Dial Face Back	—31388	—2046	No. 8—32 x 3/16" W. Hd. Mach. Screw (Key Plate)
	—45808	No. 8 x 5/16" H. H. P. K. Screw (Dial Face Back) (Drive Shaft Brkt.)	—45717	—8AK	No. 8 Shakeproof Washer (Key Plate)
	W —46831A	Dial Pointer			<b>MODEL 449 ONLY</b>
	—48160	Drive Shaft		—8AH	Cabinet
	W —43542B	Drive Shaft Bracket		—8AG	Cabinet, Ivory
	G13 —41582	Drive Cord (30")		—9FA	Cabinet, Red
	W —46087	Drive Spring		—46838	Cabinet
	W —46290	Drive Cord Clamp		—46838	Carton (8AK, 8AH, 8AG Cabinet)
	W —23877	No. 8—32 x 3/16" Set Screw (Pulley and Hub Assembly)		—46841A	Push Buttons (4 Req.) (8AK and 9FA)
	G4 —41582	Guide Cord (9")		—46879A	Push Buttons (4 Req.) (8AH and 8AG)
	W —46848	Guide Cord Spring		—46816	Rubber Bottom Machine Screw (8AK, 8AH, 8AG) (Chassis Mounting)
	C —46815A	Dial Glass		R —159	No. 8—32 x 5/8" R. H. Mach. Screw (Chassis Mounting) (9FA)
	W —46321	Speed Nut (2 Req.) (8AK, 8AH and 8AG) (849 Only)	W	—30409	Flat Washer (Chassis Mounting) (9FA)
9	G2 —34002	Condenser, .0001 Mf. Molded		—46953	Knob (2 Req.) (8AK)
10	W —28621	Condenser, .02 Mf. 200 V. Paper		—44552	Knob (2 Req.) (8AH and 8AG)
11	W —48122	Condenser, 16 Mf. 250 V. Elect.	W	—47483	Knob (2 Req.) (9FA)
12	G2 —34002	Condenser, .0001 Mf. Molded	MG31	—47899	Instruction, Env. Assy. (B-449-A and B-449-D)
13	W —30323	Condenser, .01 Mf. 200 V. Paper	MG32	—47899	Instruction, Env. Assy. (B-449-B and B-449-C)
14	G1 —34002	Condenser, .00025 Mf. Molded			<b>MODEL 459 ONLY</b>
15	W —30323	Condenser, .01 Mf. 200 V. Paper		—9DC	Cabinet
16	W —28904	Condenser, .004 Mf. 200 V. Paper		—48151A	Carton (9DC)
17	—34018	Resistor, 200,000 Ohms 1/2 W. Carb.		—46953	Knob (2 Req.)
18	—21453	Resistor, 40,000 Ohms 1/2 W. Carb.		—46841A	Push Button (4 Req.)
19	W —22514	Resistor, 750 Ohms 1/2 W. Flex.	R	—159	No. 8—3/2 x 5/8" Rd. Hd. Mach. Screw (4 Req.) (Chassis Mtg.)
20	—26577	Resistor, 3 Megohms 1/2 W. Carb.	W	—30409	Flat Washer (4 Req.) (Chassis Mtg.)
21	—21454	Resistor, 1 Megohm 1/2 W. Carb.	MG26	—47926	Instruction, Env. Assy.
22	—21454	Resistor, 1 Megohm 1/2 W. Carb.	CR28		Crosley "A" and "B" Battery Pack (459 or 449)
23	—21454	Resistor, 1 Megohm 1/2 W. Carb.			
24	274-PL-8-"B"	Speaker, Spec. (Model 449)			
	—47292	Output Transformer			
24	274-PLS-8-"B"	Speaker, Spec. (Model 459)			
	—47292	Output Transformer			
25A	—48327	Volume Control			
25B		Switch "B" Supply			
25C		Switch "A" Supply			
25A		Volume Control			
25B	—48155	Switch "B" Supply			
25C		Switch "A" Supply			
25C		Volume Control			
	W —46662	3/8" Pal Nut (Volume Control)			
26	W —28621	Condenser, .02 Mf. 200 V. Paper			
27	—30137	Resistor, 3,500 Ohms 1/2 W. Carb.			
28	—23785	Resistor, 500,000 Ohms 1/2 W. Carb.			

## MODEL 458 (Battery Vanity)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	G <sub>a</sub>	G <sub>o</sub>
1A7-G	Oscillator-Modulator	1.5	82	13	0	82	-6
1N5-G	I-F Amplifier	1.5	82	82	0	---	---
1H5-G	Detector & 1st A-F Amp.	1.5	17	---	0	---	---
1C5-G	Output	1.5	78	82	8*	---	---

Power Output approximately .5 Watt.

"A" Battery Drain approximately .25 Ampere at 1.5 Volts.

"B" Battery Drain approximately 9 Milliampere at 90 Volts.

\*Measured at No. 8 Socket Lug and Chassis.

### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers (located through rear of chassis flange) for maximum reading on the output meter.

(e) Adjust both trimmers located on the 1st I-F transformer (right end) for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

### 2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	C -46433A	Battery Cable	28A	-46135	Volume Control, 1 Megohm "A" Supply Switch "B" Supply Switch Cabinet 8BB
2	G176-32000	Antenna Coil	28B		
3	G177-32002	Oscillator Coil	28C		
4	G194-32004	1st I.F. Transformer		-46259	Knob, Volume Control
5	G201-32004	2nd I.F. Transformer		-45822	Knob, Dial
6	G6 -50640	Condenser Capacity Coupling		W -45931A	Rubber Foot and Screw
7	W -28621	Condenser, .02 Mf. 200 V. Paper		-45533B	Push Button
8A	G65 -33001	Var. Condenser, Antenna Section		W -45852A	Baffle Board
8B				W -45852	Grille Cloth
9	G2 -34002	Condenser, .0001 Mf. Molded		-50841	Call Letter Sheet
10	W -28621	Condenser, .02 Mf. 200 V. Paper		W -50551A	Call Letter Cover
11	G3 -50540	Capacity Condenser Coupling		W -45930C	Rubber Foot
12	W -45783	Condenser, 16 Mf. 125 V. Elect.		-46150	Instructions
13A	W -44882	Trimmer Condenser		G26 -45683	Riveted Key Assy.
13B				G27 -45683	Rocker Plate Assy.
14	G1 -34002	Condenser, .00025 Mf. Molded		W -50542C	Key Clip (Lock Clamp)
15	W -28621	Condenser, .02 Mf. 200 V. Paper		W -50561	No. 6 x 10 x 1/8" Fil. Hd. Screw, Rocker Plate Bearing
16	G5 -31002	Condenser, .00005 Mf. Molded		W -50517	Key Plate
17	W -28621	Condenser, .02 Mf. 200 V. Paper		W -50607C	Push Button Spring
18	W -28901	Condenser, .004 Mf. 200 V. Paper		-45717	No. 6 x 32 x 1 1/4" Fil. Hd. Screw, Clamp Adjusting
19	21451	Resistor, 1 Megohm 1/2 W. Carbon		-31388	No. 8 x 32 x 1/4" H. H. Mach. Screw, Key Plate Mounting Screw
20	31018	Resistor, 200,000 Ohm 1/2 W. Carbon		2046	No. 8 Shokproof Washer, Key Plate Screw
21	36761	Resistor, 40,000 Ohm 1/2 W. Carbon			
22	36688	Resistor, 3 Megohm 1/2 W. Carbon			
23	W -35581	Resistor, 1,000 Ohm 3/4 W. Flexible			
24	-36322	Resistor, 500,000 Ohm 1/2 W. Carbon			
25	-36322	Resistor, 500,000 Ohm 1/2 W. Carbon			
26	-36322	Resistor, 500,000 Ohm 1/2 W. Carbon			
27	274-PL-5-"B"	Speaker, Spec. 55PWS1 (P. M.)			
	-47083	Cone and V. C. Assy.			
	-47084	Output Transformer			
	-46685	Cardboard Ring			



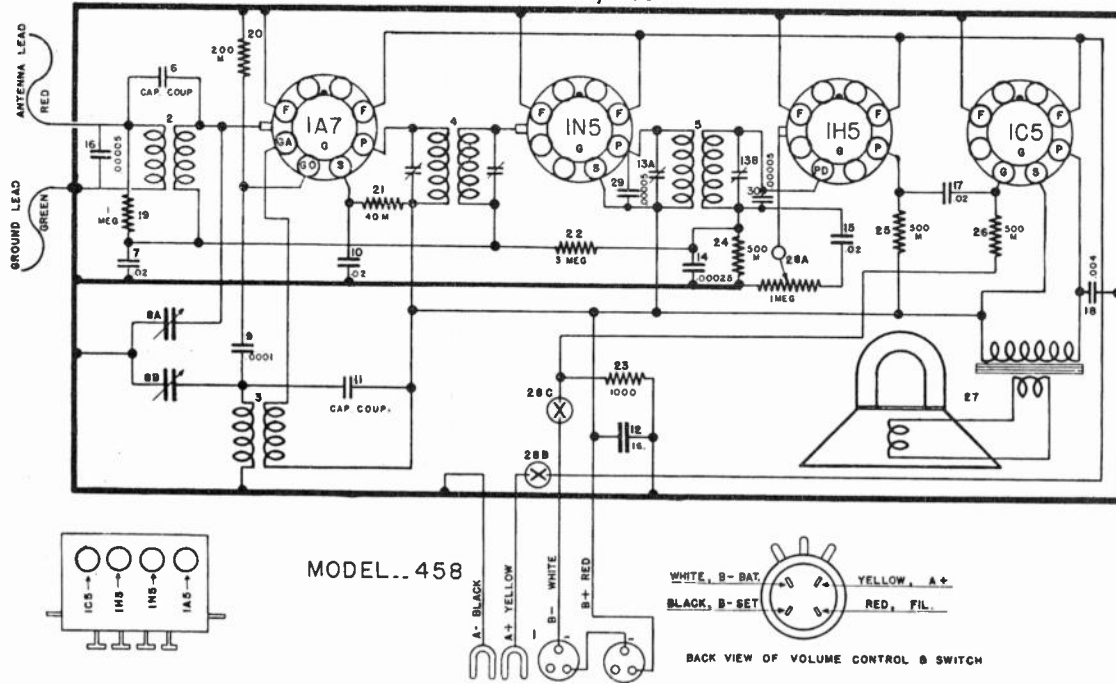


FIG. 1—WIRING DIAGRAM—MODEL 458

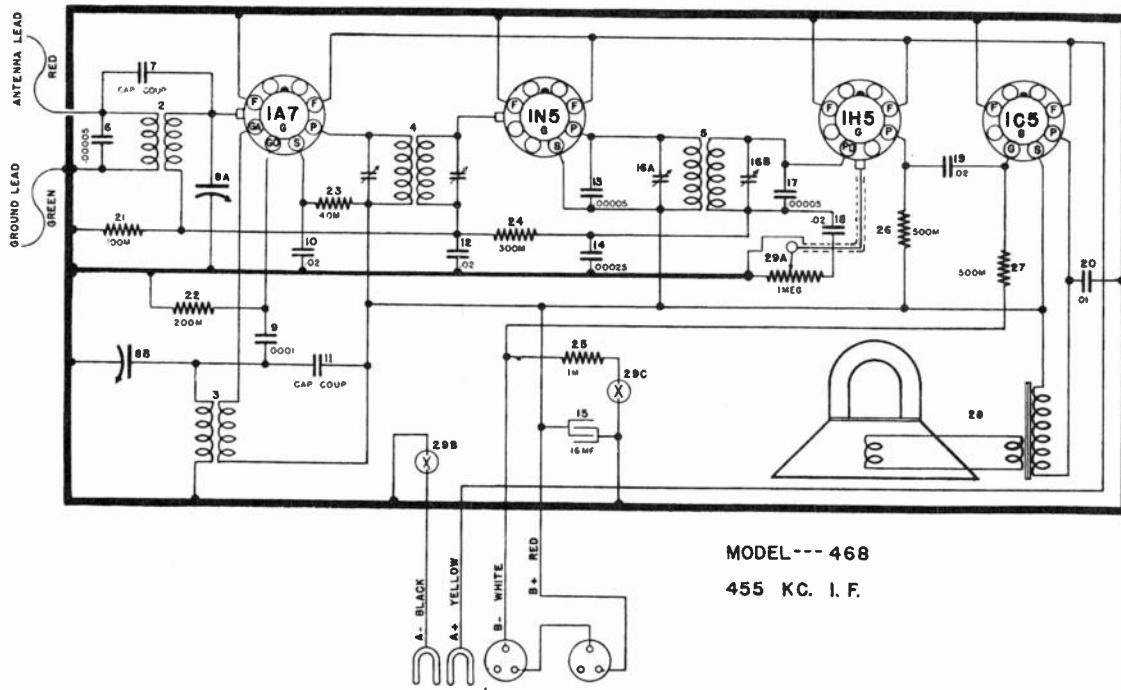


FIG. 1—WIRING DIAGRAM MODEL 468

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G	Ga	Go
1A7-G	Oscillator-Modulator	1.5	82	43	0	82	-6
1N5-G	I-F Amplifier	1.5	82	82	0	---	---
1H5-G	Detector & 1st A-F Amp.	1.5	17	---	0	---	---
1C5-G	Output	1.5	78	82	8*	---	---

Power Output approximately .5 Watt.

"A" Battery Drain approximately .25 Ampere at 1.5 Volts.

"B" Battery Drain approximately 9 Milliampere at 90 Volts.

\*Measured at No. 8 Socket Lug and Chassis.

**1. Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers (located through rear of chassis flange) for maximum reading on the output meter.

(e) Adjust both trimmers located on the 1st I-F transformer (right end) for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**2. Aligning the R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	C -47061	Battery Cable	29A		Volume Control, 1 Megohm
	W -45092	Cable Clamp	29B	-46435	Switch "A" Supply
2	G177-32000	Antenna Coil	29C		Switch "B" Supply
3	G177-32002	Oscillator Coil	G178	-36400	8 Prong Socket (No Marking)
4	G194-32004	1st I. F. Transformer	G34	-45683	Push Button Unit Assembly
5	G204-32004	2nd I. F. Transformer (Coil only)	G29	-45683	Riveted Key Assembly
6	G5 -34002	Condenser, .00005 Mf. Molded	G27	-45683	Rocker Plate Assembly
7	G6 -50640	Condenser (Capacity Coupling) Ant.	W	-50547	Key Plate
8A		Variable Condenser, Antenna Sect.		-31388	Key Plate Mounting Screw (2 Req.)
8B	G69 -33001		Oscillator Sect.		-45717
9	G2 -34002	Condenser, .0001 Mf. Molded	W	-50607C	Key Return Spring (4 Req.)
10	W -28621	Condenser, .02 Mf. 200 V. Paper		-2046	No. 8 Shakeproof Washer (2 Req.)
11	G3 -50640	Condenser (Capacity Coupling) Osc.	W	-50561	Rocker Plate Bearing Screw (2 Req.)
12	W -28621	Condenser, .02 Mf. 200 V. Paper		-8DB	Cabinet
13	G5 -34002	Condenser, .00005 Mf. Molded		-17048	Cabinet Carton (Shipping)
14	G1 -34002	Condenser, .00025 Mf. Molded		-43886	Chassis Screws (3 Req.)
15	W -45783	Condenser, 16 Mf. 125 V. Elect.		-2118	Shakeproof Washer (Speaker)
16A		Condenser Trimmer, 2nd I. F.	N	-6	Hex. Nut (Speaker)
16B	W -44882				-45553B
17	G5 -34002	Condenser, .00005 Mf. Molded		-45822	Dial Knob
18	W -28621	Condenser, .02 Mf. 200 V. Paper		-45825A	Volume Control Knob
19	W -28621	Condenser, .02 Mf. 200 V. Paper		-47053	Instructions
20	W -30323	Condenser, .01 Mf. 200 V. Paper		-47863	Call Letter Sheets
21	-21875	Resistor, 100,000 Ohms 1/3 W. Carb.	W	-50551B	Call Letter Cover
22	-34018	Resistor, 200,000 Ohms 1/3 W. Carb.	W	-32116A	Chassis Washer, Extruded (3 Req.)
23	-36761	Resistor, 40,000 Ohms 1/3 W. Carb.	W	-45579	Chassis Washer, Flat (3 Req.)
24	-21455	Resistor, 300,000 Ohms 1/3 W. Carb.		-17065	No. 6 -32 x 1" F. H. Mach. Screw
25	W -35581	Resistor, 1,000 Ohms 3/4 W. Flex.			
26	-36322	Resistor, 500,000 Ohms 1/4 W. Ins.			
27	36322	Resistor, 500,000 Ohms 1/4 W. Ins.			
28	271PL7"B"	Speaker, Spec. 511PRW2 (P. M.)			
	-47292	Speaker Cone and V. C. Assembly			
	-47293	Output Transformer			
	-46685	Cardboard Ring			

MODELS 525 AND 505

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	G	K	S	Su	Ga	Go
6A7	Osc-Mod	6.3	215	0	3	105	0	105	-4
6D6	I. F. Amp.	6.3	215	0	3	105	3	—	—
75	Detector & A. F. Amp.	6.3	80	0	.75	—	—	—	—
41	Output	6.3	205	0	16	215	—	—	—
80	Rectifier	4.9	280	—	—	—	—	—	—

1. Peaking I. F. Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6A7 Osc-Mod tube, leaving the tube's grid clip in place. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER S. C. TUBES.

(b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

(c) Set the signal generator to 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.

(e) Turn the band selector switch to the right hand position. (Short Wave Band).

(f) Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the I. F. transformers. for maximum output.

NOTE: Make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency. An insulated screw driver should be used to insure accurate adjustments.

2. Aligning R. F. Circuits.

(a) Turn the band selector switch to the left hand position. (Broadcast Band).

(b) Leave the receiver tuning condenser rotor plates completely out of mesh.

(c) Connect the output lead from the signal generator through a .00025 mfd., series condenser to the antenna terminal of the receiver.

(d) Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output. (Fig. 3).

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

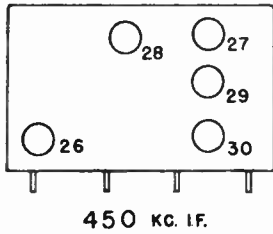
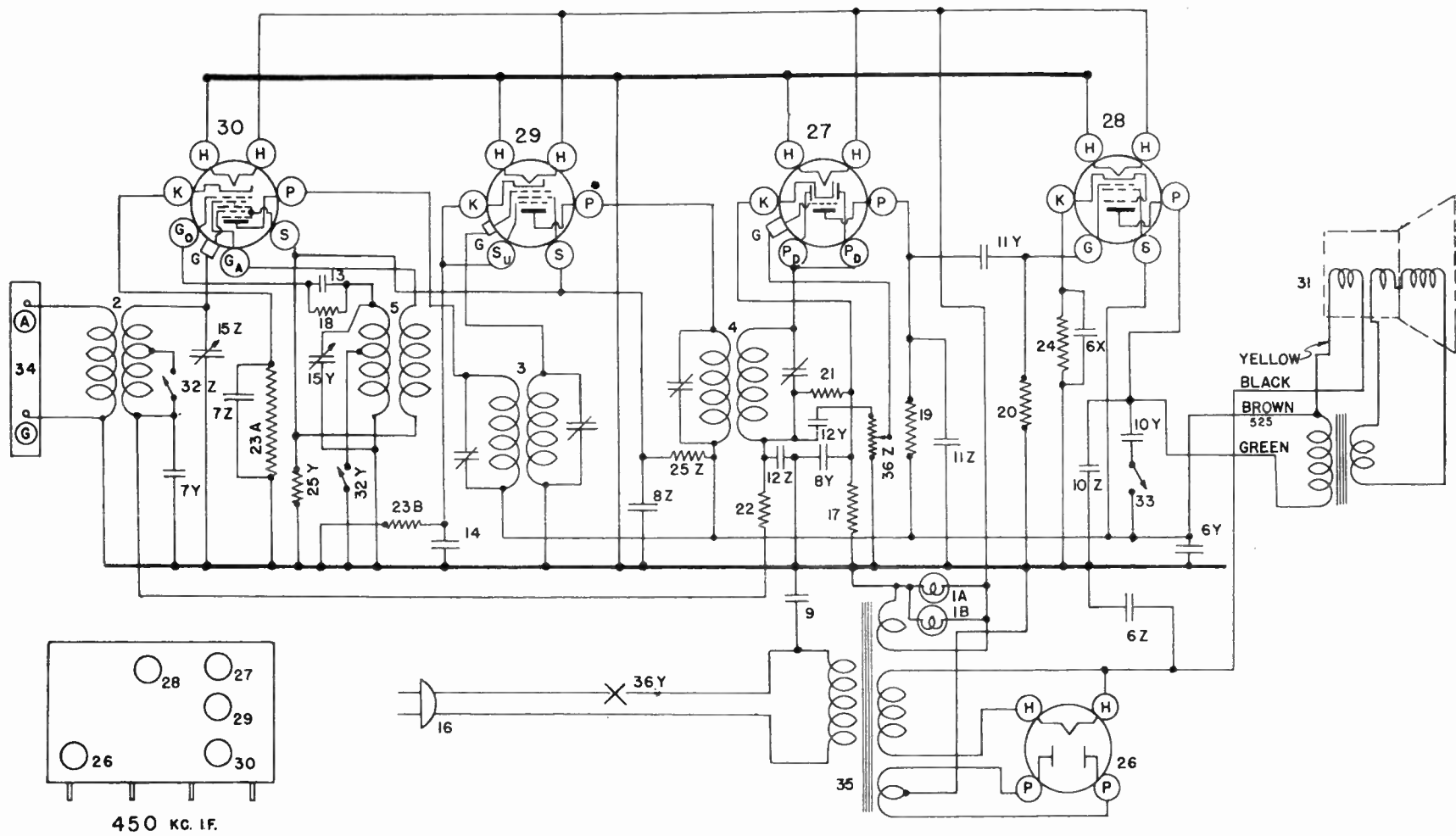
NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1A	G4-27134	Dial Light Bracket Assembly	16	B-3390FA	Cord, Power Supply	
1B	G4-27134	Dial Light Bracket Assembly	17	-21876	Resistor, 10,000 Ohms	
2	G42-32000	Coil, Ant. Trans.	18	-21453	Resistor, 40,000 Ohms	
	W-30802A	Coil Shield	19	-21455	Resistor, 300,000 Ohms	
	W-30026A	Coil Retaining Ring	20	-23785	Resistor, 500,000 Ohms	
	W-36178	Coil Insulator	21	-21454	Resistor, 1 Megohm	
3	G50-32004	Coil, 1st. I. F.	22	-26577	Resistor, 3 Megohm	
	G3-31927	Coil Shield	23A	-25937	Resistor, 275 Ohms, 1 1/2 Watt Flex.	
	W-35037A	Coil Insulator	23B	-25937	Resistor, 275 Ohms, 1 1/2 Watt Flex.	
4	G49-32004	Coil, 2nd. I. F.	24	W-23907	Resistor, 750 Ohms, 1 1/2 Watt Flex.	
	G3-31927	Coil Shield	25Z	W-35963	Resistor, 8,500 Ohms, 3 Watt	
	W-35037A	Coil Insulator	25Y			
5	G43-32002	Coil Oscillator	26	G6-28807	Socket 80	
	W-25025B	Coil Shield	27	G41-28807	Socket 75	
	W-21541C	Coil Retaining Ring		W-35774	Tube Shield Base	
	W-26891	Coil Insulator		W-35772	Tube Shield Half (2 used)	
6Z	W-35750	Condenser, 8 Mfd. 450 Volt		W-35773	Tube Shield Cap	
6Y		Condenser, 6 Mfd. 450 Volt	28	G22-28807	Socket 41	
6X		Condenser, 12 Mfd. 25 Volt	29	G75-28807	Socket 6D6	
7Z	W-28623	Condenser, .02 Mfd. 200 Volt		W-35774	Tube Shield Base	
7Y		Condenser, .02 Mfd. 200 Volt		W-35772	Tube Shield half (2 used)	
8Z	W-28622	Condenser, 0.1 Mfd. 200 Volt		W-35773	Tube Shield Cap	
8Y		Condenser, 0.1 Mfd. 200 Volt	30	G47-28807	Socket 6A7	
9	W-30805	Condenser, .01 Mfd. 400 Volt		W-35774	Tube Shield Base	
10Z	W-35011	Condenser, .006 Mfd. 400 Volt		W-35772	Tube Shield half (2 used)	
10Y		Condenser, .03 Mfd. 400 Volt		W-35773	Tube Shield Cap	
11Z	W-25537A	Condenser, .001 Mfd. 400 Volt	31	-36278	Speaker, 318 BL9	
11Y		Condenser, .03 Mfd. 400 Volt	32Z	W-35753A	Switch, Ant.	
12Z	W-30322A	Condenser, .00017 Mfd.	32Y			
12Y		Condenser, .006 Mfd.	33	W-36184A	Switch, Tone Control	
13	G1-34002	Condenser, .00025 Mfd.	34	G10-26719	Terminal, Ant. Gnd.	
14	W-28621	Condenser, .02 Mfd.	35	G5-28500	Transformer, Power, 60 Cy., 110 Volt	
15Z	35751A	Condenser, 2 Gang Var. R.F. 360		G6-28500	Transformer, Power, 25 Cy., 110 Volt	
15Y		Condenser, 2 Gang Var. 450		G7-28500	Transformer, Power, 25 Cy., 220 Volt	
		-36148	Dial Drive Unit, complete	36Z	W-36227	Volume Control, 4,800 Ohm, 160 Ohm fixed.
		-36156	Dial Pointer	36Y		
		-36157	Dial Pointer Screw			
	-36158	Dial Lens	W-31585B	On-Off Switch		
	G16-35757	Dial Drive Mounting Bracket Assem.	B-35917	Knobs		
				B-35917	Escutcheon	

NOTE:—Part numbers with A, B, etc., following, mean duplicate parts. Part numbers with Z, Y, X, etc., following, mean parts having multiple sections.



450 KC. IF.

FIG. 1. WIRING DIAGRAM—MODEL 525 & 505

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Ga	Go	G
6A7	Oscillator-Mod.	6.5	100	40	1	100	-20	--
75	Det. & A-F Amp.	6.5	11	—	1	—	—	—
43	Output	25.0	95	100	0	—	—	-20
25Z5	Rectifier	25.0	—	—	100	—	—	—
W-43357	Ballast Tube.							

Power output approximately 1 watt.  
 Power consumption approximately 50 watts.  
 Voltage drop across speaker field 112 volts.  
 All readings taken on 117.5 volt A. C. power supply.  
 All readings except filaments will be approximately 15% lower on 117.5 volts D. C.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected through a resistor to one side of the power supply and for this reason all test equipment should be thoroughly isolated in order that the power supply will not be short circuited while attempting to align the receiver.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6A7 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator direct to the receiver chassis **but do not run a wire direct to ground. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the

condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the I-F trimmer condensers for maximum reading on the output meter.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead of the signal generator through a .00005 mf. condenser to the **junction of the antenna and antenna blocking condenser** (Items 34 and 29).

(b) Set the signal generator to 1725 kilocycles.

(c) Open gang all the way (minimum capacity).

(d) Adjust the trimmer located on the "Osc" section of the gang for maximum output.

(e) Set signal generator to 1400 Kc.

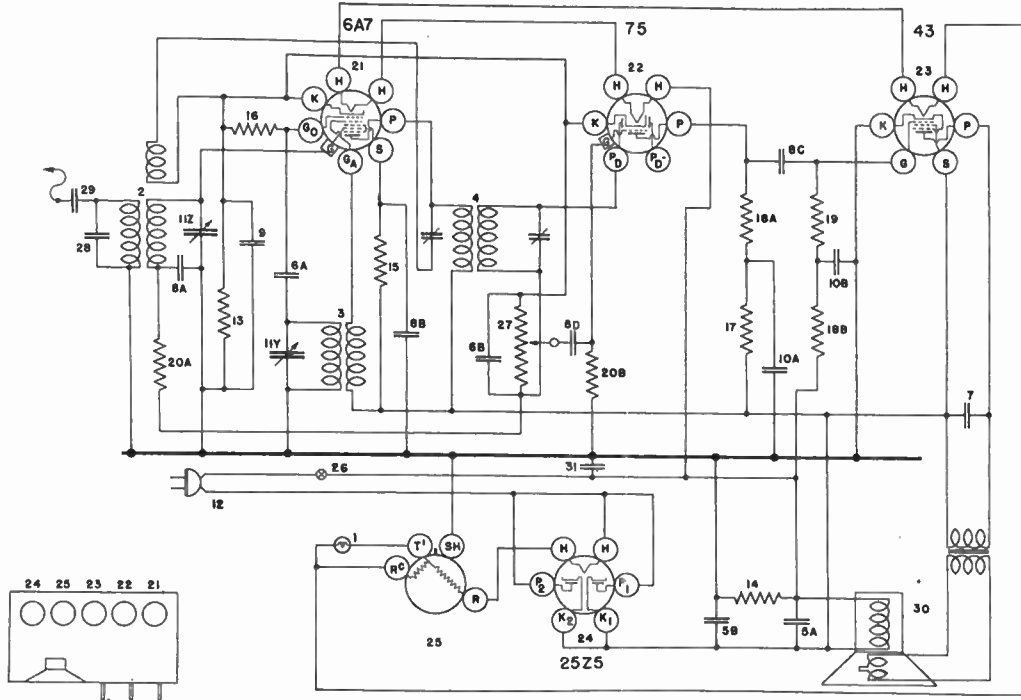
(f) Tune station selector to 1400 kc. signal.

(g) Adjust the trimmer located on the "Ant" section of the gang for maximum output.

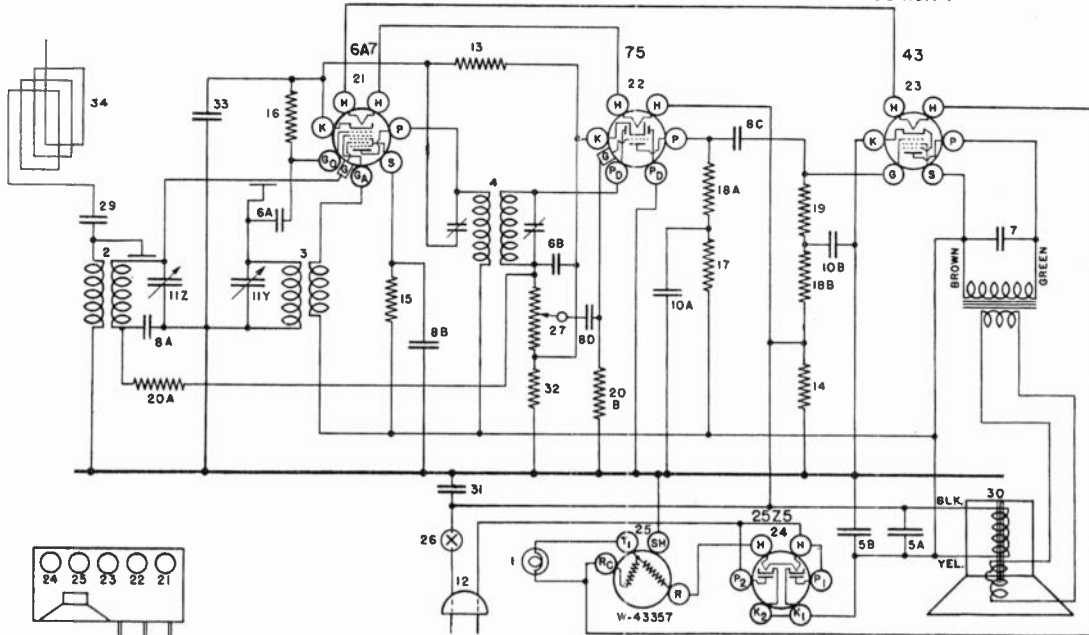
(h) Repeat e, f, and g for more accurate adjustment.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —4099B	Dial Light Bulb	20AB	—35927	Resistor, 2 Megohm ¼W.
	G6 —27134	Socket Assy. Dial Light	21	G47 —28807	Socket Type 6A7
2	G129—32000	Ant. Coil	22	G41 —28807	Socket Type 75
3	G129—32002	Osc. Coil	23	G30 —28807	Socket Type 43
4	G137—32004	I-F. Assy.	24	G51 —28807	Socket Type 25Z5
	W —36140	I-F. Trimmer Cond. (only)	25	G170—34600	Socket Type W-43357
	LW —43337	I-F. Coil (only)		W —28632	Tube Shield
5AB	W —43280	Condenser, 25 Mf. 150 V.	26	—43339	Line Switch
6AB	G1 —34002	Condenser, .00025 Mf. 200 V.	27	—43340	Volume Control, 1 Meg.
7	W —31647	Condenser, .006 Mf. 400 V.	28	G5 —34002	Condenser, .00005 Mf. 200 V.
8ABCD	W —28621	Condenser, .02 Mf. 200 V.	29	W —30325A	Condenser, .003 Mf. 200 V.
9	W —37988	Condenser, .017 Mf. 200 V.	30	255BL6Q	Speaker - Spec. 23393
10AB	W —29910A	Condenser, .25 Mf. 200 V.		—43464	Cone Assy. (above Spk.)
11	G28 —33001	2 Gang Var. Tuning Cond.		—43465	Output Trans. (above Spk.)
12	B —27885A	Power Cord and Plug		—43466	Mtg. Ring, Cone (above Spk.)
13	W —35467	Resistor, 275 Ohm ½W. Flex.		—6DD	Cabinet
14	W —23907	Resistor, 750 Ohm 1½W. Flex.		D —43302	Dial
15	—36761	Resistor, 40,000 Ohm ¼W.		W —43321	Pointer Knob
16	—35928	Resistor, 60,000 Ohm ¼W.		W —43320	Knob—V. C. & Sw.
17	—35600	Resistor, 100,000 Ohm ¼W.	31	W —23615	Condenser, .05 Mfd. 400 V.
18AB	—35601	Resistor, 300,000 Ohm ¼W.			
19	—36322	Resistor, 500,000 Ohm ¼W.			

MODEL 506



MODEL 506 450 KC. I-F



MODEL--506 450 K.C. I.F.

WIRING DIAGRAM--MODEL 506

For Serial Numbers Above 1,308,741

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-4099B	Dial Light Bulb	21	G47-28807	Socket Type 6A7
2	G6-27134	Socket Assembly Dial Light	22	G41-28807	Socket Type 75
3	G135-32000	Ant. Coil	23	G30-28807	Socket Type 43
4	G135-32002	Osc. Coil	24	G51-28807	Socket Type 25Z5
	G143-32004	I-F Assembly	25	G170-34600	Socket Type W-43357
5AB	W-36140	I-F Trimmer Cond. (only)	W	-28632	Tube Shield
6AB	W-43280	Condenser, .0025 Mf. 200 V.	26	-43339	Line Switch
7	G1-34002	Condenser, .006 Mf. 400 V.	27	-43340	Volume Control, 1 Meg.
8ABCD	W-28621	Condenser, .02 Mf. 200 V.	28	W-30325A	NONE
9	W-29910A	Condenser, 25 Mf. 200 V.	29	255BL6Q	Condenser, .003 Mf. 200 V.
10AB	G32-33001	2 Gang Var. Tuning Cond.	30	-43464	Speaker - Spec. 23393
11	B-27885A	Power Cord and Plug		-43466	Cone Assembly (above Speaker)
12	W-35467	Resistor, 275 Ohm 1/2 W. Flex.		-43466	Output Trans. (above Speaker)
13	W-23907	Resistor, 750 Ohm 1 1/2 W. Flex.		-6DD	Mtg. Ring, Cone (above Speaker)
14	W-36761	Resistor, 40,000 Ohm 1/2 W.	D	-43302	Cabinet
15	W-35928	Resistor, 60,000 Ohm 1/2 W.	W	-43321	Pointer Knob
16	W-35600	Resistor, 100,000 Ohm 1/2 W.	W	-43320	Knob-V. C. and Sw.
17	W-35601	Resistor, 300,000 Ohm 1/2 W.	W	-23615	Condenser, .05 Mfd. 400 V.
18AB	W-35322	Resistor, 500,000 Ohm 1/2 W.	32	W-21964	Resistor, 165 Ohm 1/2 W. Flex.
19	W-35927	Resistor, 2 Megohm 1/2 W.	33	W-43627	Condenser, .009 Mfd. 160 V.
20AB			34	W-31765	Antenna Wire Roll

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Det & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.  
 Power consumption approximately 40 watts at 117.5 volts.  
 Voltage drop across speaker field 36 volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 6K6G output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the

2nd I-F transformer for maximum reading on the output meter.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser for maximum output.

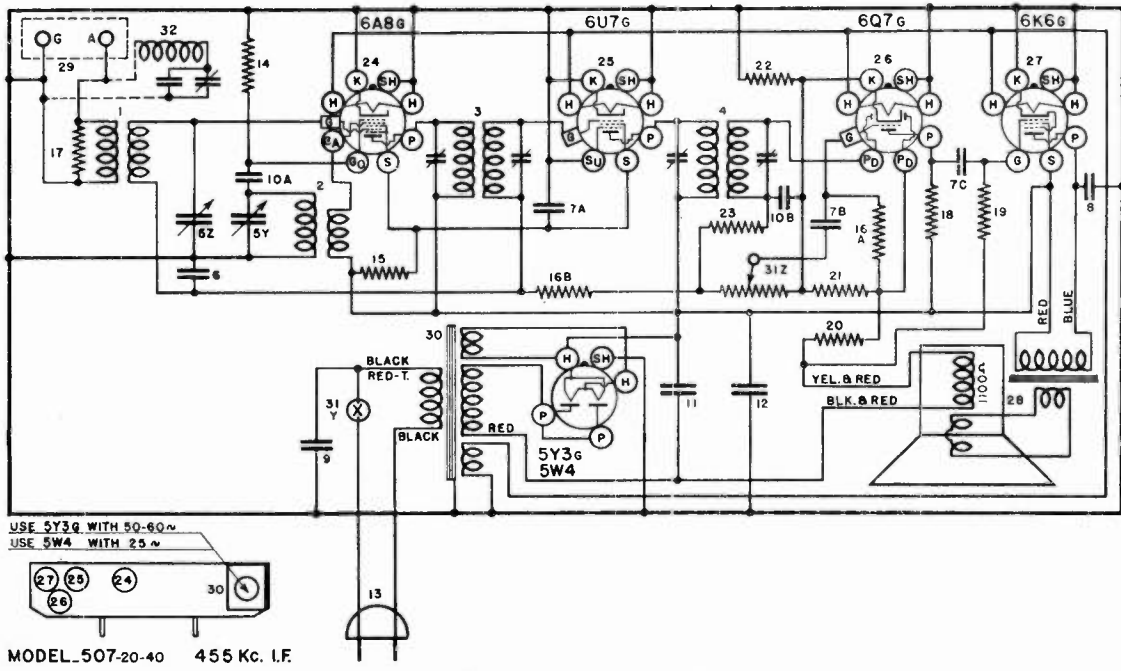
(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (appx. 140 on the dial).

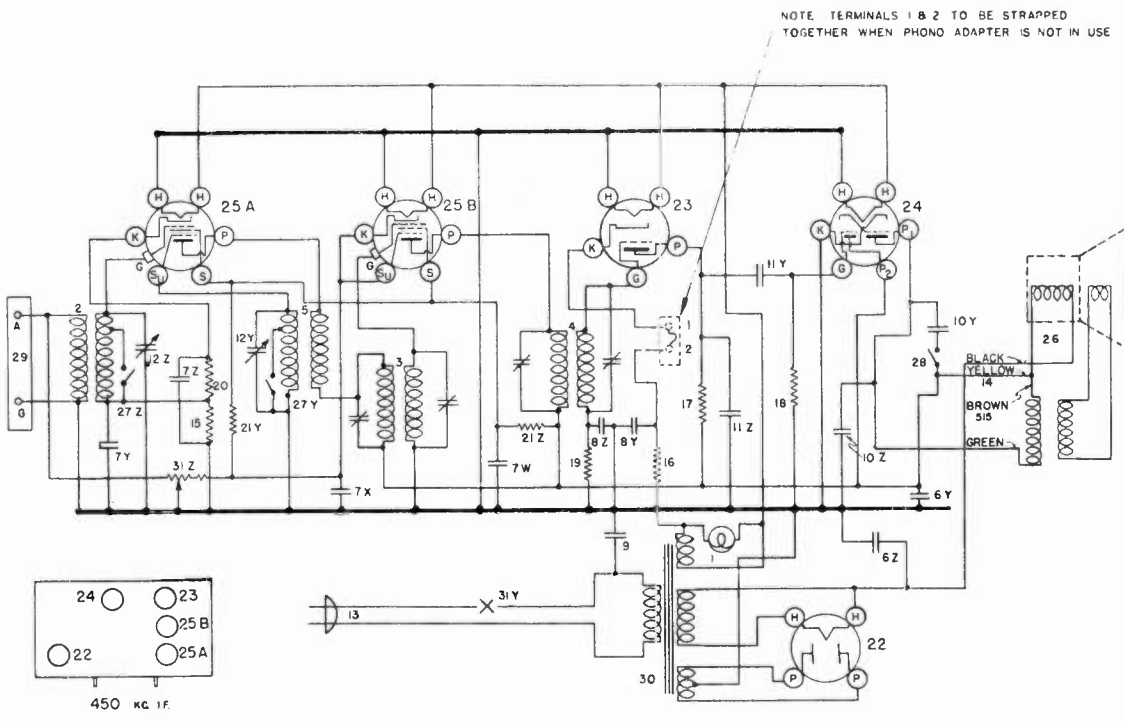
(f) Adjust the "ANT" trimmer condenser for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G132-32000	Ant. Coil	20	W -25937	Resistor, 275 Ohm 1/2W. Flex.
2	G132-32002	Osc. Coil	21	W -23012A	Resistor, 40 Ohm 1/4W. Flex.
3	G177-32004	1st I-F.	22	W -24357	Resistor, 75 Ohm 1/4W. Flex.
4	G178-32004	2nd I-F.	23	-36761	Resistor, 40,000 Ohm 1/4W. Insu.
5	G48 -33001	2 Section Gang Cond.	24	G156-36400	Socket, Type 6A8
	W -45368B	Pointer Shaft	25	G171-36400	Socket, Type 6U7
	W -45367	Pointer Shaft Bracket	26	G160-36400	Socket, Type 6Q7
	-41582	Drive Cord (9-inch)	27	G172-36400	Socket, Type 6K6
	W -44635	Tension Spring		W -40911	Tube Shield (6U7-G)
	W -45155B	Pointer	28	275BL7"B"	Speaker
6	W -36541	Condenser, .02 Mf. 160 V.		-45467	V. C. and Cone Assy.
7A	W -28621	Condenser, .02 Mf. 200 V.	29	G1 -26719	Ant. and Gnd. Terminal Assy.
7B	W -28621	Condenser, .02 Mf. 200 V.	30	-45149	Power Trans., 50-60 Cy.—110 V.
7C	W -28621	Condenser, .02 Mf. 200 V.		-45148	Power Trans., 25 Cy.—110 V.
8	W -34647	Condenser, .006 Mf. 400 V.	31	-45162	Vol. Cont. (1 Meg.) and Line Switch
9	W -30805	Condenser, .01 Mf. 400 V.	32	G165-32004	Wave Trap
10A	G1 -34002	Condenser, .00025 Mf. Molded		W -45198A	Speaker Screen
10B	G1 -34002	Condenser, .00025 Mf. Molded		C -45173A	Escutcheon
11	W -44012	Condenser, 16 Mf. 250 V.		W -45380	Knob (2 Req.)
12	W -43450	Condenser, 16 Mf. 200 V.		W -45157	Chassis Mtg. Brkt.
13	B -44867	Power Cord and Plug		C -45158B	Chassis Bottom Cover
14	-21237A	Resistor, 60,000 Ohm 1/2W. Carb.		W -45401	Support Angle—to Brkt. on Spkr.
15	-24990	Resistor, 25,000 Ohm 1/2W. Carb.		W -45402B	Support Brkt.—to Spkr. Stud
16A	-26577	Resistor, 3 Megohm 1/2W. Carb.		W -23880	Thumb Screw—Sup. Angle Mtg.
16B	-26577	Resistor, 3 Megohm 1/2W. Carb.			
17	-22196	Resistor, 20,000 Ohm 1/2W. Carb.			
18	-35601	Resistor, 300,000 Ohm 1/4W. Insu.			
19	-23785	Resistor, 500,000 Ohm 1/2W. Carb.			



WIRING DIAGRAM—MODEL 507



WIRING DIAGRAM OF MODELS 515 AND 5515



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	P2	K
6D6	Osc-Mod	6.3	210	120	0	28	—	31
6D6	I. F. Amp	6.3	210	120	3	0	—	3
76	Detector	6.3	86	—	—	0	—	8.5
6B5	Output	6.3	200	—	—	0	210	0
80	Rectifier	4.9	280	—	—	—	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

Connecting Output Meter.

Connect one terminal of the output meter to P1 and the other terminal to P2 of the 6B5 output tube. Looking at the bottom of the tube with the filament prongs toward you P1 will be the first prong to the left of the filaments and P2 will be next to P1. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Peaking I. F. Stages at 450 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6D6 Osc.-Mod. tube, leaving the tube's grid clip in place. **KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**
- (b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.
- (c) Set the signal generator to 450 kilocycles.
- (d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.
- (e) Turn the band selector switch to the right hand position. (Short Wave Band).
- (f) Turn the volume control of the receiver on full.
- (g) With the signal generator set to the lowest usable

output level adjust the I. F. trimmer condensers located on top of the I. F. transformers, for maximum output.

NOTE: Make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency. An insulated screw driver should be used to insure accurate adjustments.

2. Aligning R. F. Circuits.

- (a) Turn the band selector switch to the left hand position. (Broadcast Band).
- (b) Leave the receiver tuning condenser rotor plates completely out of mesh.
- (c) Connect the output lead from the signal generator through a .00025 mfd., series condenser to the antenna terminal of the receiver.
- (d) Set the signal generator to approximately 1570 kilocycles.
- (e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output.
- (f) Set the signal generator to 1400 kilocycles.
- (g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

- (h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

NOTE: There are no adjustments on this receiver for the Police Band.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G4—27134	Dial Light Socket Assembly.	23	G80—28807	Socket, 76.
2	G42—32000	Coil Ant.	24	G90—28807	Socket, 6B5.
3	G48—32004	1st. I. F. Trans.	25A	G75—28807	Socket, 6D6.
4	G49—32004	2nd. I. F. Trans.	25B	G75—28807	Socket, 6D6.
5	G47—32002	Osc. Coil.	W	—35772	Tube Shield, Half.
6Z	W —36719	Condenser, 8 Mfd., 450 Volts.	W	—35773	Tube Shield Cap.
6Y		Condenser, 6 Mfd., 450 Volt.	W	—35774	Tube Shield Base.
7Z		Condenser, 0.02 Mfd. 200 Volt.		—219-BL9	Speaker.
7Y	W —28623	Condenser, 0.02 Mfd. 200 Volt.	26		
7X		Condenser, 0.02 Mfd. 200 Volt.	27Z	W —35753A	Band Change Switch.
7W	W —28623	Condenser, 0.02 Mfd. 200 Volt.	27Y		
8Z		Condenser, 0.1 Mfd. 200 Volt.	28	W —36184A	Tone Control Switch.
8Y	W —28622	Condenser, 0.1 Mfd. 200 Volt.	29	G1 —26719	Ant. Gnd. Terminal.
9	W —30805	Condenser, 0.01 Mfd. 400 Volt.	30	G5 —28500	Power Transformer, 60 Cy., 110 V.
10Z		Condenser, 0.006 Mfd. 400 Volt.		G6 —28500	Power Transformer 25 Cy., 110 V.
10Y	W —35011	Condenser, 0.03 Mfd. 400 Volt.		G7 —28500	Power Transformer, 25 Cy., 220 V.
11Z		Condenser, 0.001 Mfd. 400 Volt.	31Z		Volume Control.
11Y	W —25537A	Condenser, 0.03 Mfd. 400 Volt.	31Y	—37343	On-Off Switch.
12Z			B	—35917	Escutcheon.
12Y	G14—33001	Variable Tuning Condenser Gang.		—37158	Dial Glass.
	—36148			—37156	Dial Pointer.
13	B —33906A	Dial Assembly complete.		—37157	Pointer Screw.
14	G3 —35696	Cord—Power Supply.	W	—31585B	Knob (2) large.
15	—31094	Speaker Cable (5515 only).	W	—36355	Knob (2) small.—Tone control.
16	—21237A	Resistor, 4,500 Ohms.		—4099	Dial Bulb.
17	—21455	Resistor, 60,000 Ohms.		—37514	Name Plate or Emblem.
18	—23785	Resistor, 300,000 Ohms.		—35253	Spring for 36355—Knob.
19	—21454	Resistor, 500,000 Ohms.		—35863	Grille Cloth.
20	W —25937	Resistor, 1 Megohm.			
21Z		Resistor, 275 Ohms Flex.			
21Y	W —35963	Resistor, 8,500 Ohms.		—40625	<b>New Magna—Ceramic Dial</b>
22	G6 —28807	Resistor, 25 000 Ohms.		—40626	Dial Drive Assembly.
		Socket, 80.			Dial face.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	P2	K
6D6	Osc-Mod	6.3	210	120	0	28	—	31
6D6	I. F. Amp.	6.3	210	120	3	0	—	3
76	Detector	6.3	86	—	—	0	—	8.5
6B5	Output	6.3	200	—	—	0	210	0
80	Rectifier	4.9	280	—	—	—	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6D6 I. F. tube, leaving the tube's grid clip in place.

KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.

(b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

(c) Set the signal generator to 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.

(e) Turn the band selector switch to the right hand position. (Short Wave Band).

(f) Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the 2nd I. F. transformer, for maximum output.

(h) Remove the signal generator lead from the 6D6 I. F. tube and connect it to the top cap of the 6D6 Osc.-Mod. tube, leaving the tube's grid clip in place.

(i) Adjust the trimmer condensers located on top of the 1st I. F. transformer for maximum output.

DO NOT RETUNE THE 2ND I. F. TRANSFORMER.

2. Aligning R. F. Circuits.

(a) Turn the band selector switch to the left hand position. (Broadcast Band).

(b) Leave the receiver tuning condenser rotor plates completely out of mesh.

(c) Connect the output lead from the signal generator through a .00025 mfd., series condenser to the antenna terminal of the receiver.

(d) Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output.

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

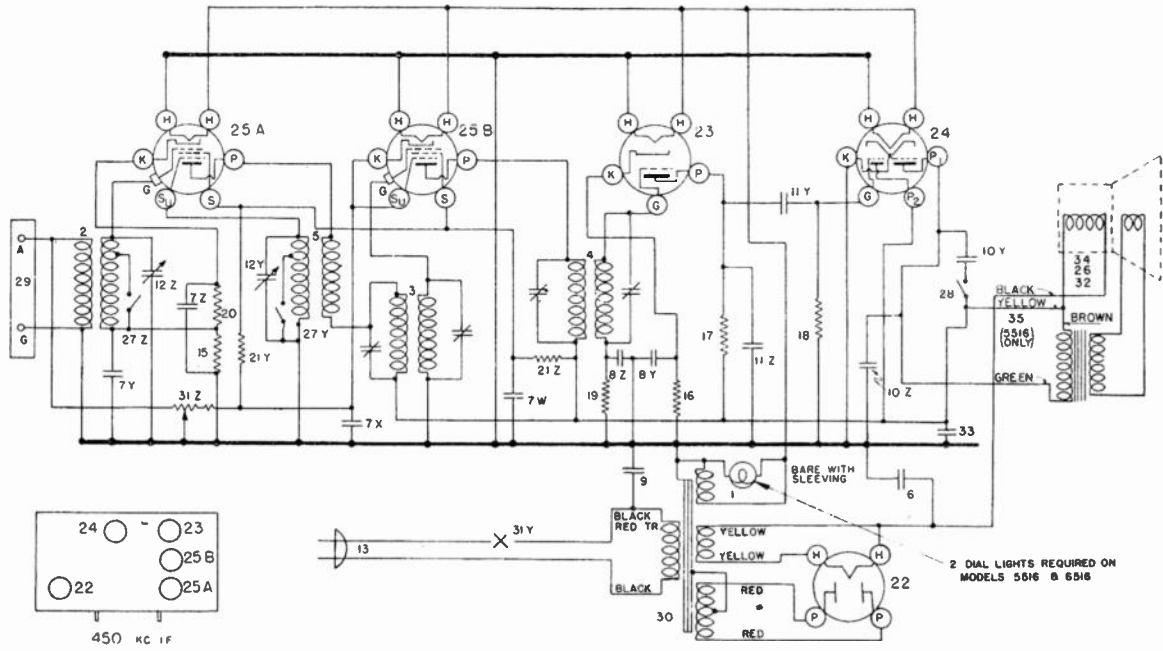
NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

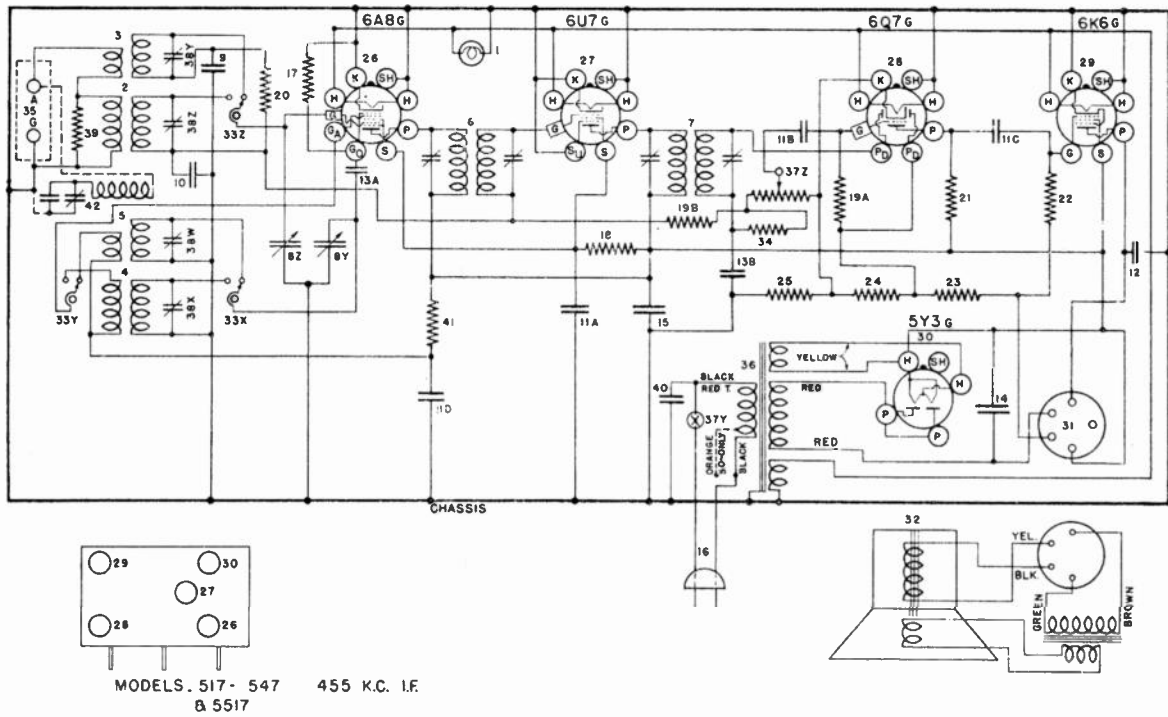
NOTE: There are no adjustments on this receiver for the Police Band.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Description	Item No.	Part No.	Name	Description
1	W —37922	Bulb	Dial Light	29	G1 —26719	Terminal Board	Ant. & Grd.
	G3 —37965	Socket	Dial Light	30	G5 —28500	Transformer	Power—110V. 60 Cy.
2	G42—32000	Coil	Antenna		G6 —28500	Transformer	Power—110V. 25 Cy.
3	G48—32004	Coil	1st I-F (Complete)		G7 —28500	Transformer	Power—220V 25 Cy.
4	G49—32004	Coil	2nd I-F (Complete)	31 Z			Volume Control
5	G47—32002	Coil	Osc.	31 Y			On-Off Switch
6	W —41080	Condenser	12 Mfd. 300V.	32	219BJ3	Speaker	Used on 5516 Only
7 Z			.02 Mfd. 200V.	33	W —41081	Condenser	16 Mfd. 250V.
7 Y			.02 Mfd. 200V.	34	241BL9	Speaker	Used on 516 only
7 X	W —28623	Condenser	.02 Mfd. 200V.	35	G3 —35696	Cable	Speaker (5516 only)
7 W			.02 Mfd. 200V.				
8 Z			.1 Mfd. 200V.		W —31585B	Knob	
8 Y	W —28622	Condenser	.1 Mfd. 200V.		W —36355	Knob	
9	W —30805	Condenser	.01 Mfd. 400V.		W —35772	Shield	Tube (Half)
10 Z			.006 Mfd. 400V.		W —35773	Cap	Tube Shield
10 Y	W —35011	Condenser	.03 Mfd. 400V.		W —35774	Base	Tube Shield
11 Z			.001 Mfd. 400V.		C —40822	Dial	Calibrated Glass
11 Y	W —25537A	Condenser	.03 Mfd. 400V.		W —40815	Bracket	DialGlassMtg.RH
12 Z					W —40816	Bracket	DialGlassMtg.LH
12 Y	G14—33001	Condenser	2 section Var. Tuning.		W —40804	Cushion	Dial Glass
13	B —33906A	Cord & Plug	Power Supply		W —40806	Drive Unit	Dial
15	—31094	Resistor	4500 Ohm.	MG16—40819	Bracket	Drive Mtg. Assy.	516 Only
16	—21237A	Resistor	60000 Ohm. 1/4 W.	B —40590	Escutcheon	Dial	
17	—21455	Resistor	300,000 Ohm.	D —28	Screw	Escutcheon Mtg.	
18	—23785	Resistor	500,000 Ohm.	C —41059	Dial	Calibrated Glass	
19	—21454	Resistor	1 Megohm	W —40797	Bracket	Dial Glass Mtg.	
20	W —25937	Resistor	275 Ohm Flex	W —40798	Bracket	Dial Support L. H.	
21 Z			8500 Ohm } Candohm	W —40799	Bracket	Dial Support R. H.	5516
21 Y	W —35963	Resistor	25000 Ohm }	W —40793	Drive Unit	Dial	6516
22	G6 —28807	Socket	Type 80	MG16—40765	Bracket	Drive Mtg. Assy.	516 Only
23	G80—28807	Socket	Type 76	MG33—40765	Drive Bearing	Assy.	
24	G90—28807	Socket	Type 6B5	B —40839	Escutcheon	Ring	
25A	G75—28807	Socket	Type 6D6	W —28760	Escutcheon	Pin	
25B	G75—28807	Socket	Type 6D6	B —40818B	Pointer	Disc.	
26	219BL9	Speaker	Used on 6516 Only	W —40186	Pointer	Disc. Screw	
27 Z	W —35753A	Switch	Band Selector	B —40802	Bracket	Speaker Mtg.	6516
27 Y				W —41001A	Clamp	Speaker	Only
28	W —36184A	Switch	Tone Control				



WIRING DIAGRAM OF MODELS 516, 5516 AND 6516



WIRING DIAGRAM—MODELS 517, 547 and 5517

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.  
Power consumption approximately 40 watts at 117.5 volts.  
Voltage drop across speaker field 35 volts.

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .0002 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** ¶ (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum

output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

**NOTE 1:** When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

**NOTE 2:** If at any time the H-F coils are replaced, it may be necessary to vary the inductance of the "OSC" coil by moving the cross-over turn of wire at the gap to make the set track at the 6 megacycle end. Moving the turn toward the short end of the coil will decrease the inductance and moving it toward the long end will increase the inductance. If the signal is weak at 6 megacycles, a similar slight change in the inductance of the "ANT" coil should bring up the signal strength. **THIS IS A CRITICAL OPERATION AND SHOULD NOT BE DONE ON ANY SET UNLESS CHANGING COILS MAKES IT NECESSARY.**

**CHANGES IN PARTS LIST,  
SERVICE SUPPLEMENT NO. 163**

Item 6, Part No. G136-32004 superseded by G138-32004.

Item 7, Part No. G137-32004 superseded by G139-32004.

Item 24, Part No. W-33012A superseded by

Item 6, Part No. G136-32004 superseded by G138-32004.

Item 7, Part No. G137-32004 superseded by G139-32004.

Item 24, Part No. W-33012A superseded by W-23012A.

**(C) SIGNAL INPUT FREQUENCIES**

	Minimum Capacity	Shunt Alignment
American Broadcast Band	1725 Kilocycles	1400 Kilocycles
High Frequency Band	15400 Kilocycles	15000 Kilocycles

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

denser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

**PARTS LIST—MODEL 517, 547 and 5517**

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light Bulb		7AE	Cab., Horizontal Table (517 and 547)
	G2 —44252	Light Socket Assy.			Superseding 7H and 7HA
2	G132—32000	Ant. Coil, 1725-540 Kc.		7B	Cab., Horizontal Table (517) Moulded
3	G133—32000	Ant. Coil, 6-15 Mc.			Front
4	G132—32002	Osc. Coil, 1725-540 Kc.		7M	Cab., Console (517 and 547)
5	G133—32002	Osc. Coil, 6-15 Mc.		7MB	Cab., Console (5517)
6	G138—32004	1st I-F Assy., 455 Kc.		7MA	Cab., Console (517)
7	G139—32004	2nd I-F Assy., 455 Kc.		6KA	Cab., Vertical Table (547)
8	G37 —33001	2 Section Gang Cond. (517)		7AD	Cab., Vertical Table (547) Superseding
	G38 —33001	2 Section Gang Cond. (547) Quiktune			6KA
	B —44286C	Dial Face (517)	32	7HA	Cab., Horizontal Table (547)
	B —44290	Dial Face (517) Quiktune		257BP11"B"	Speaker, Spec. No. 51-A-5
	W —44001A	Face Support Ring (517)			(Cab.—6K, 6KD, 7AC, 6KA and 7AD)
	W —43778B	Face Support Ring (547) Quiktune		—42927	V. C. and Cone Assy. for 257BP11"B"
	W —43550A	Pointer (517 only)		—41473	Output Trans. for 257BP11"B"
	W —40486	Pointer Mtg. Screw (517)		—43539	Cone Mtg. Ring for 257BP11"B"
	W —44285	Paper Dial Mask		257BP18"B"	Speaker, Spec. No. 51-A-8
	W —44267	Metal Dial Mask			(Cab.—7H, 7AE, 7HA and 7B)
	B —43544D	Dial Mtg. Bracket		—42927	V. C. and Cone Assy. for 257BP18"B"
	G1 —43564	Pulley and Hub Assy.		—43539	Conc Mtg. Ring for 257BP18"B"
	W —44134	Drive Shaft		—43986	Output Trans. for 257BP18"B"
	W —43542B	Drive Shaft Bracket		462CP11"M"	Speaker, Spec. No. 1-D-971
	W —43549	Shaft Retaining Ring			(Cab.—6FF)
	W —41582	Drive Cable		—40405	V. C. and Cone Assy. for 462CP11"M"
	W —43561	Tension Spring (Cable)		—43989	Output Trans. for 462CP11"M"
	D —44781	Dial Face (Glass) (5517)		—43988	Field Coil for 462CP11"M"
	W —44085B	Dial Mask (5517)		464BP15"M"	Speaker, Spec. No. 1-D-1017
	C —44082E	Dial Glass Support (5517)			(Cab.—7M, 7MA and 7MB)
	W —44084A	Glass Support Ring (5517)		—43993	V. C. and Cone Assy. for 464BP15"M"
	W —44299	Pointer (5517)		—43995	Output Trans. for 464BP15"M"
	W —635C	Pointer Spacer (5517)		—43994	Field Coil for 464BP15"M"
	W —44833	Pointer Mtg. Screw (5517)	33	W —43448A	Band Selector Switch
	W —41582	Drive Cord (18 inches) (5517)	34	—35600	Resistor, 100,000 Ohm 1/4 W. Ins. Carb.
9	G12 —34002	Condenser, .000500 Mf. Molded	35	G1 —26719	Ant. and Gnd. Terminal Assy.
10	W —36541	Condenser, .02 Mf. 160 V.	36	—43479	Power Trans., 110 V. 60 Cy.
11ABCD	W —28621	Condenser, .02 Mf. 200 V.		—43569A	Power Trans., 110 V. 50 Cy.
12	W —23191A	Condenser, .01 Mf. 400 V.		—43480A	Power Trans., 110 V. 25 Cy.
13AB	G1 —34002	Condenser, .00025 Mf. Molded		—43570A	Power Trans., 220 V. 50 Cy.
14	W —44012	Condenser, 16 Mf. 250 V. Electrolytic		—43481A	Power Trans., 220 V. 25 Cy.
15	W —43450	Condenser, 16 Mf. 200 V. Electrolytic	37Z		Volume Control, 1 Meg.
16	B —44004	Power Cord and Plug	37Y	—43449A	Line Switch
17	—33390	Resistor, 30,000 Ohm 1/4 W. Carb.	38	W —41247A	4 Section Shunt Trimmer Cond. Assy.
18	—24990	Resistor, 25,000 Ohm 1/4 W. Carb.	39	—22196	Resistor, 20,000 Ohm 1/4 W. Carb.
19AB	—36688	Condenser, 3 Megohm 1/4 W. Carb.	40	W —30805	Condenser, .01 Mf. 400 V.
20	—21455	Resistor, 300,000 Ohm 1/4 W. Carb.	41	—30127	Resistor, 3,500 Ohm 1/4 W. Carb.
21	—35601	Resistor, 300,000 Ohm 1/4 W. Ins. Carb.		W —43553	Rubber Mtg. Foot (Chassis)
22	—23785	Resistor, 500,000 Ohm 1/4 W. Ins. Carb.		W —44381B	Knob (3) 6K, 6FF, 7AC, 7AE, 7B, 7H,
23	W —25937	Resistor, 275 Ohm 1/2 W. Flex.			7KD, 7MA, (7M-517)
24	W —23012A	Resistor, 40 Ohm 1/2 W. Flex.		—44268A	Escutcheon—6FF, 7AC, 7AE, 7B,
25	W —25357	Resistor, 75 Ohm 3/4 W. Flex.			(7M-517)
26	G156—36400	Socket, Type 6A8		B —44226B	Escutcheon—7MB Cab.
27	G171—36400	Socket, Type 6U7		W —44380B	Knob (3) 7MB Cab.
28	G160—36400	Socket, Type 6Q7		G1 —43724	Escutcheon (Quiktune) Assy. (547)
29	G172—36400	Socket, Type 6K6		W —43878A	Celluloid Disc. (Brown) (547)
30	G173—36400	Socket, Type 5Y3		W —44956	Celluloid Disc (clear), package of 12
	W —40911	Tube Shield		W —43769	Arrow Head Screw (547)
31	G103—28807	Speaker Socket		B —43898A	Escutcheon—7KD Cab.
	W —43552	Speaker Plug Clamp	42	G165—32004	Wave Trap
	—44681	Speaker Plug		W —44288	Escutcheon—7MA Cab.
	6K	Cab., Vertical Table (517)		W —43625	Knob (2) 6KA, 7HA, 7AD, (7AE-547)
	7KD	Cab., Vertical Table (517)			Cab.
	7AC	Cab., Vertical Table (517) Superseding		W —43220	Knob (1) 6KA, 7HA, 7AD, (7AE-547)
		6K and 7KD			Cab.
	6FF	Cab., Horizontal Table (517) Export		W —43939	Knob (3) 7M Cab. (547)
		Only			
	7H	Cab., Horizontal Table (517)			

## CHASSIS MODELS 518 & 6518 (FOREIGN)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	165	95	-	-	165	-
6U7G	I-F Amplifier	6.3	165	95	-	-	-	-
6Q7G	Det.—A. V. C. 1st A-F	6.3	72	-	-	-	-	-
6K6G	Power Output	6.3	155	165	-	14.5	-	-
5Y3G	Rectifier	2.2	-	-	-	-	-	-

Voltage drop across speaker field 25 volts.  
 Maximum power output approximately 2 watts.  
 Power consumption at 117.5 volts approximately 37 watts.

### Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 4, Fig. 2).

(g) Check operations (e) and (f) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

### Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For both bands a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**NOTE:** When shunt aligning the Short Wave Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

### (C) SIGNAL INPUT FREQUENCIES

#### Minimum Capacity Signal

1,725 Kilocycles  
 7,000 Kilocycles

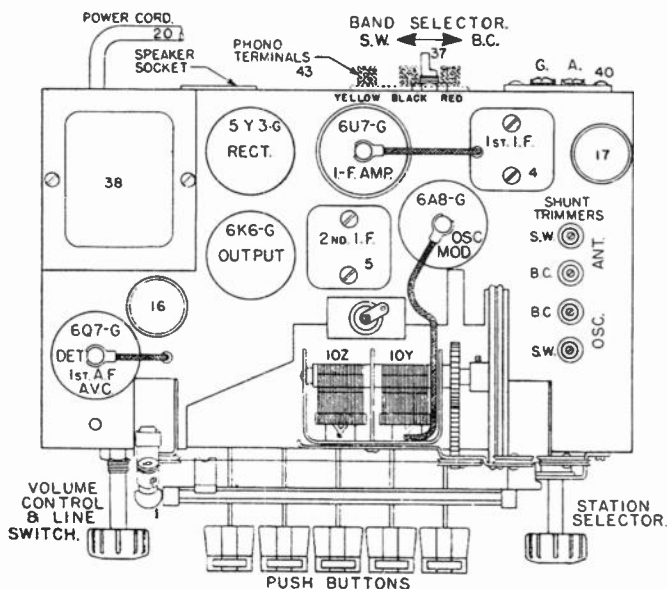


Fig. 2—Top View Models 518 & 6518

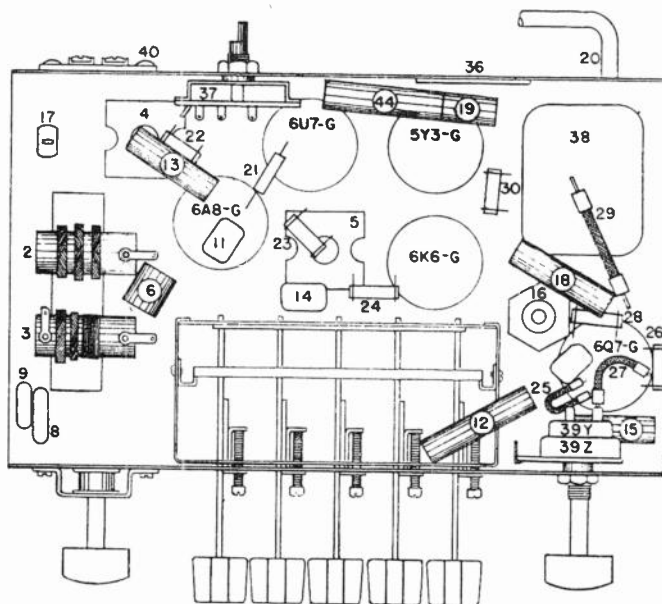
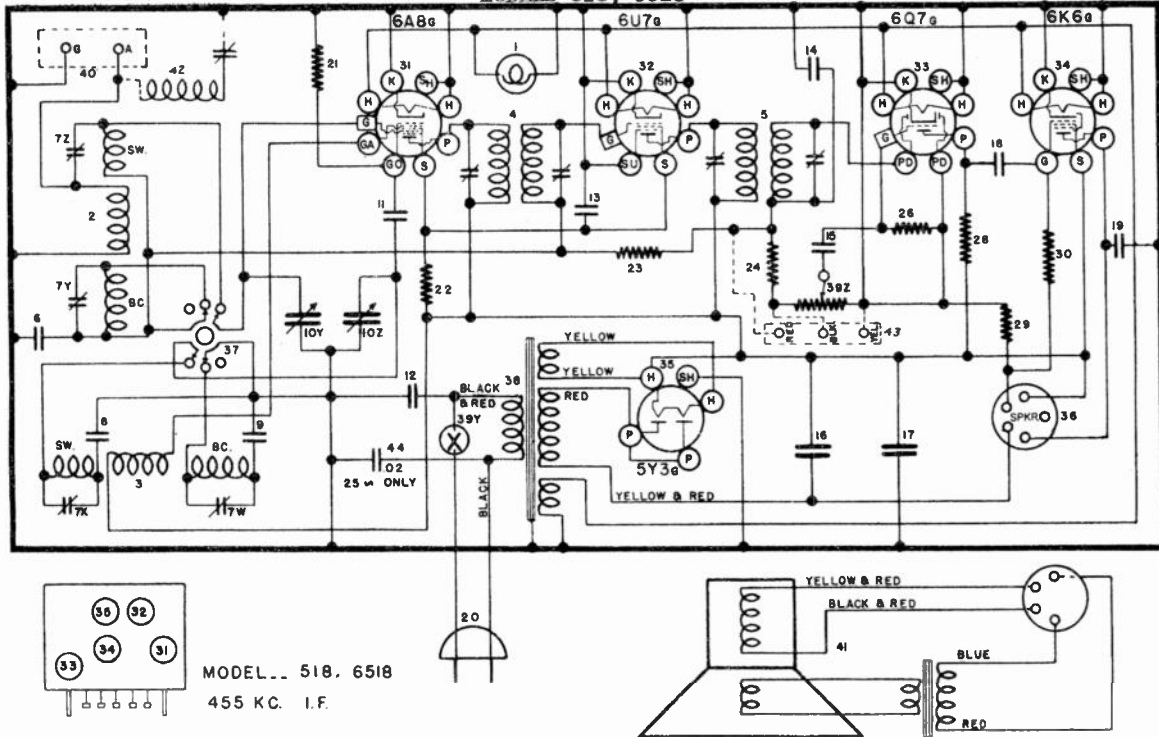


Fig. 3—Bottom View Models 518 & 6518

MODELS 518, 6518



MODEL... 518, 6518  
455 KC. I.F.

FIG. 1—WIRING DIAGRAM—MODELS 518, 6518

Item No.	Part No.	Description	Item No.	Part No.	Description
1	-37922	Dial Light, 6-8 Volt	13		
2	G12 -45398	Dial Light Socket Assembly	32		
3	G174 -32000	Antenna Coil, B, C, and S, W.	33	G178 -36100	8 Prong Socket
4	G175 -32002	Oscillator Coil, B, C, and S, W.	34		
5	G187 -32001	1st I. F. Transformer	35		
6	G188 -32004	2nd I. F. Transformer	36	G103 -28807	5 Prong Socket (Speaker)
7	W -36541	Condenser, .02 Mf. 180 V.	37	W 10911	Tube Shield
7Z		S, W, Antenna	38	W 15901	Band Change Switch
7Y		B, C, Antenna	39Z	W 15755	Power Transformer, 110 V, 25 Cycle
7X	W 41217A	2 Section Gang Condenser (Ant. Osc.)	39Y	W 45757	Power Transformer, 220 V, 25 Cycle
8	G13 -34005	Condenser, .0014 Mf. Molded	39X	W 15758	Power Transformer, Universal
9	G18 -34002	Condenser, .0001 Mf. Molded	39Z	W 16314	Volume Control, 6518
10Y	G55 -33901	2 Section Gang Condenser (Ant. Osc.)	39Y	W 15864	Volume Control, 1 Megohm, 518
10Z			39Y	W 15864	Volume Control, 1 Megohm, 518
C	-45747	Dial Glass	40	G1 -26719	Terminal Strip, A-G
B	-15743A	Dial Mask (Polished Metal)	41	W 279BP12-11"	Speaker, Spec. S-5274-J-5
W	-45984	Dial Glass Clip, L, H.		W 16798	Speaker Cone Assy.
W	-15985	Dial Glass Clip, R, H.		W -16795	Cardboard Ring
W	-45742B	Dial Glass Cushion		W -16799	Output Transformer
W	16397	Dial Pointer (White Celluloid)	G3	-45683	Push Button Assembly
W	16037A	Dial Hand Guide	G26	15683	Key Assembly (6518)
R	187	1/4"-No. 6 x 32 R. H. Screw for Dial Hand Guide	G32	45683A	Key Assembly (518)
W	15266C	Felt Strip	W	50542C	Key Clip
W	45808	1/8"-No. 8 P. K. Screw (Dial Glass Clips)	W	45717	1/2"-No. 6 x 32 Screw (Clamp Spring (Key Return))
MG14	-45891	Riveted Dial Support, R. H.	W	50607	Spring (Key Return)
MG15	-45894	Riveted Dial Support, L. H.	W	50588B	Adjusting Clip
W	-45865	Drive Shaft (Manual)	W	-45808	1/4"-No. 8 P. K. Screw (Clip Mtg.)
W	-4354213	Drive Shaft Bracket	W	-50547	Key Plate (Rear Guide)
R	-187	1/4"-No. 8 P. K. Screws for Drive Shaft Bracket	G22	45683	Rocker Plate Assembly
G2	-41582	Drive Cord (44 Inches Long)	W	-50561	1/2"-No. 6 x 40 Fil. Hed. Screw (Rocker Plate Bearing)
G12	-43564	Drive Pulley Assembly		-50617	Push Button (Black)
W	23877	1/4"-No. 8 x 32 Set Screw for Drive Pulley (2 Req.)		-15553B	Push Button (Brown)
W	50607	Spring Cord Tension	W	-50531A	Celluloid Cover
G5	34002	Condenser, .00005 Mf. Molded		W 50841	Call Letter Sheet (U. S. A. Station)
W	30805	Condenser, .01 Mf. 400 V.		W 44934	Knob Tuning (Black)
W	28621	Condenser, .02 Mf. 200 V.		W -45957	Knob Tuning (Brown)
G1	34002	Condenser, .00025 Mf. Molded		W -44552	Knob, Vol. and Switch (Black)
W	28619	Condenser, .006 Mf. 200 V.		W 45771	Knob, Vol. and Switch (Brown)
W	14012	Condenser, 16 Mf. 250 V. Elect. (60 Cycle)	42	W -45761A	8A Cabinet (Black)
W	16822	Condenser, 30 Mf. 250 V. Elect. (25 Cycle only)	43	W -45846A	8AA Cabinet (Brown)
W	15968	Condenser, 16 Mf. 250 V. Elect.	G193	-32004	Wave Trap
W	28621	Condenser, .02 Mf. 200 V.	G41	-26719	Plano Terminal
W	34617	Condenser, .006 Mf. 400 V.	W	-30188	Condenser, .02 Mf. 400 V. (25 Cycle only)
B	15769A	Power Cord	W	-43552	Speaker Plug Clamp
W	36761	Resistor, 40,000 Ohms 1/2 W. Ins.		W 16210	Call Letter Sheet (European)
W	22196	Resistor, 30,000 Ohms 1/2 W. Carb.		W -46399C	Escutcheon (6518 only)
W	26577	Resistor, 3 Megohms 1/2 W. Carb.		W 330	Screw (Escutcheon Mtg.)
W	1875	Resistor, 100,000 Ohms 1/2 W. Carb.		W 8K	Cabinet (6518)
W	24537	Resistor, 60 Ohm 1/2 W. Flex.		W 16408	Knob (6518 only) (2 Req.)
W	26577	Resistor, 3 Megohms 1/2 W. Carb.		W 16107	Knob (6518) (Band Switch)
W	-23012A	Resistor, 10 Ohms 1/2 W. Flex.			
W	21455	Resistor, 300,000 Ohms 1/2 W. Carb.			
W	25937	Resistor, 275 Ohms 1 W. Flex.			
W	23785	Resistor, 500,000 Ohms 1/2 W. Carb.			

CIRCUIT CHANGES

Item 22 was a 30,000 ohm resistor. Item 25, a 60 ohm 1/2 watt flexible resistor added from 607 cathode to ground. Item 26 should be 3 megohm resistor not 11 meg. Item 27, a 40 ohm 3/4 watt resistor should connect from the junction of items 26 and 29 at one end to low side of volume control. Item 29, a 275 resistor was a 375 ohm resistor.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Go	Ga
12A8GT	Oscillator-Modulator	12	90	48	—	3	-4	90
12SK7GT	I-F Amplifier	12	90	90	—	—	—	—
12SQ7GT	Det, AVC, A-F Amplifier	12	40	—	—	—	—	—
50L6GT	Output	50	80	90	—	6	—	—
35Z5GT	Rectifier	35	117.5	—	—	117	—	—

Power output approximately 2 watts.  
 Power consumption approximately 27 watts.  
 Voltage drop across speaker field 25 volts.  
 All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of

the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 14, located on top of coil (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers located on the rear of chassis for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning the R-F Amplifier.**

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

**NOTE:** Do not readjust the "OSC" trimmer.

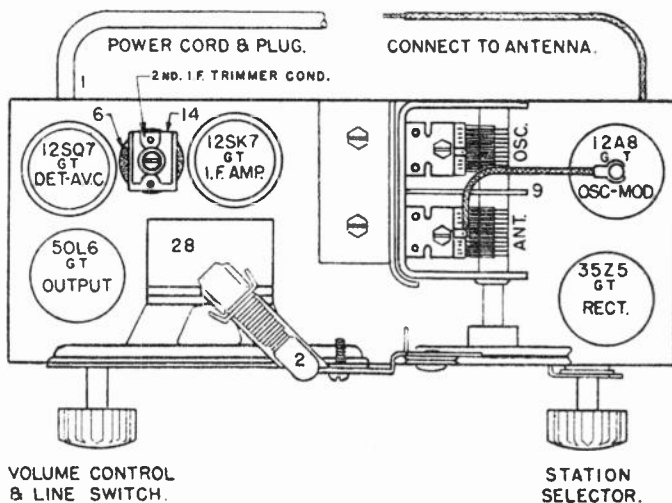


Fig. 2—Top View Models 519 & 529

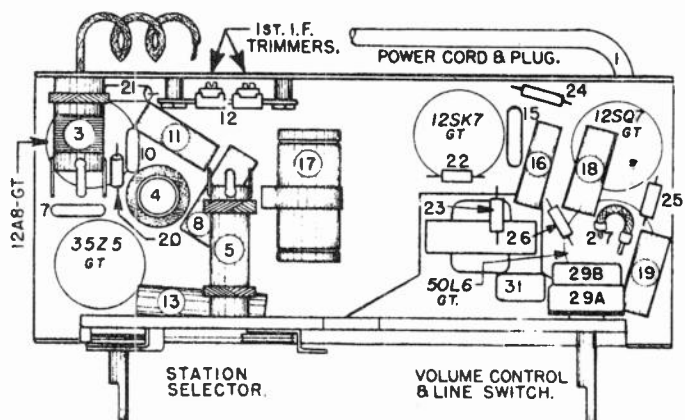
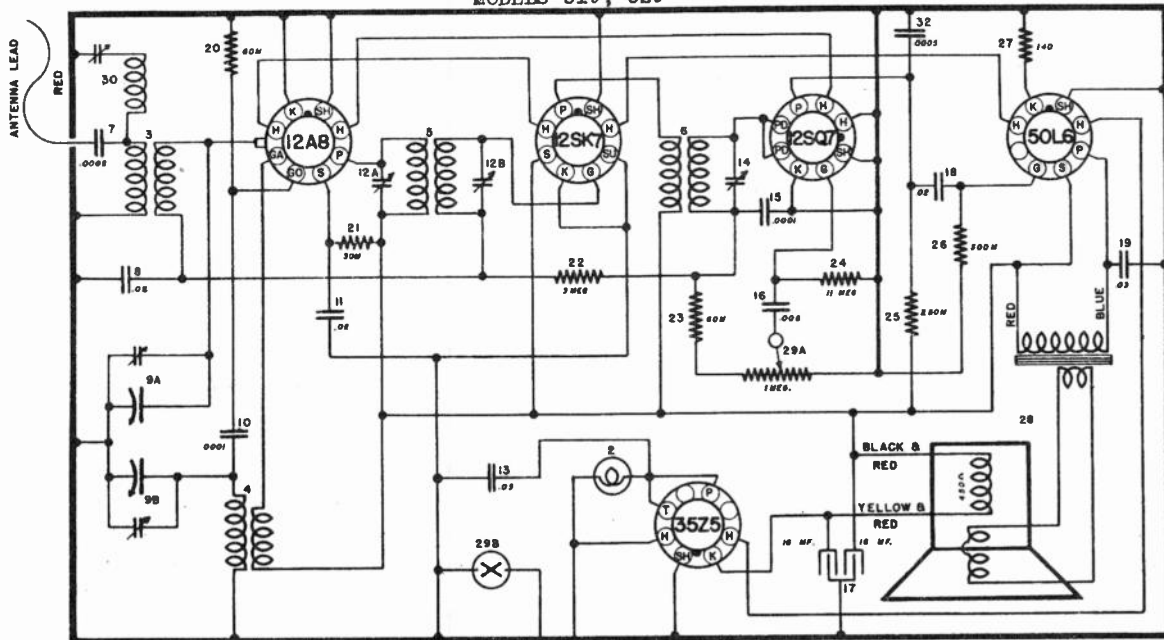
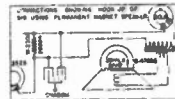


Fig. 3—Bottom View Models 519 & 529





455 KC. I.F.  
MODEL- 519 & 529



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B -45781	Power Cable and Plug			<b>MODEL 519 ONLY</b>
2	W -4099	Dial Light Bulb, 6.3 Volt			9EA Cabinet, Mottled Brown
	G6 -27136	Dial Light Socket Assembly			9EB Cabinet, Ivory
3	G189-32000	Antenna Coil			9EC Cabinet, Red
4	G186-32002	Oscillator Coil			9EBA Cabinet, Tan
5	G219-32004	1st I. F. Transformer (Coil only)			9EAA Cabinet, Blue
6	G218-32004	2nd I. F. Transformer (Coil only)			47598A Cabinet Back
7	G3 -31002	Condenser, .0005 Mf. Molded			47600A 9EB, 9EC, 9EBA, 9EAA, Cabinet Back
8	W -45780B	Condenser, .02 Mf. 160 V. Paper			47572 Carton
9A	G74 -33001	2 Sect. Gang Condenser (Ant. Sect.)			17603 Knob (2 Req.) (9EA Cabinet)
9B		(Osc. Sect.)			14934 Knob (2 Req.) (9EB, 9EC, 9EBA, 9EAA, Cabinet)
					130 No. 6-32 x 3/8" Oval Hd. Mach. Screw (2 Req.) (Cabinet Back)
					18467 Resistance Cable, 470 Ohms 220 V.
					<b>MODEL 529 ONLY</b>
					47602 Instruction Booklet
					9ED Cabinet, Mottled Brown
					9EE Cabinet, Ivory
					9EF Cabinet, Red
					9EG Cabinet, Wood
					9ECA Cabinet, Blue
					9EDA Cabinet, Tan
					47600A 9EE, 9EF, 9ECA, 9EDA Cabinet Back
					47614A 9EG Cabinet Back
					47598A 9ED Cabinet Back
					47572 Carton, 9ED, 9EE, 9EF, 9ECA, 9EDA
					47571 Knob (2 Req.) (9ED Cabinet)
					14934 Knob (2 Req.) (9EE, 9EF, 9ECA, 9EDA, Cabinet)
					17615 Knob (2 Req.) (9EG Cabinet)
					130 No. 6-32 x 3/8" Bind. Hd. Mach. Screw (2 Req.)
					18467 Resistance Cable, 470 Ohms 220 V.
					17567 Antenna-Roll
					17589 Push Buttons (4 Req.) (9EE, 9EF, 9ECA, 9EDA)
					47591 Push Buttons (4 Req.) (9ED)
					47824 Push Buttons (4 Req.) (9EG)
					47859 Call Letter Sheet (9EE, 9EF, 9ECA, 9EDA)
					17863 Call Letter Sheet (9ED, 9EG)
					50551B Call Letter Cover
					14827 No. 8 x 1/8" Hex. Hd. P. K. Screw (3 Req.) (Chassis Mtg.) (9EG)
					30409 Flat Washer (Chassis Mtg.) (9EG)
					<b>PUSH BUTTON PARTS</b>
					G36 -45683 Push Button Unit Assembly
					G58 -45683 Key Assembly
					G59 -45683 Rocker Plate Assembly
					W -50542E Key Clip (4 Req.)
					W -50361 No. 6-40 x 1/8" Fil. Hd. Screw (2 Req.) (Rocker Plate Bearing)
					W -47585 Key Plate
					W -31388 Key Plate Screw (2 Req.)
					W -45717 Key Setting Screw (4 Req.)
					W -50607C Key Return Spring (1 Req.)
10	G19 -41582	Drive Cord (27 Inches)			
11	G26 -41582	Guide Cord (8 Inches)			
12A	W -46087	Drive Cord Spring			
12B	W -4681R	Guide Cord Spring			
	W -46290	Cord Clamp			
	W -47582	Dial Pointer			
	W -47550A	Drive Shaft			
	W -47557A	Drive Shaft Bracket			
	W -6876	No. 6-32 x 1/2" W. Hd. Mach. Screw (Drive Shaft Bracket)			
	W -47576	Dial Light Mounting Bracket			
	G2 -34002	Condenser, .0001 Mf. Molded			
	W -45780B	Condenser, .02 Mf. 160 V. Paper			
	W -46738	Trimmer Cond., 1st I. F., Secondary			
	W -6879	No. 6-32 x 3/8" W. Hd. Mach. Screw (2 Req.) (Trimmer Condenser)			
	W -45574	Spacer (2 Req.) (Trimmer Condenser)			
	W -45518	No. 6-32 Pal Nut (2 Req.) (Trimmer Condenser)			
	W -45782B	Condenser, .05 Mf. 120 V. Paper			
	W -16653	Trimmer Cond., 2nd I. F., Secondary			
	G2 -34002	Condenser, .0001 Mf. Molded			
	W -15810B	Condenser, .006 Mf. 160 V. Paper			
	W -46398	Condenser, 16-16 Mf. 125 V. Elect.			
	W -45780B	Condenser, .02 Mf. 160 V. Paper			
	W -50065	Condenser, .03 Mf. 160 V. Paper			
	W -35928	Resistor, 60,000 Ohms 1/2 W. Ins.			
	W -49004	Resistor, 30,000 Ohms 1/2 W. Ins.			
	W -26577	Resistor, 3 Megohms 1/2 W. Carb.			
	W -35928	Resistor, 60,000 Ohms 1/2 W. Ins.			
	W -30956	Resistor, 10 Megohms 1/2 W. Ins.			
	W -38976	Resistor, 250,000 Ohms 1/2 W. Ins.			
	W -36322	Resistor, 500,000 Ohms 1/2 W. Ins.			
	W -41759	Resistor, 140 Ohms 1/2 W. Flex.			
	W -284BL5-K	Speaker, Spec. 41W5			
	W -128	No. 6-32 x 1/2" Bind. Hd. Mach. Screw (1 Req.) (Speaker)			
	W -48345	Cone and V. C. Assembly			
	W -48355	Field Coil, 450 Ohms			
	W -48365	Output Transformer			
	W -48366	Cardboard Ring			
	W -46729A	8 Prong Socket (No Marking)			
	W -18217	Power Switch			
	W -46662	3/8" Pal Nut			
	W -G227-32004	Wave Trap			
	W -G2 -34002	Condenser, .0001 Mf. Molded			
	W -G3 -34002	Condenser, .0005 Mf. Molded			

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	P <sub>2</sub>	S	Su	G	K	Ga	Go
6A8-G	Osc.-Mod.	6.7	295	—	135	—	0	7.5	155	-10 to -20
6K7-G	I-F Amplifier	6.7	295	—	135	10	0	10	—	—
6J7-G	Det. & A-F Amp.	6.7	1.0	—	65	4	0	4	—	—
6N6-G	Output	6.7	285	295	—	—	0	0	—	—
5Z4-MG	Rectifier	5.0	—	—	—	—	—	390	—	—

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter to P. and P2 of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. **NOTE:** When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

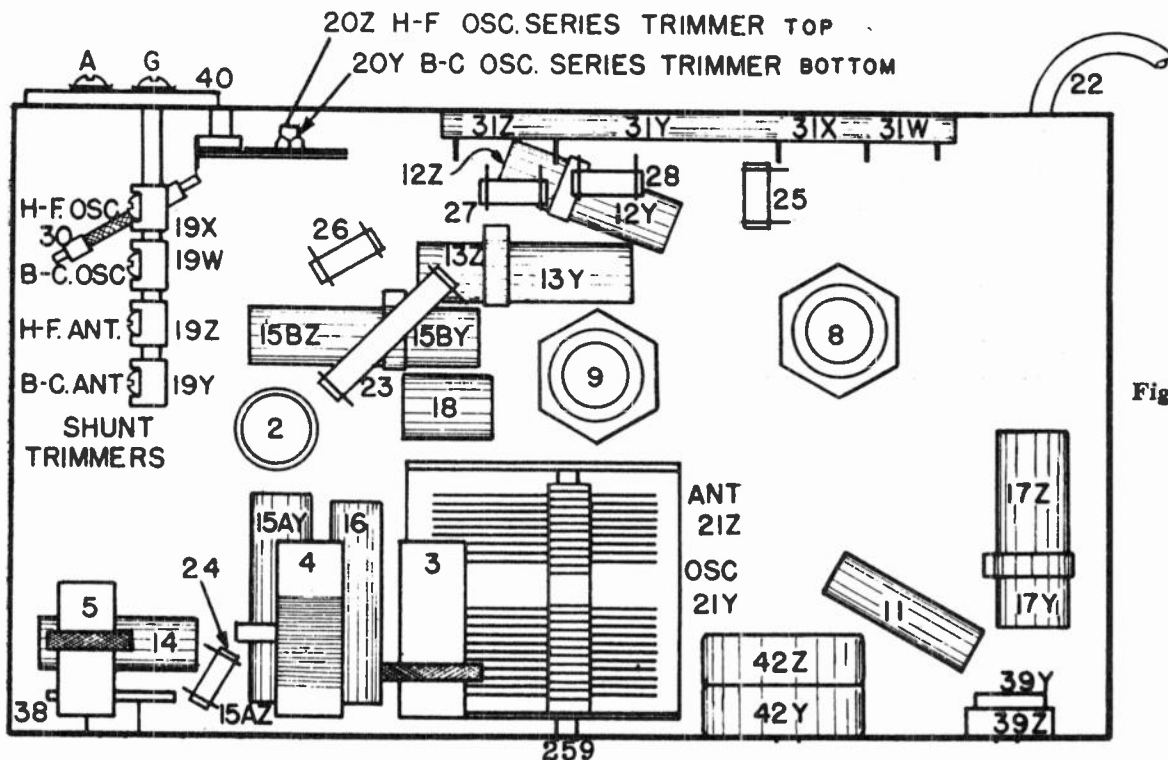


Fig. 3.

MODELS 526, 5526

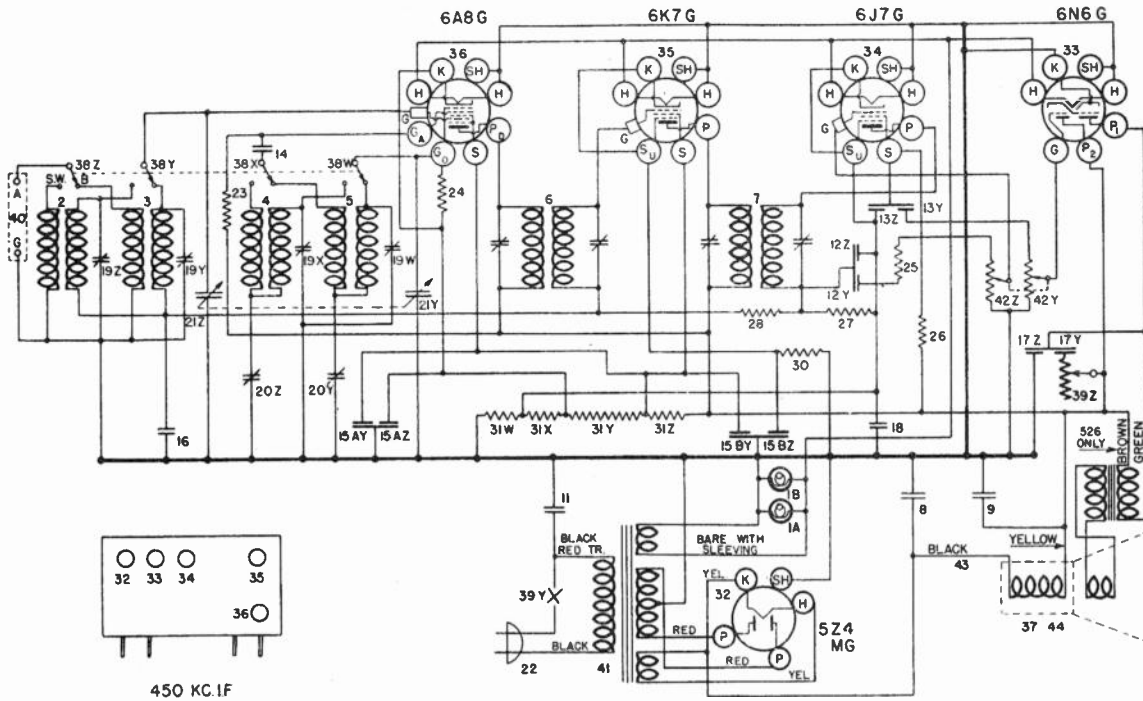


FIG. 1.—WIRING DIAGRAM—MODELS 526 AND 5526

Figures in first column refer to parts in Diagrams.							
Item	Part No.	Description	Item	Part No.	Description		
1A	W	—37922	Dial Light Bulb	22	—33905A	Power Cord & Plug	
1B	W	—37922	Dial Light Bulb	23	—3370A	Resistor 20,000 Ohm	
2	G3	—37965	Dial Light Socket Assembly	24	—21237	Resistor 60,000 Ohm	
3	G81	—32000	Ant. Coil S. W. B.	25	—21875	Resistor 100,000 Ohm	
4	G65	—32002	Osc. Coil S. W. B.	26	—21155	Resistor 300,000 Ohm	
5	G66	—32002	Osc. Coil B. C. B.	27	—33314	Resistor 400,000 Ohm	
6	G71	—32001	1st I-F Assembly	28	—37245	Resistor 1.5 Megohm	
7	G72	—32001	2nd I-F Assembly	29	None		
8	W	—36055	Condenser 35 Mfd. 400 V.	30	W	—28106	Resistor 500 Ohm 1/4 W. Flex.
9	W	—36057	Condenser 40 Mfd. 300 V.	31Z		10,000 Ohm	
10	W	None		31Y	W	—37246A	Candohm 25,000 Ohm
11	W	—30805	Condenser 0.01 Mfd. 400 V.	31X		185 Ohm	
12Z	W	—30322A	Condenser 0.00017 Mfd. 200 V.	31W		185 Ohm	
12Y	W	—30322A	Condenser 0.006 Mfd. 200 V.	32	G154	—36400	Socket 5Z4
13Z	W	—25537A	Condenser 0.001 Mfd. 400 V.	33	G165	—36400	Socket 6N6
13Y	W	—25537A	Condenser 0.03 Mfd. 400 V.	34	G157	—36400	Socket 6J7
14	W	—23191A	Condenser 0.01 Mfd. 400 V.	35	G151	—36400	Socket 6K7
15AZ	W	—28623	Condenser 0.02 Mfd. 200 V.	36	G156	—36400	Socket 6A8
15AY	W	—28623	Condenser 0.02 Mfd. 200 V.	37	331-BL-9		Speaker (526)
15BZ	W	—28623	Condenser 0.02 Mfd. 200 V.		432-CJ-3		Speaker (5526)
15BY	W	—28623	Condenser 0.02 Mfd. 200 V.	G3	—35696		Speaker Cable (5526)
16	W	—27216	Condenser 0.05 Mfd. 200 V.	W	—41001A		Speaker Clamp
17Z	W	—31052	Condenser 0.004 Mfd. 400 V.	38W		—37247	Band Selector Switch
17Y	W	—31052	Condenser 0.05 Mfd. 400 V.	38Z	W	—11028	Tone control
18	W	—36541	Condenser 0.02 Mfd. 160 V.	39Y		—11028	On-Off Switch
19Z				40	G1	—26719	Ant & Grd. Terminal Board
19Y	W	—37241A	4 Section Trimmer Cond.	41	G12	—28500	Power Trans. 60 Cy. 110 V.
19X					G13	—28500	Power Trans. 25 Cy. 110 V.
19W					G14	—28500	Power Trans. 25 Cy. 230 V.
20Z	G29	—33006	S. W. Osc. Series Trimmer	42Z		—41027	Volume Control A-F Grid
20Y			B. C. Osc. Series Trimmer	42Y		—41027	Volume Control Output Grid.
21Z	G17	—33001	Var. Tuning Cond. Gang.	B	—40839		Escutcheon Ring
21Y				W	—28760B		Escutcheon Pin
C		—40821	Dial Glass	W	—37339		Knob V. C. & Station Select.
W		—40486	Pointer Disc Mtg. Screw	W	—37341		Knob T. C. & Band Select.
B		—40818B	Pointer Disc	W	—40911		Shield, Tube
MG16	—40765		Drive Mtg. Brkt. Assembly	W	—27981A		Base Tube Shield
W		—40804	Dial Glass Cushion				
W		—40797	Dial Glass Brkt.				
W		—40798	Support Brkt. L. H.				
W		—40799	Support Brkt. R. H.				
B		—40802	Speaker Mtg. Bracket (526)				
W		—40801	Drive Segment				
W		—40793	Dial Drive Unit				
MG33	—40765		Drive Bearing Assembly				

## MODEL 527 (Battery Fiver)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1C7-G	Oscillator-Modulator	2.0	112	37	0	112	41*
1D5-G	I-F Amplifier	2.0	112	37	0	---	---
1H6-G	Detector & 1st A-F Amp.	2.0	56	---	0	---	---
1H4-G	2nd A-F Amplifier	2.0	43	---	0	---	---
1J5-G	Output	2.0	110	112	-1*	---	---

Power Output approximately .5 Watt.

"A" Battery Drain approximately .42 Ampere at 2 Volts.

"B" Battery Drain approximately 16 Milliampere at 135 Volts.

\*Measured at Grid Terminal through 500,000 Ohm Grid Resistor.

\*\*Measured at Go Terminal with Dial Set at approximately 1000 Kc.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1J5G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger condenser to the top cap of the 1C7G Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

#### 2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer located on the "Ant" section of the condenser gang for maximum output.

(f) Tune the station selector to the generator signal for maximum output.

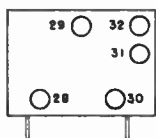
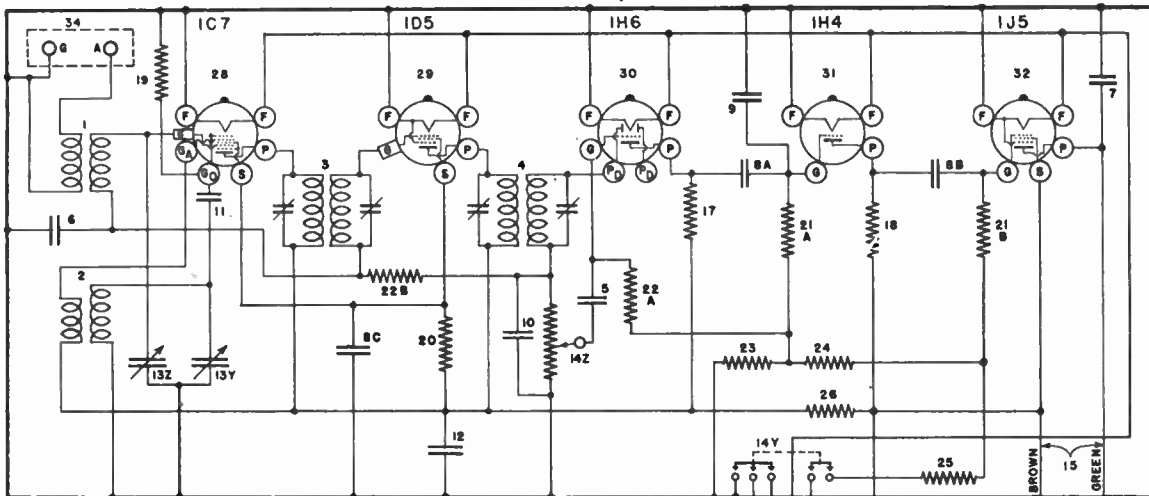
(g) Repeat operation (e) for more accurate adjustment.

### PARTS LIST—MODEL 527

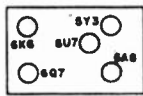
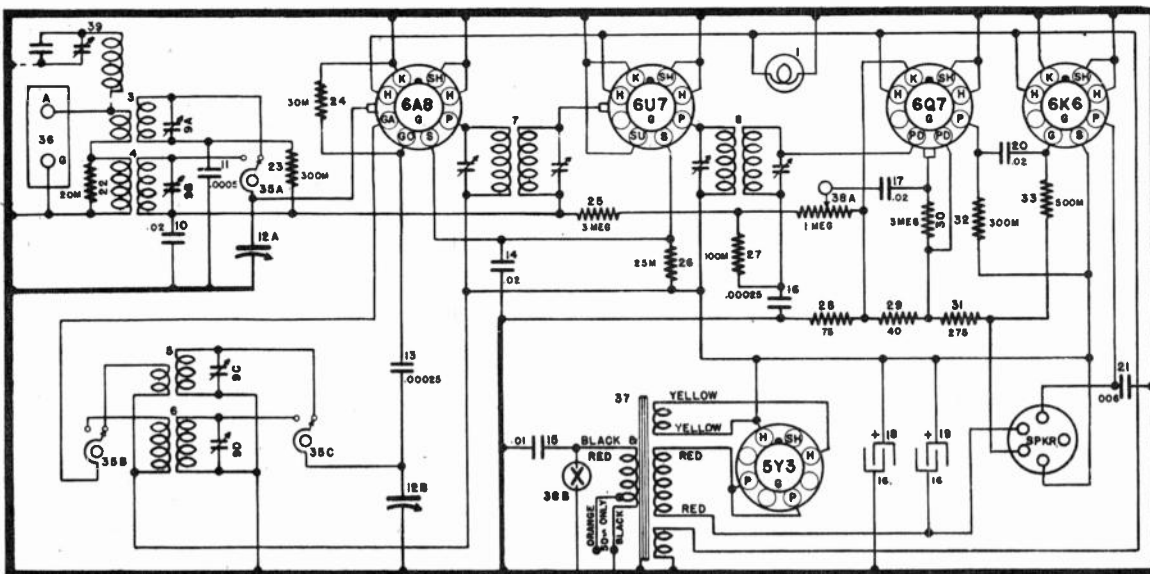
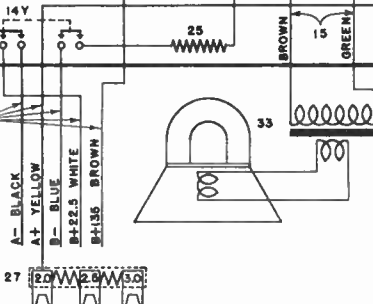
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G136—32000	Antenna Coil 540-1725 Kc.	28	G1 —43900	Socket Type 1C7
2	G136—32002	Oscillator Coil 540-1725 Kc.	29	G2 —43900	Socket Type 1D5
3	G146—32004	1st I-F Assembly, 455 Kc.	30	G3 —43900	Socket Type 1H6
4	G147—32004	2nd I-F Assembly, 455 Kc.	31	G4 —43900	Socket Type 1H4
5	W —30323	Condenser .01 Mf. 200 V.	32	G5 —43900	Socket Type 1J5
6	W —37226	Condenser .02 Mf. 160 V.	33	31PJ3 "B"	Speaker—Spec. 61 PD-6
7	W —28904	Condenser .004 Mf. 200 V.		—43666	Cone and V. C. Assembly
8ABC	W —28621	Condenser .02 Mf. 200 V.		—43668	Mtg. Ring (Cone)
9	G3 —34002	Condenser 500 Mmf. (.0005)		—43667	Output Trans.
10	G11 —34002	Condenser 175 Mmf. (.000175)	34	G1 —26719	Ant. & Gnd. Terminal Assembly
11	G2 —34002	Condenser 100 Mmf. (.0001)		B —43863	Dial Face
12	W —41081	Condenser 16 Mf. 250 V.		W —43787	Mask—Dial
13	G35 —33001	2 Sect. Var. Tuning Cond.		G2 —43564	Pulley and Hub Assembly
14Z }		{ Vol. Cont., 1 Meg.		W —43548A	Shaft—Drive
14Y }		{ Battery Switch		W —43542A	Bracket—Drive Shaft Mtg.
15	MG11 —43859	Speaker Lead Assembly		W —43778	Ring—Dial Glass Support
16	B —43862	Battery Cable, 5 Lead		W —43549	Ring—Retaining (Shaft)
17	—23403	Resistor 150,000 Ohm 1/4 W.		W —43550	Pointer
18	—21237A	Resistor 60,000 Ohm 1/4 W.		W —43561	Spring—Cable Tension
19	—21875	Resistor 100,000 Ohm 1/4 W.		—43561	Cable—Drive
20	—37472	Resistor 50,000 Ohm 1/4 W.		—28651	"A—" Cable Marker
21AB	—23785	Resistor 500,000 Ohm 1/4 W.		—28650	"A+" Cable Marker
22AB	—26577	Resistor 3 Megohm 1/4 W.		—28647	"B+22" Cable Marker
23	W —41759	Resistor 140 Ohm 1/2 W. Flex.		—28652	"B—" Cable Marker
24	W —28106	Resistor 500 Ohm 1/2 W. Flex.	W —28645	"B+135" Cable Marker	
25	W —22514	Resistor 750 Ohm 1/2 W. Flex.	W —43320	Knob	
26	W —30960	Resistor 2600 Ohm 1 1/2 W. Flex.			
27	W —41955A	Fil. Reg. Resistor 1.83 Ohm Tap, 1.1 Ohm			

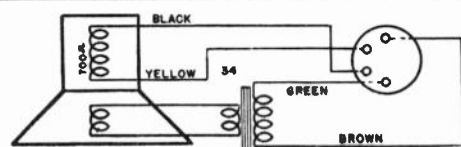
MODELS 527, 528



MODEL--527 455 K.C. I.F.



MODEL-- 528  
455 K.C. I.F.



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ca
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-3.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

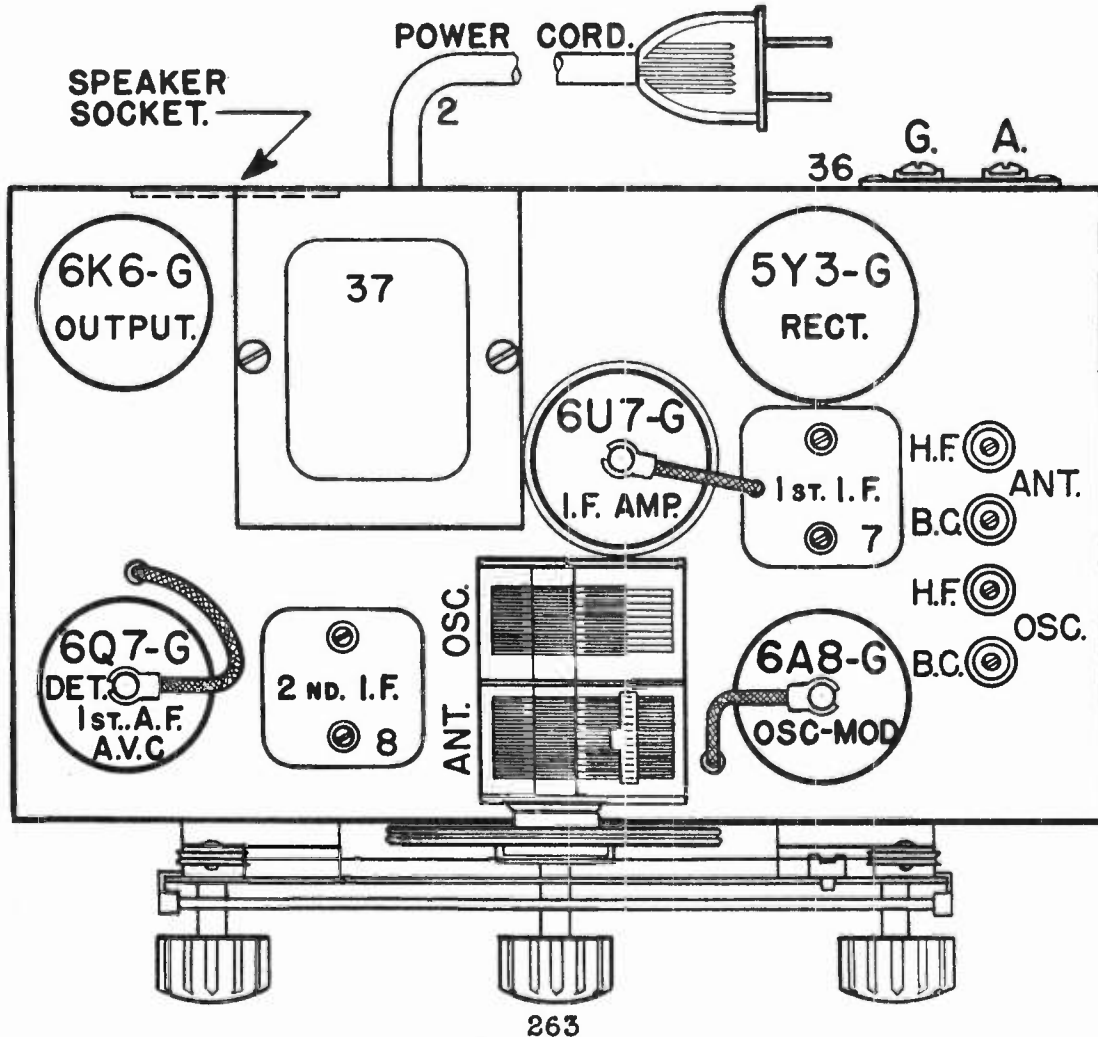
(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

Aligning R. F. Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.



PARTS LIST — MODEL 528

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —37922	Dial Light Bulb, 6-8 Volt		—46682	V. C. and Cone Assembly
2	B —44004	Power Cord and Plug		—46683	Field Coil, 700 Ohms 40 MA
3	G133—32000	H. F. Antenna Coil		—46684	Output Transformer
4	G132—32000	B. C. Antenna Coil		—46685	Cardboard
5	G133—32002	H. F. Oscillator Coil	34	279-BP-12-"H"	Speaker, Spec. S-5274-J-B
6	G132—32002	B. C. Oscillator Coil		—46798	V. C. and Cone Assembly
7	G138 —32004	1st I. F. Transformer		—46749	Output Transformer
8	G139—32004	2nd I. F. Transformer		—46795	Cardboard Ring
9A	W —41247A	Trimmer Condenser	34	279-BP-12-"U"	Speaker, Spec. 5-B-134
9B				—46121	Output Transformer
9C				—43448	Band Change Switch, Antenna Section
9D				—43448	Band Change Switch, Oscillator Primary Section
10	W —36541	Condenser, .02 Mf. 100 V. Paper		—43448	Band Change Switch, Oscillator Secondary Section
11	G12 —34002	Condenser, .0005 Mf. Molded	35C		3" Pal Nut (Band Change Switch)
12A	G68 —33001	Ganged Variable Cond. (Ant. Section)		W —35201	Terminal Board, Marked "A"-"G"
12B					G1 —26719
	D —46931	Dial Glass	36		Power Transformer, 110 V. 50 Cycle
	C —46930	Dial Glass Support	37		Power Transformer, 220 V. 50 Cycle
	MG15—46922	R. H. Pulley and Bracket Assembly		—43569A	Power Transformer, 110 V. 25 Cycle
	MG16—46922	L. H. Pulley and Bracket Assembly		—43570A	Power Transformer, 220 V. 25 Cycle
	G1 —43564	Pulley and Hub Assembly		—43580A	Power Transformer, 220 V. 25 Cycle
		Dial Hand		—43581A	No. 8 x 32 Hex. Nut (2 Req.) (Transformer Fastening)
	W —45875A	Dial Glass Cushion (2 Req.)		N —5096	Volume Control, 1 Megohm
	W —46020	Dial Glass Clip, L. H.	38A		Power Switch
	W —46021	Dial Glass Clip, R. H.	38B	—43449A	3/8" Pal Nut (Volume Control)
	—43882	No. 8 x 1/4" P. H. Screw (Dial Glass Clip)	39	W —35201	Wave Trap
	W —46035	Dial Hand Guide		G164—32004	8 Prong Socket (No Marking)
	G14 —41582	Drive Cord (36")		G178—36400	Cabinet
	—77	No. 4—36 x 3/16" R. Hd. Mach. Screw (Dial Hd. Guide) (2 Req.)		—811G	Carton
	M —44989	Drive Spring		—46424	Escutcheon
	W —44134A	Drive Shaft		B —46934	No. 2 x 3/8" Oval Hd. Ctsk. Hd. Screw (Escutcheon)
	W —43542B	Drive Shaft Bracket		D —30	Chassis Mtg. Foot
	—43882	No. 8 x 1/4" P. K. Screw (Drive Shaft Bracket) (2 Req.)		W —43553	Grille Cloth
	W —40911	Tube Shield		—46369	Knob (3 Req.)
13	G1 —34002	Condenser, .00025 Mf. Molded		—46408	No. 6 x 32 Hex. Nut (2 Req.) (Speaker)
14	W —28621	Condenser, .02 Mf. 200 V. Paper		N —6	Shakeproof Washer (Speaker)
15	W —30805	Condenser, .01 Mf. 400 V. Paper		W —2118	Speaker Plug Clamp
16	G1 —34002	Condenser, .00025 Mf. Molded		W —43552	No. 8 x 3/16" H. H. P. K. Screw (Speaker Plug Clamp)
17	W —28621	Condenser, .02 Mf. 200 V. Paper		—45808	Instruction Booklet
18	W —46128	Condenser, 16 Mf. 250 V. Elect.		—16936	Instruction Booklet, 50 Cycle
19	W —46128	Condenser, 16 Mf. 250 V. Elect.		—43093	Instructions (Universal Transformer)
20	W —28621	Condenser, .02 Mf. 200 V. Paper		—45439	Short Wave Instructions
21	W —34647	Condenser, .006 Mf. 400 V. Paper		—45159	No. 8 x 3/4" W. Hd. Mach Screw (Chassis Fastening) (3 Req.)
22	—22196	Resistor, 20,000 Ohms 1/3 W. Carb.		—44499	Flat Washer (Chassis Fastening) (3 Req.)
23	—21455	Resistor, 300,000 Ohms 1/3 W. Carb.		W —45579	No. 4 x 1/2" Rd. Hd. Wood Screw (Cabinet) (2 Req.)
24	—33390	Resistor, 300,000 Ohms 1/3 W. Carb.		S —82	Felt Strip (2 Req.)
25	—26577	Resistor, 3 Megohms 1/3 W. Carb.			
26	—24990	Resistor, 25,000 Ohms 1/3 W. Carb.			
27	—35600	Resistor, 100,000 Ohms 1/4 W. Ins.			
28	W —25357	Resistor, 75 Ohms 3/4 W. Flex.		—45982	
29	W —23012A	Resistor, 40 Ohms 1/2 W. Flex.			
30	—26577	Resistor, 3 Megohms 1/3 W. Carb.			
31	W —25937	Resistor, 275 Ohms 1/2 W. Flex.			
32	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.			
33	—23785	Resistor, 500,000 Ohms 1/3 W. Carb.			
34	279-BP-12-"B"	Speaker, Spec.			

TUBE VOLTAGES—MODEL 534

Type	Where Used	Ef	Ep	Esg	Esup	Ek	Eg
6A7	Osc. Mod.	6.3	100	70	2.5	2.5	0
6D6	I. F. Amp.	6.3	205	100	3.0	3.0	0
75	Diode and A. F.	6.3	50	—	0	0	x
42	Output	6.3	195	205	—	0	-8
80	Rect.	4.9	—	—	—	—	—

PEAKING I.F. STAGES AT 456 Kc.

NOTE: Be sure speaker is connected before turning on receiver.

- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the Type 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator at 456 kilocycles.
- III. Turn the volume control of the receiver on full. Turn the tuning condenser until the plates are completely meshed and turn the band selector switch to the right. Turn the tone control to the left.
- IV. (a) Peak both I.F. tuning condensers located on top of the 2nd I.F. transformer (Fig. 2). NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 20 to 60 volts output is satisfactory.  
(b) Peak both I.F. tuning condensers located on top of the 1st I.F. transformer (Fig. 2).
- V. Repeat operation IV to insure accurate adjustment of the I.F. tuning condensers.

PEAKING R.F. CIRCUITS

Connecting test oscillator to receiver: It is necessary to connect a dummy antenna in series with the test oscillator and the antenna terminal of the receiver. On the Broadcast Band this consists of a .0002 mfd. mica condenser and on the Short Wave Band it consists of a carbon resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal.

- I. To Peak The Broadcast Band: See NOTE in IV (a) under peaking I.F. Stages, also Fig. 3 for location of parallel trimmer condensers and Fig. 2 for location of oscillator series trimmer (or padding) condenser.  
(a) Set test oscillator at 1400 kilocycles. Tune the station selector until the dial pointer points to 140 on the dial. Then adjust the oscillator parallel

trimmer condenser (Broadcast Band) for maximum output.

(b) With the same dial setting peak the antenna parallel trimmer condenser for the Broadcast Band.

(c) Set the test oscillator at 600 kilocycles.

(d) Tune in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

(e) Close the oscillator series padding condenser (Broadcast Band), Fig. 2. 1/8 turn and re-tune the station selector to the 600 kilocycle signal for maximum output, noting the reading on the output meter.

(f) If the meter reads higher after operation (e) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If the meter reads lower after operation (e) open the oscillator series trimmer condenser 1/8 turn and re-tune the station selector to the 600 kilocycle signal, noting the reading on the output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(g) Repeat operations (a) and (b) for more accurate adjustments.

- II. To Peak The Short Wave Band:

(a) Be sure to change the dummy antenna as described above.

(b) Close the oscillator parallel trimmer condenser (Short Wave Band) and then open three turns.

(c) Close the antenna parallel trimmer condenser (Short Wave Band) and then open 1/2 turn.

(d) Tune the station selector to 15 megacycles (15 on the dial).

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser.

(g) Reduce the output from the test oscillator to the previous output and re-tune the station selector to 15 megacycles at 15 on the dial.

(h) Peak the antenna parallel trimmer condenser for the Short Wave Band for maximum output, then re-tune the station selector again for maximum output.

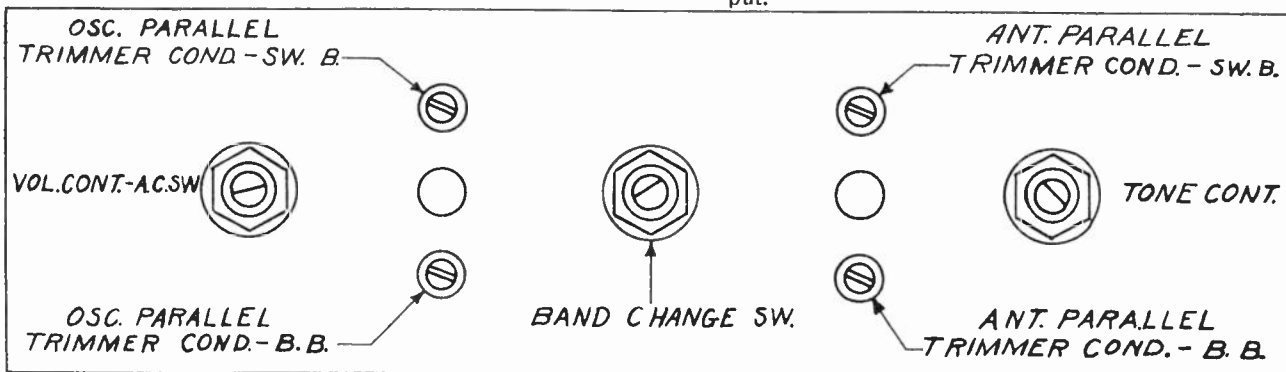


Fig. 3—Front View



MODEL 534

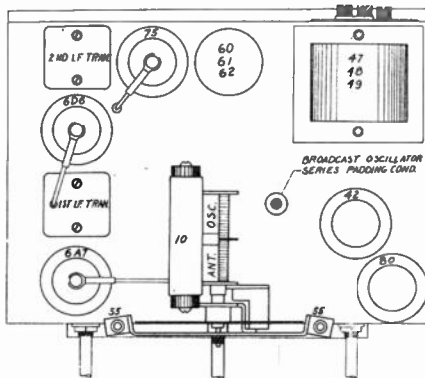
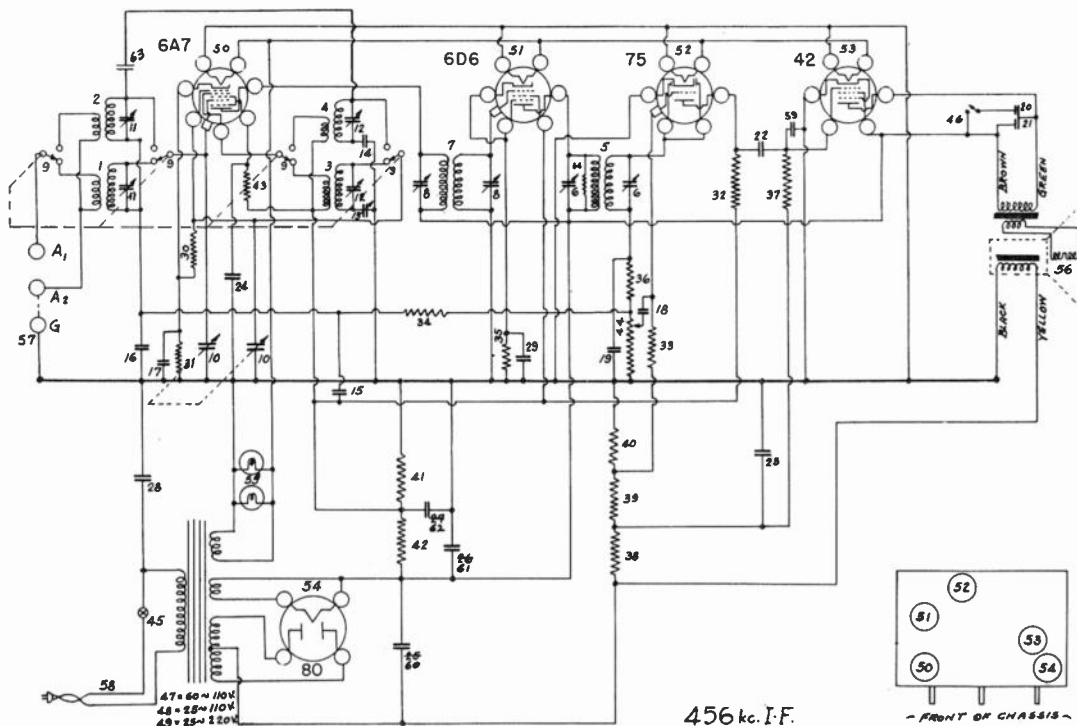


Fig. 2—Top View

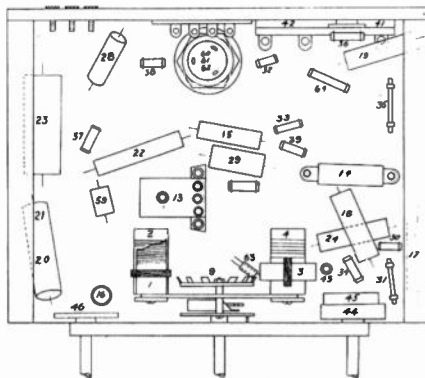


Fig. 4—Bottom View

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G39-32000	Low Freq. Ant. Trans.	43	-23868	6,500 Ohm Resistor
3	G40-32000	High Freq. Ant. Trans.	44	W-35013	Level Control 1 Megohm Power Switch
3	G31-32002	L. F. Osc. Trans.	45	W-34191	Tone Control Switch
4	G32-32002	H. F. Osc. Trans.	46	G8-28500	Power Trans. 60 Cy. 110 V.
5	G38-32004	I. F. Trimmer Cond.	48	G9-28500	Power Trans. 25 Cy. 110 V.
6	G39-32004	1st I. F. Trans.	49	G10-28500	Power Trans. 25 Cy. 220 V.
7	B-35031	I. F. Trimmer Cond.	50	G47-28807	6A7 Socket
8	B-35025	Variable Cond. Gang	50	W-27981A	Tube Shield Base
9	G26-32086	Dial Drive Assembly	51	W-28632A	Tube Shield
10	W-32008A	Dial Hand	51	G75-28807	6D6 Socket
11	W-32283	Dial Hand Nuts (2)	51	W-27981A	Tube Shield Base
12	W-35033	Ant. Trimmer Cond.	52	B-28009D	Tube Shield
13	W-35033	Osc. Trimmer Cond.	52	G41-28807	-75 Socket
14	G10-33005	Series Cond.	52	W-27981A	Tube Shield Base
15	G12-34000	4725 Mmf. Cond.	53	W-28632A	Tube Shield
16	W-32378	0.01 Mfd. 400 V. Cond.	53	G25-28807	-42 Socket
17	W-32380	0.05 Mfd. 200 V. Cond.	54	G8-28807	-80 Socket
18	W-28621	0.02 Mfd. 200 V. Cond.	55	W-4099A	6-8 V. Dial Lamp
19	W-28619	0.008 Mfd. 200 V. Cond.	56	G4-27134	Light Bracket Assem. (2)
20	W-27932	0.0001 Mfd. 200 V. Cond.	56	-318BL	Speaker
21	W-35011	0.03 Mfd. 400 V. Cond.	56	G5-31128	Speaker Term. Board
22	W-27218	0.006 Mfd. 400 V. Cond.	57	W-34627	Insulator
23	W-30321A	0.05 Mfd. 200 V. Cond.	57	W-34628	Term. Board Cover
24	W-28621	1.0 Mfd. 160 V. Cond.	58	G16-28719	Ant. Gnd. Terminal
25	W-28621	0.02 Mfd. 200 V. Cond.	58	B-33905	Power Cable & Plug
26	See 60-61-62		59	G1-34002	0.00025 Mfd. (Mica)
27			60	B-30059C	8. Mfd. 450 V.)
28	W-30805	0.01 Mfd. 400 V. Cond.	61	B-30059C	8. Mfd. 450 V.)
29	W-24049B	0.1 Mfd. 200 V. Cond.	62	B-30059C	8 Mfd. 250 V.)
30	W-21453	40,000 Ohm Resistor	63	G31-34403	1.0 Mmf.
31	W-25937	275 Ohm Flex. Resistor	64	B-21454	1 Megohm Resistor
32	W-21455	300,000 Ohm Resistor		B-33084	Chassis End (2)
33	W-26577	3 Megohm Resistor		W-31157B	Knob (1) Station Selector
34	W-26577	3 Megohm Resistor		W-33991	Knob (1) Band Change
35	W-25937	275 Ohm Flex. Resistor		W-31585B	Knob (2) (Tone Control & Volume Control)
36	W-21455	300,000 Ohm Resistor		B-33528A	Escutcheon
37	W-23785	500,000 Ohm Resistor		W-33984	Escutcheon Gasket
38	W-23785	500,000 Ohm Resistor		W-34306	Escutcheon Lens
39	W-34018	200,000 Ohm Resistor		W-34976	Grille Cloth
40	W-21876	10,000 Ohm Resistor			
41	W-31883	25,000 Ohm Resistor			
42		8,500 Ohm Resistor			

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	67.5	-2.5	—	—
1A6	Osc.-Mod.	2.0	135	67.5	-2.5	135	-5 to -10
34	I-F Amplifier	2.0	135	67.5	-2.5	—	—
1B5	Diode Detector & A-F Amplifier	2.0	65	—	-0.1	—	—
33	Output	2.0	130	135	-1.0	—	—

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust the trimmer condensers located on top of the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer located on the "R-F" section of the condenser gang for maximum output.

(f) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(g) Repeat operations (d), (e) and (f) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G55—32000	Antenna Coil (only)		—37156	Pointer
	W —30802A	Coil Shield		—37157	Pointer Screw (1)
	W —30026	Retaining Ring	13	C —37396	Battery Cable
2	G73—32004	First I. F. Assembly	14	W —35111	Speaker Cable
3	G38—32004	Second I. F. Assembly	15	—27121	Resistor 5000 Ohm ¼ W.
4	G67—32002	Oscillator Coil (only)	16	—24814	Resistor 7000 Ohm ¼ W.
	W —25025B	Coil Shield	17	—37377	Resistor 20,000 Ohm 1 W.
	W —25200	Coil Socket	18	—34019	Resistor 75,000 Ohm ¼ W.
	W —26891	Insulating Washer	19A	—21455	Resistor 300,000 Ohm ¼ W.
	W —21541C	Retaining Ring	19B	—21455	Resistor 300,000 Ohm ¼ W.
5	G53—32001	R. F. Coil (only)	19C	—21455	Resistor 300,000 Ohm ¼ W.
	W —30802A	Coil Shield	20	—21454	Resistor 1.0 Megohm ¼ W.
	W —30026	Retaining Ring	21	—26577	Resistor 3.0 Megohm ¼ W.
6	G2 —34002	Condenser 0.0001 Mfd. Mica	22	W —23013	Resistor 20,000 Ohm ½ W. Flex.
7A	G1 —34002	Condenser 0.00025 Mfd. Mica	23A	G31—28807	Socket 34
7B	G1 —34002	Condenser 0.00025 Mfd. Mica	23B	G31—28807	Socket 34
8A	W —28619	Condenser 0.006 Mfd. 160 Volt	24	G55—28807	Socket 1A6
8B	W —28619	Condenser, 0.006 Mfd. 160 Volt	25	G91—28807	Socket 1B5
9A	W —28621	Condenser 0.02 Mfd. 200 Volt	26	G36—28807	Socket 33
9B	W —28621	Condenser 0.02 Mfd. 200 Volt		W —26974	Tube Shield
10A	W —24049B	Condenser 0.1 Mfd. 200 Volt		W —26973	Shield Base
10B	W —24049B	Condenser 0.1 Mfd. 200 Volt	27	31—MS—3	Speaker
11A	W —29910A	Condenser 0.25 Mfd. 200 Volt	28	G1 —26719	Terminal Board—Ant & Grnd.
11B	W —29910A	Condenser 0.25 Mfd. 200 Volt	29Z		Volume Control
11C	W —29910A	Condenser 0.25 Mfd. 200 Volt	29X		On-Off Switch
12Z			30	—37409	Resistor 2. Megohm ¼ W.
12X			31	—34883	Resistor 5.0 Megohm ¼ W.
12Y				—26578	Resistor 5.0 Megohm ¼ W.
	G43—33002	Three Section Tuning Con. Gang		B —35917	Escutcheon
	—37147	Dial Drive Unit		D —28	Escutcheon Screw (3)
	MG16—35757	Drive Mounting Bracket		W —31585B	Knob (2)
	W —36150A	Dial Face		G2 —23300	Resistor 0.53 Ohm (For air cell only)
	—37158	Dial Glass			

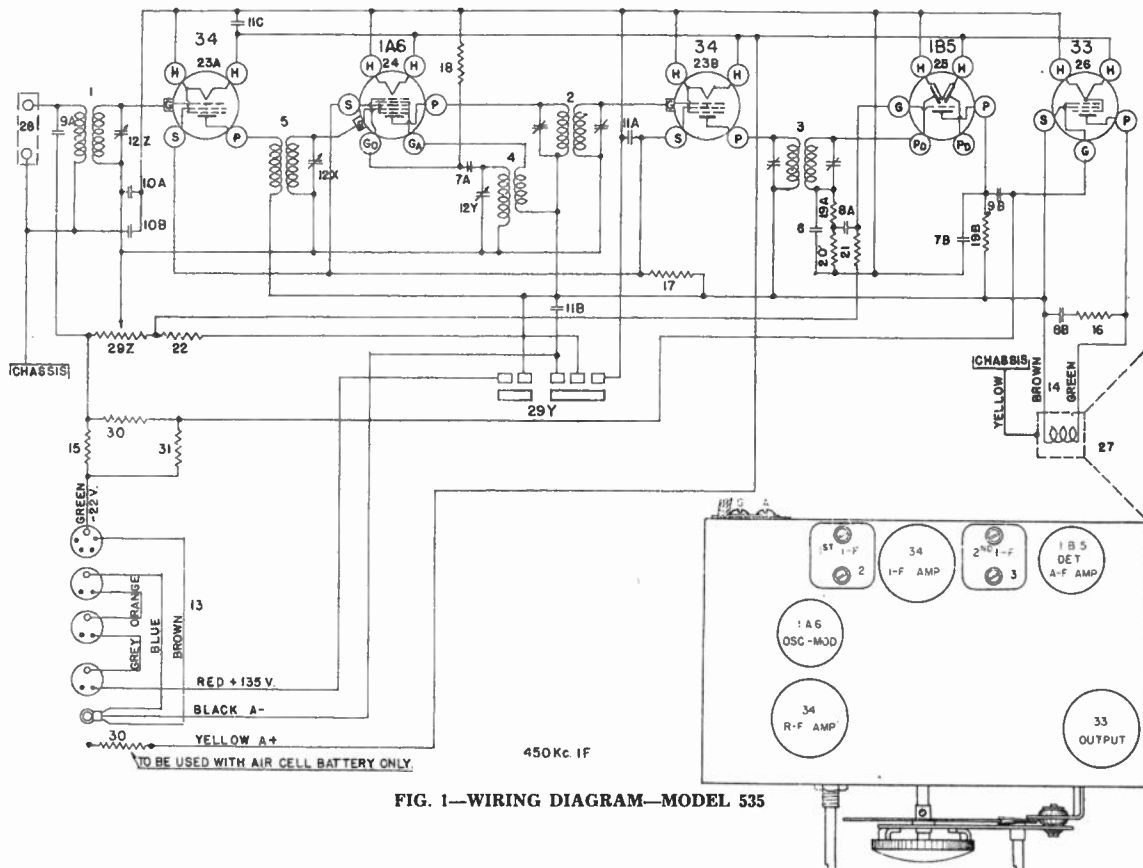


FIG. 1—WIRING DIAGRAM—MODEL 535

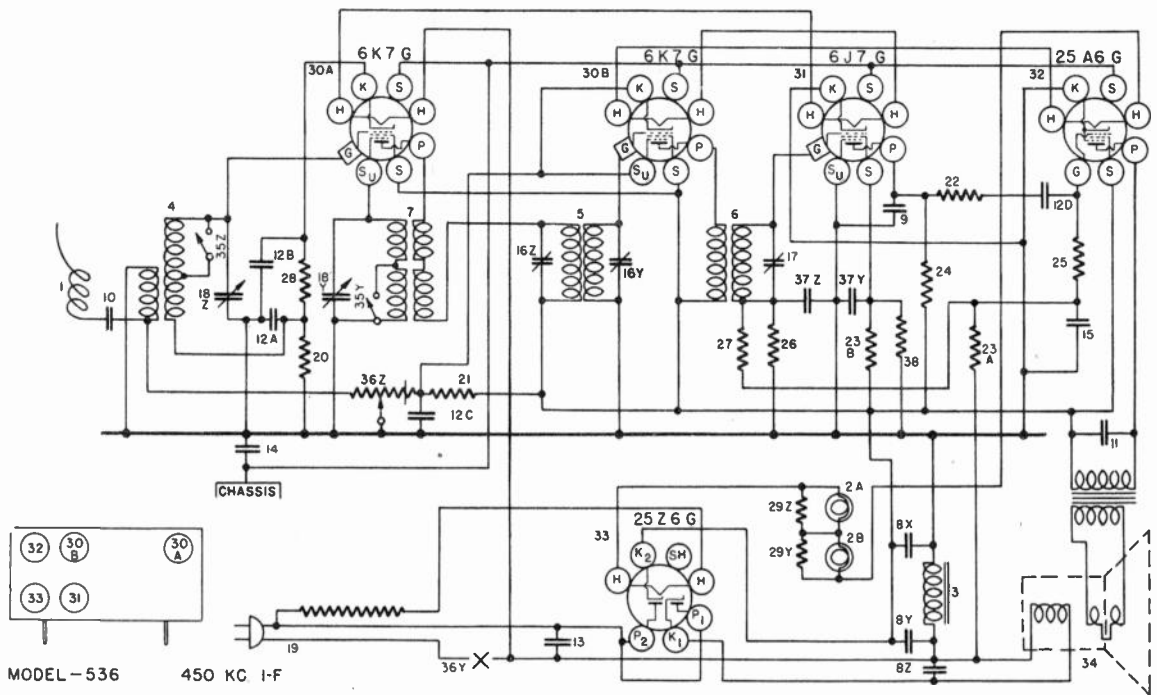


FIG. 1—WIRING DIAGRAM—MODEL 536 AND 5536

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	K
6K7	Osc.- Modulator	6.5	100	100	16	19
6K7	I-F Amplifier	6.5	100	100	0	3
6J7	Detector	6.5	35	10	0	—
25A6	Output	25.2	92	100	—	—
25Z6	Rectifier	25.2	—	—	—	—

Readings taken on 117.5 Volt A-C Power Supply.  
Power Consumption Approximately 50 Watts at 117.5 Volts.  
Voltage Reading Approximately 10% Lower on 117.5 Volts, D. C.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6K7 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the right (High Frequency Position) and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Illus. No. 17—Fig. 3, located on the rear of the chassis for maximum output.

(e) Adjust the 1st I-F trimmer condensers, Illus. Nos. 16Z and 16Y, located on the rear of the chassis for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer (18-Y ) located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer (18-Z) located on the "ANT" section of the condenser gang for maximum output.

(f) Readjust the tuning condenser slightly for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784B	Antenna—Flexible	W	—41162	Drive Chain—5536 only
2A	W —4099B	Dial Light	W	—41160	Bearing Bracket—5536 only
2B	W —4099B	Dial Light	W	—41159A	Shaft—5536 only
	G6 —27134	Dial Light Socket Assembly	W	—40909	Spring Washer—5536 only
3	G4 —28859	Filter Choke	W	—31840A	Snap Ring—5536 only
4	G106—32000	Ant. Coil	B	—40999	Power Cord & Plug
5	G104—32004	1st I-F Coil	19	—36316	Resistor, 2700 Ohm 1/4 W.
6	G103—32004	2nd I-F Coil	20	—4921C	Resistor, 10,000 Ohm 1W.
7	G94 —32002	Osc. Coil	21	—35928	Resistor, 60,000 Ohm 1/4 W.
8Z			22	—35600	Resistor, 100,000 Ohm 1/4 W.
8Y	W. —29804A	Condenser, { 8 Mfd. 125 V. 16 Mfd. 125 V. 25 Mfd. 100 V.	23A	—35600	Resistor, 100,000 Ohm 1/4 W.
8X			23B	—35601	Resistor, 300,000 Ohm 1/4 W.
9	G1 —34002	Condenser, .00025 Mfd. (Molded)	24	—36322	Resistor, 500,000 Ohm 1/4 W.
10	W —28620	Condenser, .003 Mfd. 200 V.	25	—35927	Resistor, 2 Megohm 1/4 W.
11	W —23191A	Condenser, .01 Mfd. 400 V.	26	—33490	Resistor, 10 Megohm 1/4 W.
12A	W —36541	Condenser, .02 Mfd. 160 V.	27	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
12B	W —36541	Condenser, .02 Mfd. 160 V.	28	W —41000	Candohm—2 Sections
12C	W —36541	Condenser, .02 Mfd. 160 V.	29	G151—36400	Socket Type 6K7
12D	W —36541	Condenser, .02 Mfd. 160 V.	30A	G151—36400	Socket Type 6K7
13	W —32780B	Condenser, .05 Mfd. 400 V.	30B	G157—36400	Socket Type 6J7
14	W —24049C	Condenser, 1 Mfd. 160 V.	31	G161—36400	Socket Type 25A6
16	W —37075	Condenser, 2 Section Trimmer	32	G162—36400	Socket Type 25Z6
17	W —40998	Condenser, 1 Section Trimmer	33	W —40911	Tube Shield
18	G22 —33001	2 Section Var. Tuning Condenser	34	W —27981A	Tube Shield Base
	C —40926	Dial Glass—536 only	B	—41012	Speaker 237BL9
	W —40632B	Pointer Disc—536 only	W	—40593	Speaker Mtg. Bracket
	W —41014A	Dial Glass Bracket R-H—536 only		—6415	Mtg. Bracket Screw
	W —41013A	Dial Glass Bracket L-H—536 only	35	—41004	Band Selector Switch
	W —41227	Drive Chain—536 only	36Z	—41002	Volume Control 4800 Ohm Tap 160 Ohm
	W —40633B	Bearing Support—536 only	36Y		Line Switch
	W —41112A	Driven Sprocket—536 only	B	—40590	Escutcheon
	W —41113A	Driver Sprocket	D	28	Escutcheon Mtg. Screws (4) } 536 only
	W —40486	Pointer Disc Mtg. Screw	W	—41019	Knob
	C —40927	Dial Glass—5536 only	W	—40839	Escutcheon
	B —40818B	Pointer Disc—5536 only	W	—40840	Escutcheon Plate
	W —41158	Support Bracket L-H—5536 only	W	—29760A	Escutcheon Pin } 5536 only
	W —41143	Support Bracket R-H—5536 only	W	—41019	Knob (2)
	W —40797	Dial Glass Bracket—5536 only	W	—41021	Knob (1)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Det & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.  
 Power consumption approximately 40 watts at 117.5 volts.  
 Voltage drop across speaker field 36 volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 6K6G output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the

2nd I-F transformer for maximum reading on the output meter.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser (33Y) for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (appx. 140 on the dial).

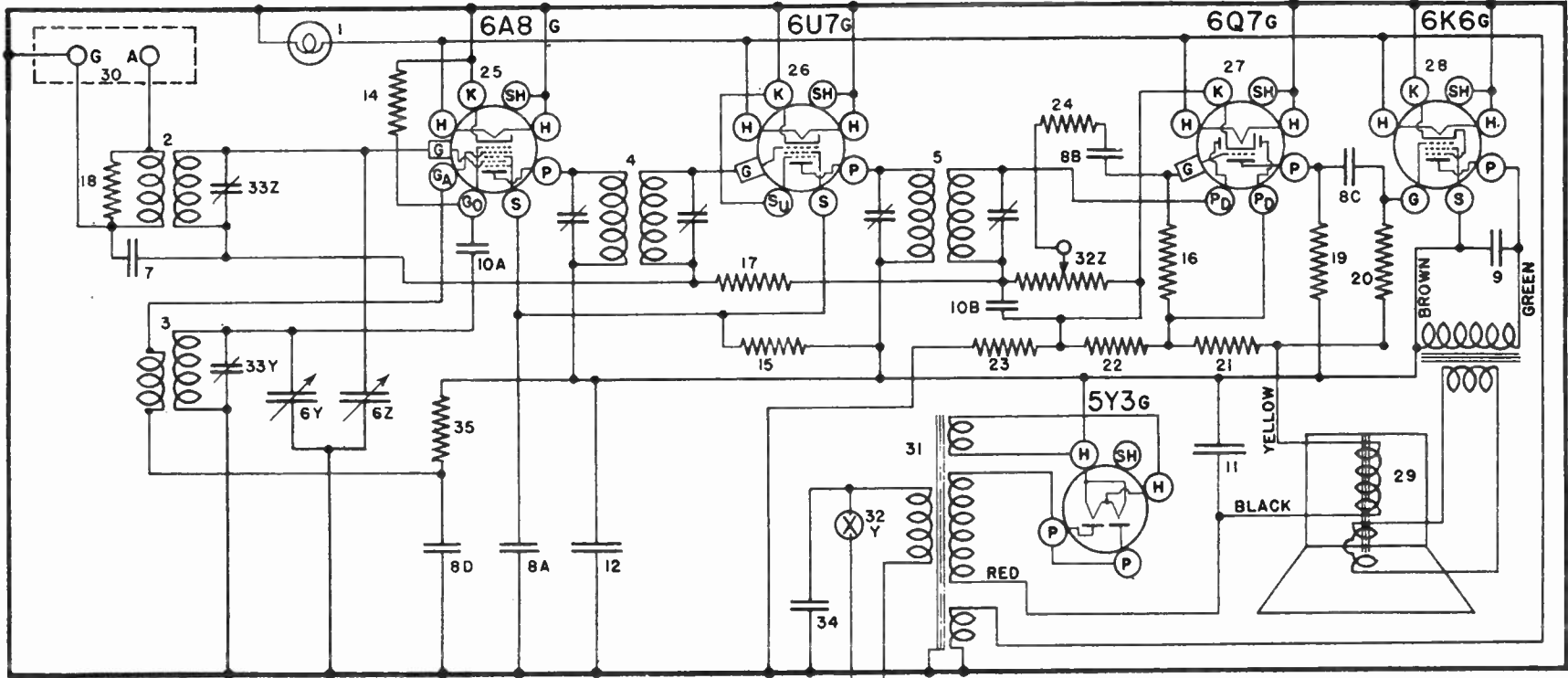
(f) Adjust the "ANT" trimmer condenser (33Z) for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.

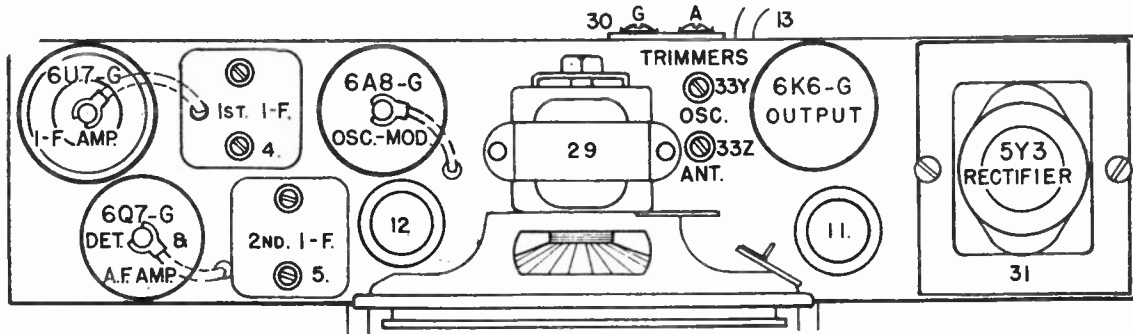
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Bulb—Dial Light	20	—23785	Resistor 500,000 Ohm ¼W. Carb.
	W —43568	Bracket—Dial Light	21	W —28589	Resistor 350 Ohm ½W. Flex.
2	G132—32000	Ant. Coil	22	W —23012A	Resistor 40 Ohm ½W. Flex.
3	G132—32002	Osc. Coil	23	W —24537	Resistor 60 Ohm ½W. Flex.
4	G144—32004	1st I-F Assembly	24	—36761	Resistor 40,000 Ohm ¼W. Ins.
5	G145—32004	2nd I-F Assembly	25	G156—36400	Socket Type 6A8
6	G34 —33001	2 Section Var. Cond. Gang	26	G171—36400	Socket Type 6U7
	G2 —43564	Pulley Assembly	27	G160—36400	Socket Type 6Q7
	C —43763	Dial Glass—Calibrated	28	G172—36400	Socket Type 6K6
	W —43779	Mask—Dial	W —40911	Tube Shield	
	W —43739	Support—Dial	W —27981	Base—Tube Shield	
	—41582	Cable—Cond. Drive	29	260BL9 "B"	
	W —43561	Spring—Cable Tension	—41472	Cone for 260BL9 "B" Speaker	
	W —43740	Shaft—Drive	—43943	O. P. Trans. for 260BL9 "B" Spkr.	
	W —41611	Retaining Ring—Drive Shaft	—43540	Carb'd Ring for 260BL9 "B" Spkr.	
	W —43770	Pointer	G1 —26719	Ant. and Ground Term. Assembly	
7	W —36541	Condenser .02 Mf. 160 V.	—43748	Power Trans. 50-60 Cy. 110 V.	
8A—D	W —28621	Condenser .02 Mf. 200 V.	30	—43747	Power Trans. 25 Cy. 110 V.
9	W —34647	Condenser .006 Mf. 400 V.	31	—43733	Vol. Cont. 1 Meg.
10AB	G1 —34002	Condenser .00025 Mf. 200 V.			Line Switch
11	W —41081	Condenser 16 Mf. 250 V.	32Z } W —37986A	2 Sect. Shunt Trimmer	
12	W —43450	Condenser 16 Mf. 200 V.	32Y } W —30805	Condenser .01 Mf. 400 V.	
13	B —43742	Power Cord and Plug	33	—30137	Resistor 3,500 Ohm ¼W.
14	—21237A	Resistor 60,000 Ohm ¼W. Carb.	34	G2 —43788	Grille Cloth Assy.—HC9-Cab.
15	—24814	Resistor 7,000 Ohm ¼W. Carb.	35	G3 —43788	Grille Cloth Assy.—HE9-Cab.
16	—26577	Resistor 3 Megohm ¼W. Carb.	W —43789	Escutcheon—Cab-Mod. HC 50 & 60	
17	—36688	Resistor 3 Megohm ¼W. Ins.	W —43790	Escut.—Cab.-Mod. HE 43, 50 & 61	
18	—22196	Resistor 20,000 Ohm ¼W. Carb.	C —43782	Escut.—Cab.-Mod. HE 71 & HC 71	
19	—35601	Resistor 300,000 Ohm ¼W. Ins.	W —43764	Knob	
			B —43743	Bottom Cover	

WIRING DIAGRAM—MODEL 537



271

MODEL 537



TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
12A8GT	Oscillator-Modulator	—	—	95	50	-10	95	—	—
12SK7GT	I-F Amplifier	—	—	—	-1	—	95	—	95
12SQ7GT	Det. AVC, A-F Amplifier	—	—	—	Diode	Diode	35	—	—
50L6GT	Output	—	—	95	95	-8*	—	—	—
35Z5GT	Rectifier	—	—	Tap	—	117.5 A.C.	—	—	100

ALIGNMENT PROCEDURE

NOTE: The chassis of this receiver is connected to one side of the power lines and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver. This does not apply to the J models which have isolating power transformers.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (BLUE LEAD) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) Repeat operations (d) and (e) for more ac-

Aligning the R-F Amplifier.

(a) Leave signal generator output lead connected to the antenna lead (BLUE). Set signal generator to 1712 kilocycles for models without a loop antenna, or to 1620 kilocycles for models equipped with a loop antenna.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang for maximum output. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune in the 1400 kilocycles in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser on the "ANT" section of the gang for maximum output.

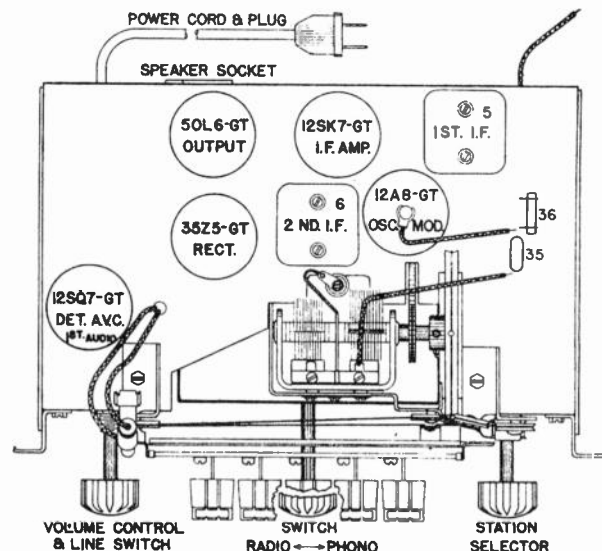
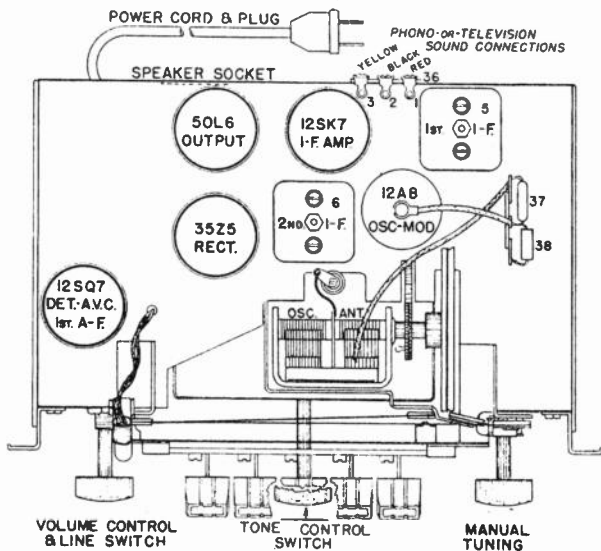
(f) Repeat the above for more accurate adjustments.

WAVE TRAP

Some models without the loop antenna are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, a fixed condenser and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 30).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.



MODELS 539, J539

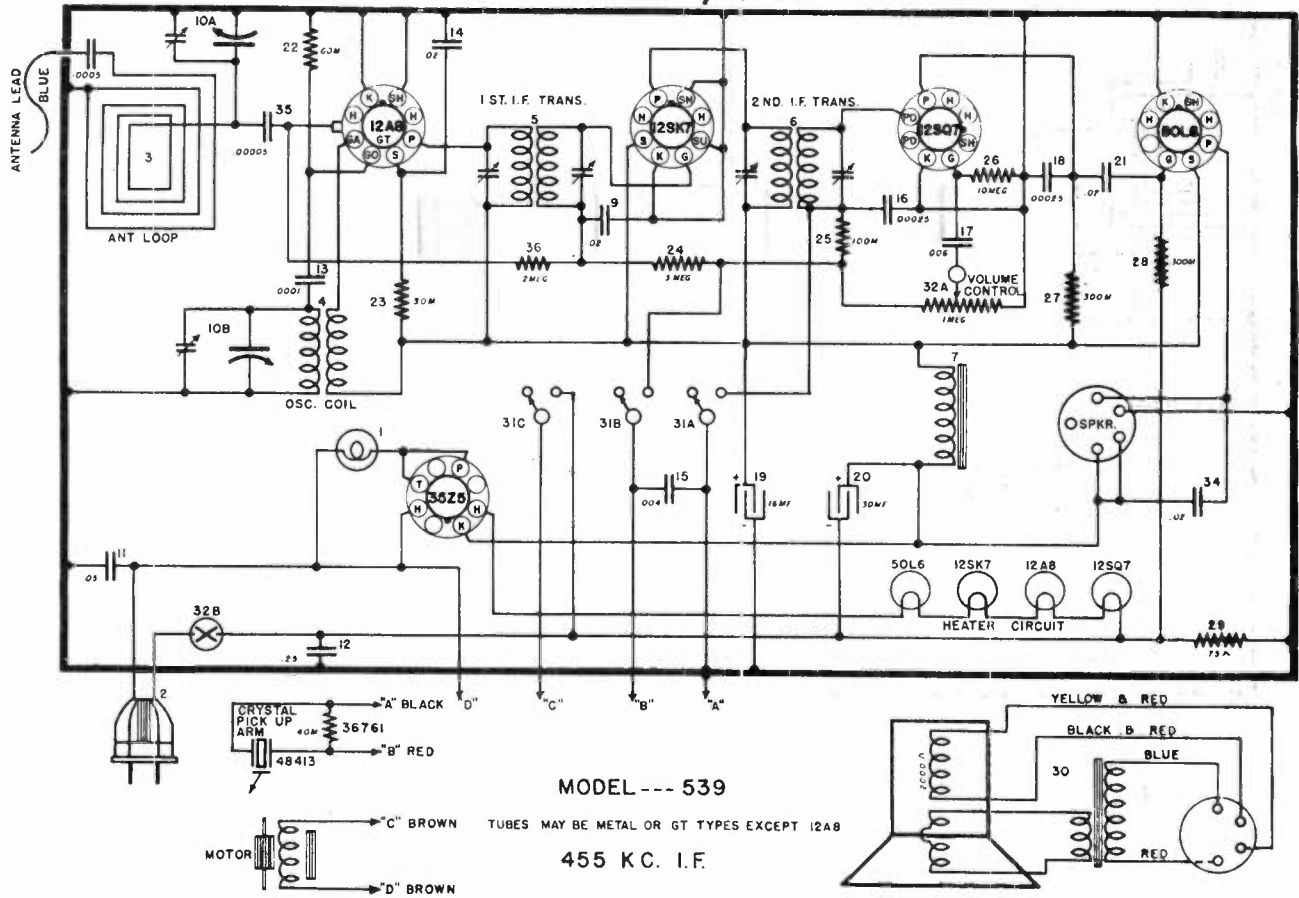


FIG. 1-C—WIRING DIAGRAM—MODEL 539

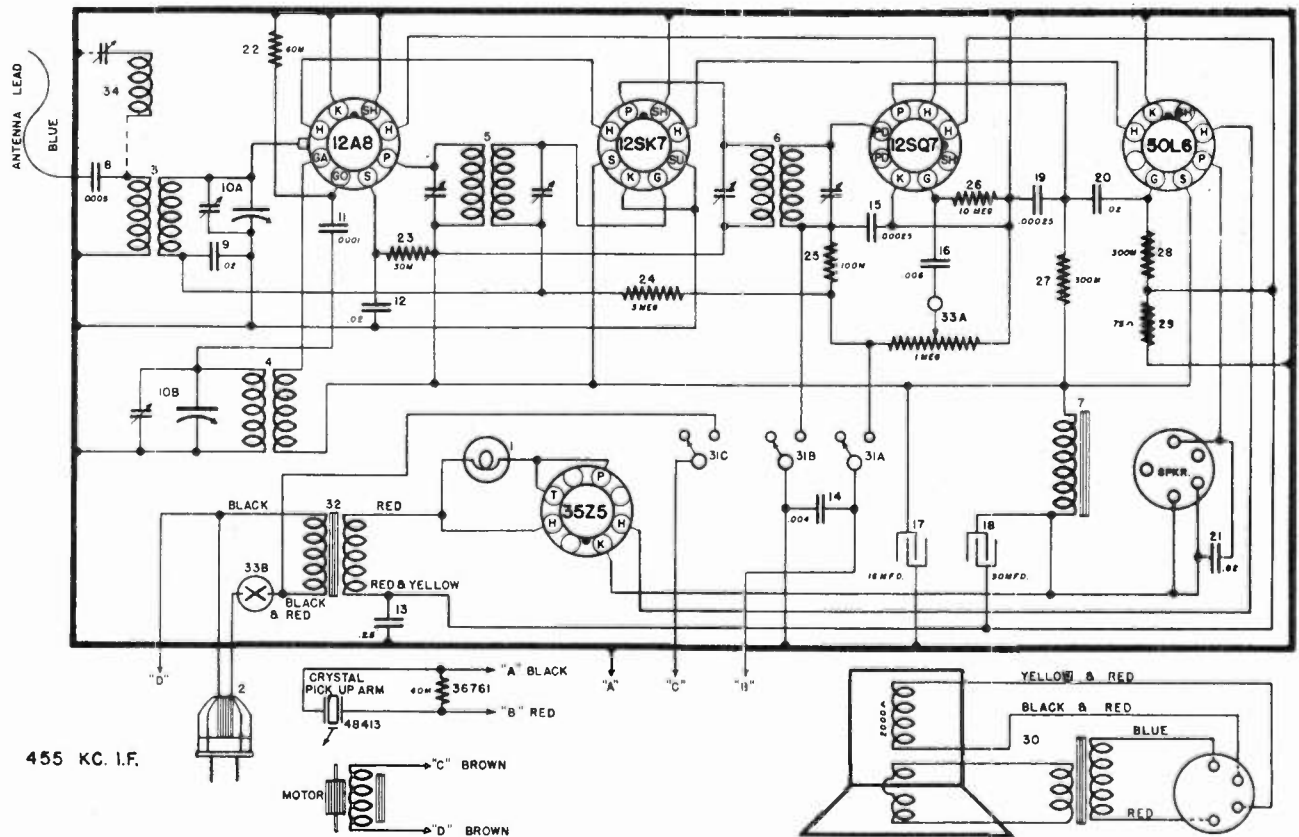


FIG. 1-D—WIRING DIAGRAM—MODEL J-539



MODELS 5539, J5539

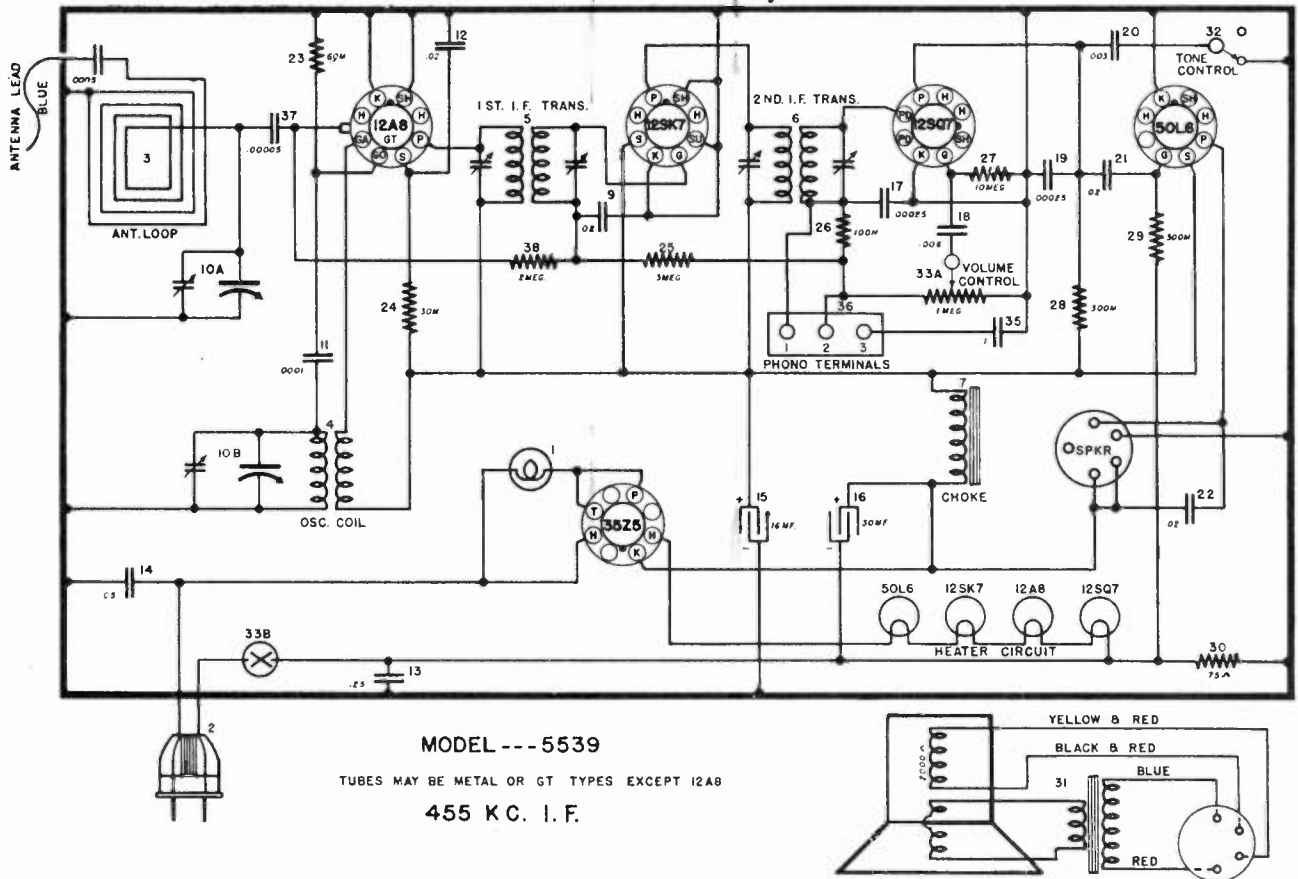


FIG. 1-A—WIRING DIAGRAM—MODEL 5539

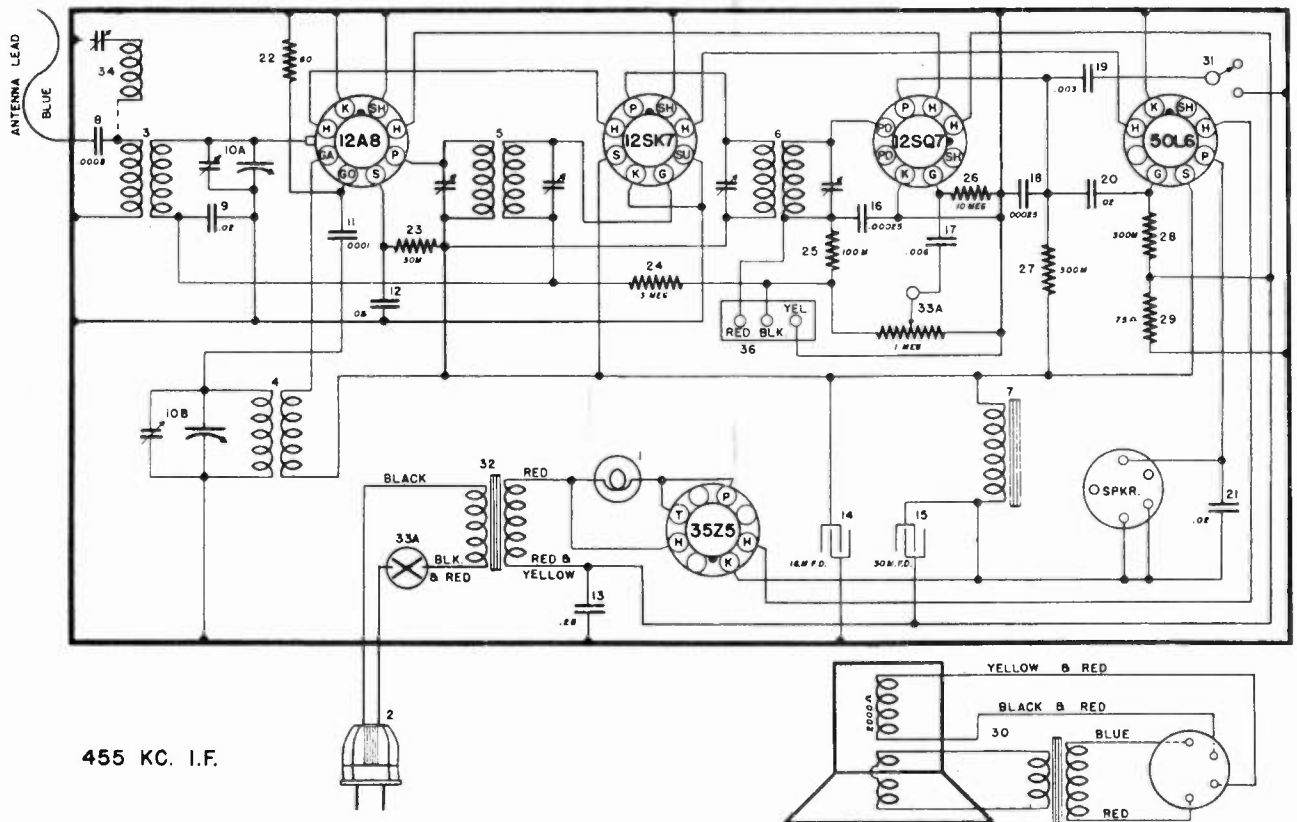


FIG. 1-B—WIRING DIAGRAM—MODEL J-5539

PARTS LIST — MODELS 539, J-539

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	—43567	Dial Lamp		—45985	R. H. Clin—Dial Glass Mtg.	
2	G2 —47431	Socket Assy. Dial Lamp		—45850	Pointer—Dial Hand	
2	—45784	Power Cord and Plug		—46037	Guide—Pointer	
2	—45769	Power Cord and Plug (J-539)	G12	—43564	Pulley and Hub Assy.	
3	G186—32000	Antenna Coil		—46056	Shaft—Manual Drive	
3	G7 —48821	Loop Antenna (Loop Sets only)		—43542	Bracket—Drive Shaft Mtg.	
4	G184—32002	Oscillator Coil	G2	—41582	Drive Cord (44 Inch)	
5	G221—32004	1st I-F. Assy.		—46087	Spring—Cord Tension	
6	G188—32004	2nd I-F. Assy.		—45766	Felt Strip	
7	—47704	"B" Filter Choke		—45580	Rubber Grommet—P. B. Unit Mtg.	
8	G3 —34002	Condenser, .0005 Mf. Mica		—45620	Head Bushing—Grommet Mtg.	
9	—28621	Condenser, .02 Mf. 200 V.		—47789	R. H. Chassis Mtg. Strap (One Lug Off)	
10	G52 —33001	Condenser, 2 Section Var. Tuning		—45764	L. H. Chassis Mtg. Strap	
11	—32380	Condenser, .05 Mf. 200 V.		—46019	Support Strip—Power Trans. (J-539)	
11	G2 —34002	Condenser, .0001 Mf. Mica (J-539)		9EM	Cabinet	
12	—34712	Condenser, .25 Mf. 160 V.		—49502	Cabinet Lid	
12	—28621	Condenser, .02 Mf. 200 V. (J-539)		—48330	Lid Cushion	
13	G2 —34002	Condenser, .0001 Mf. Mica		—47735	Cabinet Back	
13	—34712	Condenser, .25 Mf. 160 V. (J-539)		—46464	Thumb Screw—Back Mtg.	
14	—28621	Condenser, .02 Mf. 200 V.		—47709	Shipping Carton	
14	—35139	Condenser, .004 Mf. 400 V. (J-539)		—47850	Hinge—Cabinet Lid	
15	—35139	Condenser, .004 Mf. 400 V.		—18527	Hinge Screw (FS-18)	
15	G1 —34002	Condenser, .00025 Mf. Mica (J-539)		—47159	Lid Support	
16	G1 —34002	Condenser, .00025 Mf. Mica		—45771	Knob	
16	—34713	Condenser, .006 Mf. 160 V. (J-539)		—48428	Push Button	
17	—34713	Condenser, .006 Mf. 160 V.		—47436	Instruction Booklet (No Loop)	
17	—45783	Condenser, 16 Mf. 125 V. (J-539)		—49132	Instruction Booklet (With Loop)	
18	G1 —34002	Condenser, .00025 Mf. Mica	MG31	—47421	Instruction Envelope Assy. (Receivers With Loop)	
18	—47702	Condenser, 30 Mf. 125 V. (J-539)		—50551	Celluloid Cover—Call Letter	
19	—45783	Condenser, 16 Mf. 125 V.		—47851	Station Call Sheet	
19	G1 —34002	Condenser, .00025 Mf. Mica (J-539)		—47706	R. H. Chassis Support Bracket	
20	—47702	Condenser, 30 Mf. 125 V.		—47707	L. H. Chassis Support Bracket	
20	—28621	Condenser, .02 Mf. 200 V. (J-539)		—47761	Oval, Phillips Ctsk. Hd. Screw—Chassis Mtg.	
21	—28621	Condenser, .02 Mf. 200 V.		—47728	Decorative Washer—Chassis Mtg.	
22	—35928	Resistor, 60,000 Ohms 1/4 W.		—47721	Sw'g'd Hd. Mach. Screw—Spkr. Mtg.	
23	—33390	Resistor, 30,000 Ohms 1/4 W.		—2046	No. 8 Int. Shakeproof Washer—Spkr. Mtg.	
24	—26577	Resistor, 3 Megohms 1/4 W.		—5096	8—32 Nut—Speaker Mtg.	
25	—35600	Resistor, 100,000 Ohms 1/4 W.		—47712	Baffle Plate—Speaker Mtg.	
26	—50956	Resistor, 10 Megohms 1/4 W.		—47217	Rubber Grommet—Baffle Mtg.	
27	—21455	Resistor, 300,000 Ohms 1/4 W.		—47219	Headed Bushing—Baffle Mtg.	
28	—21455	Resistor, 300,000 Ohms 1/4 W.		N	8—32 Nut—Baffle Mtg.	
29	—48708	Resistor, 75 Ohms 1/2 W.		—47805	Dust Cloth—Speaker Opening	
30	390-BP-12" M"	Speaker, Mfr. Spec. No. 1-D-1580		—47844	Escutcheon—Dial Opening	
	—48882	V. C. and Cone Assy.		—47843	Phillips Hd. Wood Screw—Escutcheon Mtg.	
	—43674	Cardboard Ring—Cone Mtg.		—47758	Chassis Bottom (J-539)	
	—48883	Field Coil (2,000 Ohms)		—48927	Loop Antenna Shield	
	—48884	Output Transformer		—49060	Loop Support Block	
	—44682	Speaker Plug		—46169	Motor, 110 Volt, 50-60 Cycle	
31	—47665	Phono-Radio Switch		MG45—46153	Rubber Drive Pulley—60 Cycle Kit	
32	—46124	Line Switch and Vol. Control (1 Meg.)		MG46—46153	Rubber Drive Pulley—50 Cycle Kit	
32	—48159	Power Transformer, 110 V., 50, 60 Cycle (J-539 only)		—46174	Bracket—Motor Mounting	
33	G193—32004	Wave Trap—Model 539 Without Loop		S	—159	Screw—Motor Bracket Mounting
33	—46124	Line Switch and Vol. Control (1 Meg.) (J-539)		S	—46144	Motor Shield—Top Cover
34	—28621	Condenser, .02 Mf. 200 V.		—80	Screw—Motor Shield Mounting	
34	G193—32004	Wave Trap—Model J-539 Without Loop		—49115	Motor—110 Volt, 50-60 Cycle (J-539)	
35	G5 —34002	Condenser, .00005 Mf. Mica—Loop Sets only		—47399	Insulating Cover—Motor (J-539)	
36	—35927	Resistor, 2 Megohms—Loop Sets only	MG32	—47421	Tone Arm Complete	
	G7 —45683	Push Button Unit		—47327	Flat Washer—Tone Arm Mtg.	
	G23 —45683	Riveted Key Assy.		—47328	Lockwasher—Tone Arm Mtg.	
	—50542	Clamp—Toggle Lock		—47329	Nut (1/2"—32)—Tone Arm Mtg.	
	—45717	Screw—Station Setting		—47326	Arm and Pivot only	
	—50607	Spring—Key Return		—47325	Crystal Unit only	
	—50547	Plate—Key Slide Adj.		—47324	Needle Screw	
	G22 —45683	Rocker Bar and Gear Assy.		—47333	Tone Arm Rest Bracket	
	—50273	Rubber Band (Key)		—47335	Locking Ring—Tone Arm Rest	
	—50561	Screw—Rocker Bar Bearing		—47724	Rubber Arm Rest	
	G28 —45683	Riveted Mtg. Bracket (P. B. Unit)		—7801	Screw—Rest Bracket Mounting	
	—47717	Glass Dial—Without Loop		—47791	Needle Cup	
	—48986	Glass Dial—Loop Models only		—47790	Lid—Needle Cup	
	—45742	Cushion—Dial Glass		—46364	Chrome Tipped Needle	
	MG14—45894	R. H. Riveted Dial Support Bracket		—46172	Turntable (FS-71)	
	MG15—45894	L. H. Riveted Dial Support Bracket		—36761	Resistor, 40,000 Ohms 1/4 W.	
	—45743	Dial Support		—48413	Tone Arm Assy.	
	—45984	L. H. Clip—Dial Glass Mtg.				

PARTS LIST — MODELS 5539, J-5539

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Dial Lamp	38	—35927	Resistor, 2 Megohms—Loop Model only
	G2 —47431	Socket Assy. —Dial Light		G11 —45683	Push Button Unit
2	—45784	Power Cord and Plug		G26 —45683	Riveted Key Assy.
2	—45769	Power Cord and Plug (J-5539)		—50542	Clamp—Toggle Lock
3	G186 —32000	Antenna Coil		—45717	Screw—Station Setting
3	G7 —48821	Loop Antenna—Later Models		—50607	Spring—Key Return
4	G184 —32002	Oscillator Coil		—50547	Plate—Key Slide Adj.
5	G221 —32004	1st I-F. Assy.		G22 —45683	Rocker—Bar and Gear Assy.
6	G188 —32004	2nd I-F. Assy.		—50273	Rubber Band (Key)
7	—47704	"B" Filter Choke		—50561	Screw—Rocker Bar Bearing
8	G3 —34002	Condenser, .0005 Mf. Mica		G28 —45683	Riveted Mtg. Bracket (P. B. Unit)
9	—28621	Condenser, .02 Mf. 200 V.		—47725	Glass Dial Face—Model Without Loop
10	G52 —33001	Condenser Gang—2 Sect. Var. Tuning		—49076	Glass Dial Face—Loop Model only
11	G2 —34002	Condenser, .0001 Mf. Mica		—45742	Cushion—Dial Glass (Short)
12	—28621	Condenser, .02 Mf. 200 V.		MG14 —45894	R. H. Riveted Dial Support Bracket
13	—34712	Condenser, .25 Mf. 160 V.		MG15 —45894	L. H. Riveted Dial Support Bracket
14	—32380	Condenser, .05 Mf. 200 V.		—45743	Dial Support
14	—45783	Condenser, 16 Mf. 125 V. (J-5539)		—46388	Extension—Dial Support
15	—45783	Condenser, 16 Mf. 125 V.		—45978	Clip—Dial Mounting (4)
15	—47702	Condenser, 30 Mf. 125 V. (J-5539)		G2 —46757	Pointer—Dial Hand Assy.
16	—47702	Condenser, 30 Mf. 125 V.		G12 —43564	Pulley and Hub Assy.
16	G1 —34002	Condenser, .00025 Mf. Mica (J-5539)		—46056	Shaft—Manual Drive
17	G1 —34002	Condenser, .00025 Mf. Mica		—43542	Bracket—Shaft Mounting
17	—34713	Condenser, .006 Mf. 160 V. (J-5539)		G2 —41582	Drive Cord (42 Inch)
18	—34713	Condenser, .006 Mf. 160 V.		—46087	Spring—Cord Tension
18	G1 —34002	Condenser, .00025 Mf. Mica (J-5539)		—45766	Felt Strip
19	G1 —34002	Condenser, .00025 Mf. Mica		490-BP-15"R"	Speaker, Mfg. Spec. No. F-5725
19	—25435	Condenser, .003 Mf. 400 V. (J-5539)		—48616	V. C. and Cone Assy.
20	—25435	Condenser, .003 Mf. 400 V.		—43978	Cardboard Ring—Cone Mtg.
20	—28621	Condenser, .02 Mf. 200 V. (J-5539)		—48617	Output Transformer
21	—28621	Condenser, .02 Mf. 200 V.		—48618	Field Coil (2,000 Ohms)
22	—28621	Condenser, .02 Mf. 200 V.		490-BP-15"H"	Speaker, Mfg. Spec. No. S-6077-BA8
22	—35928	Resistor, 60,000 Ohms (J-5539)		—49496	V. C. and Cone Assy.
23	—35928	Resistor, 60,000 Ohms		—49499	Cardboard Ring—Cone Mtg.
23	—33390	Resistor, 30,000 Ohms (J-5539)		—49498	Output Transformer
24	—33390	Resistor, 30,000 Ohms		—49497	Field Coil (2,000 Ohms)
24	—26577	Resistor, 3 Megohms (J-5539)		9EP	Cabinet
25	—26577	Resistor, 3 Megohms		—47736	Back—Cabinet
25	—35600	Resistor, 100,000 Ohms (J-5539)		—46464	Thumb Screw—Back Mtg.
26	—35600	Resistor, 100,000 Ohms		—47734	Shipping Carton
26	—50956	Resistor, 10 Megohms (J-5539)		—47960	Knob (3 Req.)
27	—50956	Resistor, 10 Megohms		—45553	Push Button
27	—21455	Resistor, 300,000 Ohms (J-5539)		—47851	Call Letter Sheet
28	—21455	Resistor, 300,000 Ohms		—50551	Celluloid Cover—Call Letter
29	—21455	Resistor, 300,000 Ohms		—47730	Instruction Booklet (No Loop)
29	—48708	Resistor, 75 Ohms 1 1/2 W. (J-5539)		—49133	Instruction Booklet (With Loop)
30	—48708	Resistor, 75 Ohms 1 1/2 W.		—48206	Instruction Booklet (J-5539) (No Loop)
30	490-BP-15	Speaker (J-5539)		—49134	Instruction Booklet (J-5539) (With Loop)
31	490-BP-15	Speaker		MG31 —47716	Instruction Envelope Assy. (5539) (With Loop)
	—44682	Plug—Speaker		MG31 —48029	Instruction Envelope Assy. (J-5539) (With Loop)
	—47705	Switch Mtg. Plate—Tone Control		—48927	Shield—Antenna Loop
31	—47726	Tone Control Switch (J-5539)		G9 —48821	Antenna Support Assy.
32	—47726	Tone Control Switch		—49352	Phono Instruction
32	—48159	Power Transformer, 50-60 Cycle, 110 Volt for J-5539 only			
33	—46124	Line Switch and Vol. Control (1 Meg.)			
34	G193 —32004	Wave Trap—Not Used With Loop			
35	—24049	Condenser, .1 Mf. 200 V. (5539 only)			
36	G51 —26719	Phono Terminal Board			
37	G5 —34002	Condenser, .00005 Mf. Mica—Loop Model only			

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	Su	G	K
6D6	Osc.-Mod.	6.5	105	105	0	-17	20
6D6	I-F Amplifier	6.5	105	105	3.5	0	3.5
6B7	Diode Detector & A-F Amplifier	6.5	25	20	—	0	1.5
43	Output	25.2	100	105	—	-20	0
25Z5	Rectifier	25.2	117.5	A.C.			

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6D6 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer (18-Y Fig 3) located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer (18-Z) located on the "ANT" section of the condenser gang for maximum output.

(f) Readjust the tuning condenser slightly for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784B	Ant. (Flex Wire)	W	—36150A	Dial Face
2	G4 —27134	Dial Light Socket Assm.		—37158	Dial Glass
3	G3 —28859	Filter Choke		—37156	Pointer
4	G51—32000	Ant. Coil		—37157	Pointer Screw
	W —36457	Ant. Coil Mounting Brkt.	19	B —33906A	Power Supply Cord & Plug
5	G51—32004	1st I. F. Assm.	20	—31093	Resistor, 2700 Ohm ¼ W.
6	G49—32004	2nd I. F. Assm.	21	—23616	Resistor, 15,000 Ohm 1. W.
7	G6 —32002	Osc. Coil	22	—21237A	Resistor, 60,000 Ohm ¼ W.
	W —25200	Coil Socket	23	—35929	Resistor, 150,000 Ohm ¼ W.
	W —25025B	Coil Shield	24	—21455	Resistor, 300,000 Ohm ¼ W.
	W —26891	Coil Insulator	25A	—23785	Resistor, 500,000 Ohm ¼ W.
	W —21541C	Retaining Ring	25B	—23785	Resistor, 500,000 Ohm ¼ W.
8Z		Condenser, 25. Mfd. 125 V.	26	—33490	Resistor, 10. Megohm ¼ W.
8Y		Condenser, 8. Mfd. 125 V.	27	W —28589	Resistor, 350 Ohm ½ W. Flex.
8X	W —31992	Condenser, 16. Mfd. 100 V.	28	W —27503	Resistor, 1,400 Ohm ½ W. Flex.
8W		Condenser, 10. Mfd. 125 V.	29	W —36114	Resistor, Candohm
9	G2 —34002	Condenser, 100. Mmfd.	30A	G75—28807	Socket, 6D6
10	W —30325A	Condenser, 0.003 Mfd. 200 V.	30B	G75—28807	Socket, 6D6
11Z	W —30322A	Condenser, 0.00017 Mfd. 200 V.	31	G51—28807	Socket, 25Z5
11Y		Condenser, 0.006 Mfd. 200 V.	32	G30—28807	Socket, 43
12	W —30323	Condenser, 0.01 Mfd. 200 V.	33	G48—28807	Socket, 6B7
13	W —28621	Condenser, 0.02 Mfd. 200 V.		W —35772	Tube Shield (Half) (6)
14Z	W —28623	Condenser, 0.02 Mfd. 200 V.		W —35773	Tube Shield Cap (3)
14Y		Condenser, 0.02 Mfd. 200 V.		W —35774	Tube Shield Base (3)
15Z	W —29271	Condenser, 0.02 Mfd. 400 V.	34	214—BL—9	Speaker
15Y		Condenser, 0.02 Mfd. 400 V.	35Z		Volume Control
16	W —24049B	Condenser, 0.1 Mfd. 200 V.	35Y	—36265	On-Off Switch
17	W —29910A	Condenser, 0.25 Mfd. 200 V.	36	W —32780A	Condenser, 0.05 Mfd. 400 V.
18Z			37	—34883	Resistor, 2 Megohm ¼ W.
18Y	G14—33001	2 Section Tuning Cond. Gang		B —35917	Escutcheon
	—36147B	Dial Drive Assm.		D —28	Escutcheon Screws (3)
MG16	—35757	Dial Drive Support Brkt. Assm.		W —31585B	Knobs (2)

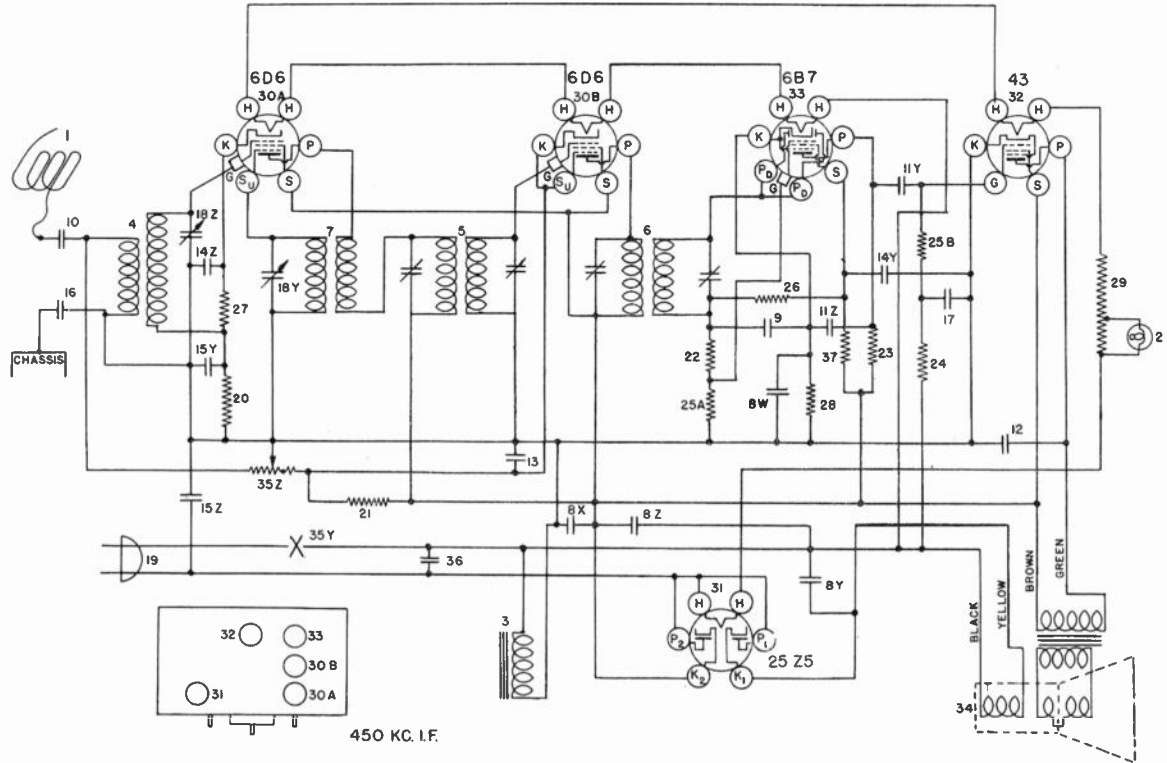


FIG. 1—WIRING DIAGRAM—MODEL 545

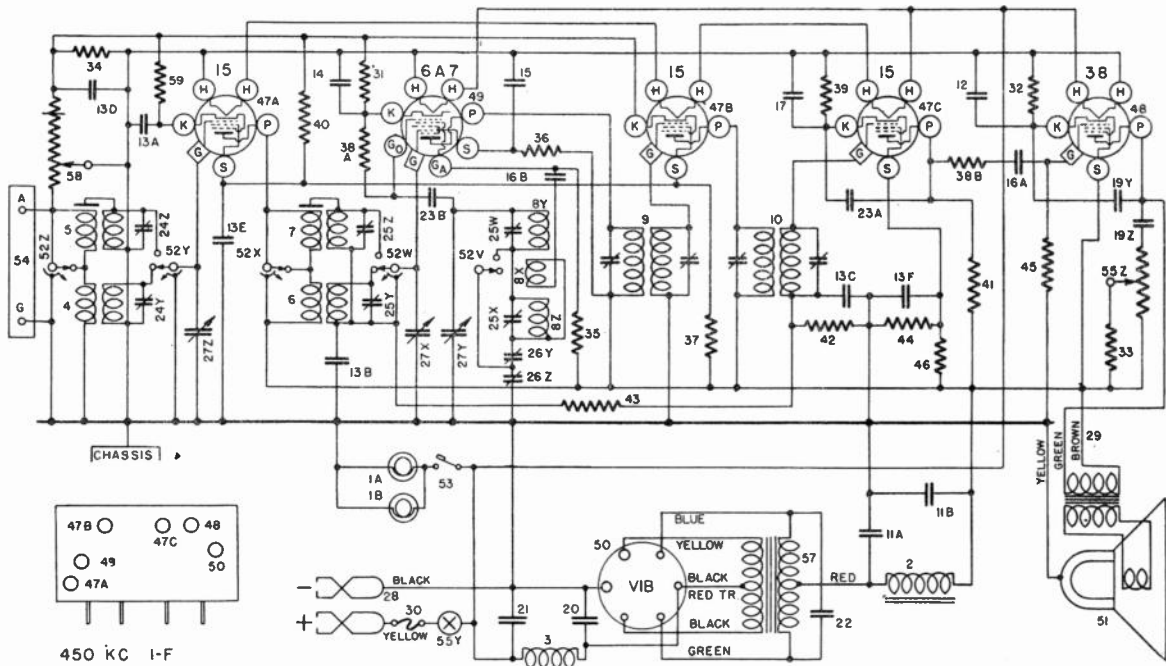


FIG. 1. WIRING DIAGRAM—MODEL 546

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Ga	Go
15	R-F Amplifier	2.0	180	96	2.6	—	—
6A7	Oscillator-Modulator	6.0	180	84	3.8	130	Neg
15	I-F Amplifier	2.0	180	96	2.6	—	—
15	Detector	2.0	90	13	3.8	—	—
38	Output	6.0	170	180	14.5	—	—

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R.F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer.

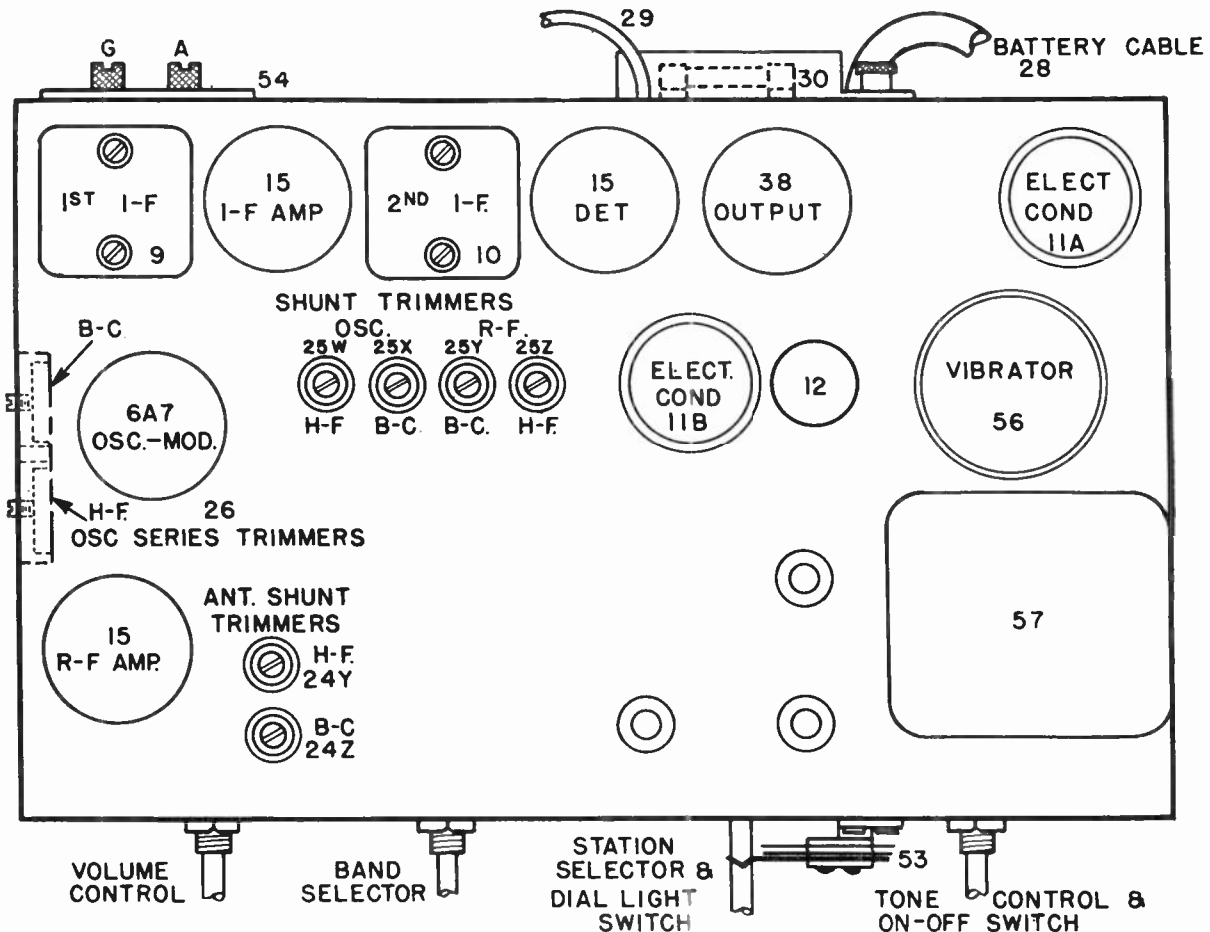


Fig. 2. Top View 546

## PARTS LIST—MODEL 546

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —37922	Dial Bulb		W —34223	Fuse Cover Insulator
	G3 —37965	Dial Light Socket Assembly		W — 4072	Thumb Screw (Cover)
2	G27 —24628	Filter Choke	31	W —21964	Resistor 165 Ohm 1/2 W. Flexible
3	G16 —28067	R-F Filter Choke	32	W —21452	Resistor 1100 Ohm 3/4 W. Flexible
4	G114—32000	Ant Coil—B-C-B	33	W —27503	Resistor 1400 Ohm 3/4 W. Flexible
5	G115—32000	Ant Coil—H-F-B	34	W —23013	Resistor 2000 Ohm 1 1/4 W. Flexible
6	G81 —32001	R-F Coil—B-C-B	35	W —37485	Resistor 15,000 Ohm 1/2 W. Car.
7	G82 —32001	R-F Coil—H-F-B	36	—33390	Resistor 30,000 Ohm 1/4 W. Car.
8	G104—32002	Double Osc. Coil.	37	—37472	Resistor 50,000 Ohm 1/4 W. Car.
9	G109—32004	1st I-F Assembly	38A	—21237A	Resistor 60,000 Ohm 1/4 W. Car.
10	G110—32004	2nd I-F Assembly	38B	—21237A	Resistor 200,000 Ohm 1/4 W. Car.
11A	W —36057	Condenser 40 Mfd. 300 V. Electrolytic	39	—36761	Resistor 40,000 Ohm 1/4 W. Ins.
11B	W —36057	Condenser 40 Mfd. 300 V. Electrolytic	40	—23403	Resistor 150,000 Ohm 1/4 W. Car.
12	W —41195	Condenser 12 Mfd. 25 V. Electrolytic	41	—35930	Resistor 200,000 Ohm 1/4 W. Ins.
13A	W —35936	Condenser .05 Mfd. 200 V	42	—23785	Resistor 500,000 Ohm 1/4 W. Car.
To			43	—21454	Resistor 1 Megohm 1/4 W. Car.
13E	W —35936	Condenser .05 Mfd. 200 V.	44	—35602	Resistor 1 Megohm 1/4 W. Ins.
14	W —32380	Condenser .05 Mfd. 200 V.	45	—37245	Resistor 1.5 Megohm 1/4 W. Car.
15	W —30488	Condenser .02 Mfd. 400 V.	46	—36688	Resistor 3 Megohm 1/4 W. Ins.
16A	W —34647	Condenser .006 Mfd. 400 V.	47A	G88 —28807	Socket Type 15
16B	W —34647	Condenser .006 Mfd. 400 V.	47B	G88 —28807	Socket Type 15
17	W —34712	Condenser .25 Mfd. 160 V.	47C	G88 —28807	Socket Type 15
18	W —24049B	Condenser .1 Mfd. 200 V.	48	G15 —28807	Socket Type 38
19Z	W —25537A	Condenser .03 Mfd. 400 V.	49	G47 —28807	Socket Type 6A7
19Y	W —25537A	Condenser .001 Mfd. 400 V.	50	G92 —28807	Socket Type V1B.
20	W —37174	Condenser .5 Mfd. 160 V.		W —27981A	Tube Shield Base
21	W —37190	Condenser .02 Mfd. 160 V.		W —40911	Tube Shield
22	W —37214	Condenser .001 Mfd. 1000 V.	51	—33PJ-3	Speaker Spec. R-6000 D-1 (Table)
23A	G2 —34002	Condenser .0001 Mfd. (Molded)		—41434	Cone Assy. for Above Speaker
23B	G2 —34002	Condenser .0001 Mfd. (Molded)		—41454	Output Transformer for Above Speaker
24	W —37986	2 Section Shunt Trimmer Condenser		—41458	Mtg. Ring (Cardboard) for Above Cone
25	W —41247	4 Section Shunt Trimmer Condenser		—43PJ-3	Speaker Spec. R-8000 B-3 (Console)
26	W —41288	2 Section Osc. Series Trimmer		—41452	Cone Assy. for Above Speaker
27	G23 —33001	3 Section Var. Tuning Condenser		—41459	Mtg.-Ring (Cardboard) for Above Cone
	C —41321	Dial (Glass)		—41456	Output Transformer for Above Speaker
	W —40804	Dial Glass Cushion	52	B —41253A	Band Selector Switch
	B —40818B	Pointer Disc	53	W —41068A	Dial Light Switch
	W —40486	Pointer Disc Screw	54	G10 —26719	Ant. & Grd. Terminal Assembly
	W —41314	Shaft Assembly (Sprocket etc.)	55Z		Tone Control
	B —41316	Support Bracket (Bearing)	55Y		On-off Switch
	B —41315	Sprocket Assembly (Driver)	56		Vibrator
	W —40909	Spring Washer (Shaft)	57	G11 —32769	Power Transformer
	W —31840A	Snap Spring (Shaft)	58	—41252	Volume Control (10,000 Ohm)
	W —41317	Lower glass Support Bracket	59	W —35467	Resistor 220 Ohm 1/2 W. Flexible
	W —41318	Upper glass Support Bracket R-H		—34903	Battery Clip (+) (Pos.)
	W —41319	Upper glass Support Bracket L-H		—34904	Battery Clip (-) (Neg.)
	W —41320	Drive Chain		B —40839	Escutcheon
	W —41743	Chain Take up Spring		W —28760B	Escutcheon Pin
28	MG25—37103	Battery Cable Assembly		W —41221	Upper Knob (1) } Dial Light
29	G9 —35696	Speaker Cable		W —41222	Lower Knob (1) } Station Select.
30	W —37624	Fuse (4 Amp.)		W —41366A	Knob (1) Band Select.
	G2 —33339	Fuse Panel Assembly		W —41224	Knob (2) V. C. & T. C
	W —33310A	Fuse Cover			

**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G	Ga	Go
1C7-G	Oscillator-Modulator	2.0	120	40	0	120	-3
1D5-G	I-F Amplifier	2.0	120	40	0	—	—
1H6-G	Detector & 1st A-F Amp.	2.0	50	—	0	—	—
1H4-G	2nd A-F Amplifier	2.0	50	—	0	—	—
1G5-G	Output	2.0	123	129	-6	—	—

Power Output approximately .750 Watt.  
 "A" Battery Drain approximately .42 Ampere at 2 Volts.  
 "B" Battery Drain approximately 18 Milliampere at 135 Volts.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1G5G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning the I-F Amplifier To 455 Kilocycles.**

- Connect the output of the signal generator through a .02 mfd., or larger condenser to the top cap of the 1C7G Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.
- Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.
- Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**2. Aligning the R-F Amplifier.**

- Connect the output lead from the signal generator through a .0001 mfd. condenser to the "ANT." terminal of the receiver. Connect generator ground lead to the chassis.
- Set signal generator to 1725 kilocycles.
- Open condenser gang all the way.
- Adjust "OSC." trimmer on gang to 1725 kc. signal, the gang does not have to tune through this signal.
- Set signal generator to 1400 kilocycles.
- Tune-in 1400 kc. signal with station selector, should be approximately 140 on dial.
- Adjust "ANT." trimmer on gang for maximum output. Do not readjust "OSC" trimmer. Repeat above operations for more accurate adjustments.

**MODEL 558**

This model receiver is similar to model 548. The main difference is in the output system. The output tube is a 1J6G, dual triode, impedance coupled. Bias for the 1J6G is obtained from drop across item 27 a 60 ohm resistor. The use of the 1J6G will increase the total "A" drain as listed in the 548 voltage chart by 120 M. A. Likewise the maximum power output is increased to approximately 2 watts.

The R-F and I-F adjustment procedure is the same as model 548.

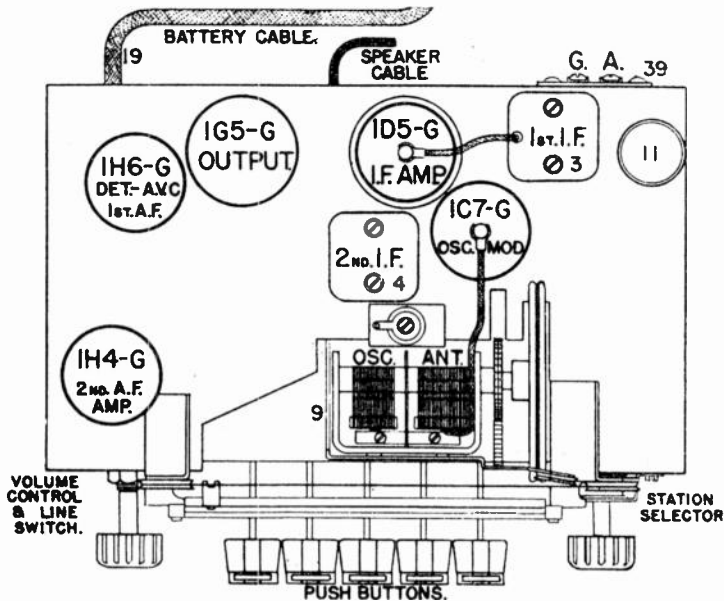


Fig. 2—Top View Model 548

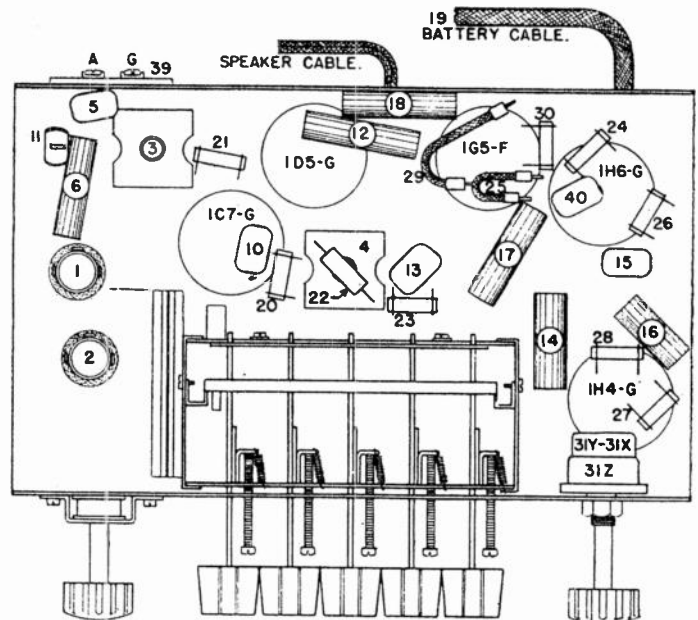


Fig. 3—Bottom View Model 548



MODELS 548, 5548, 558

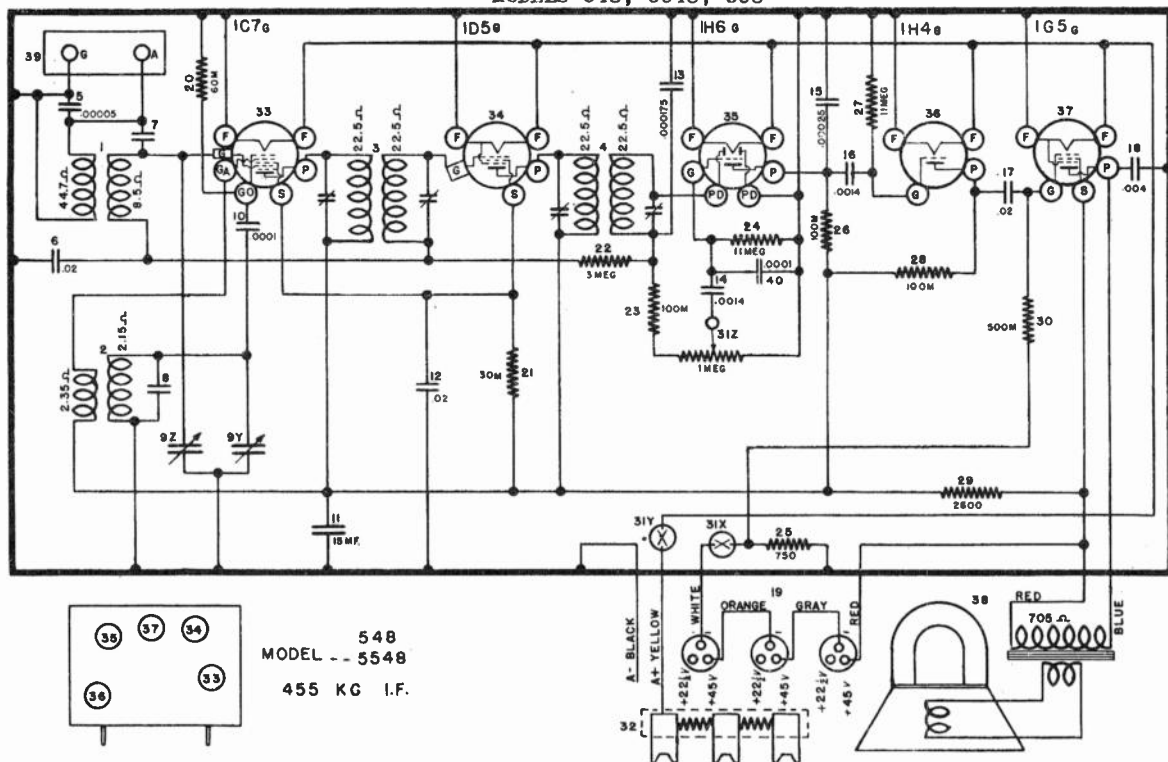


FIG. 1A—WIRING DIAGRAM MODELS 548, 5548

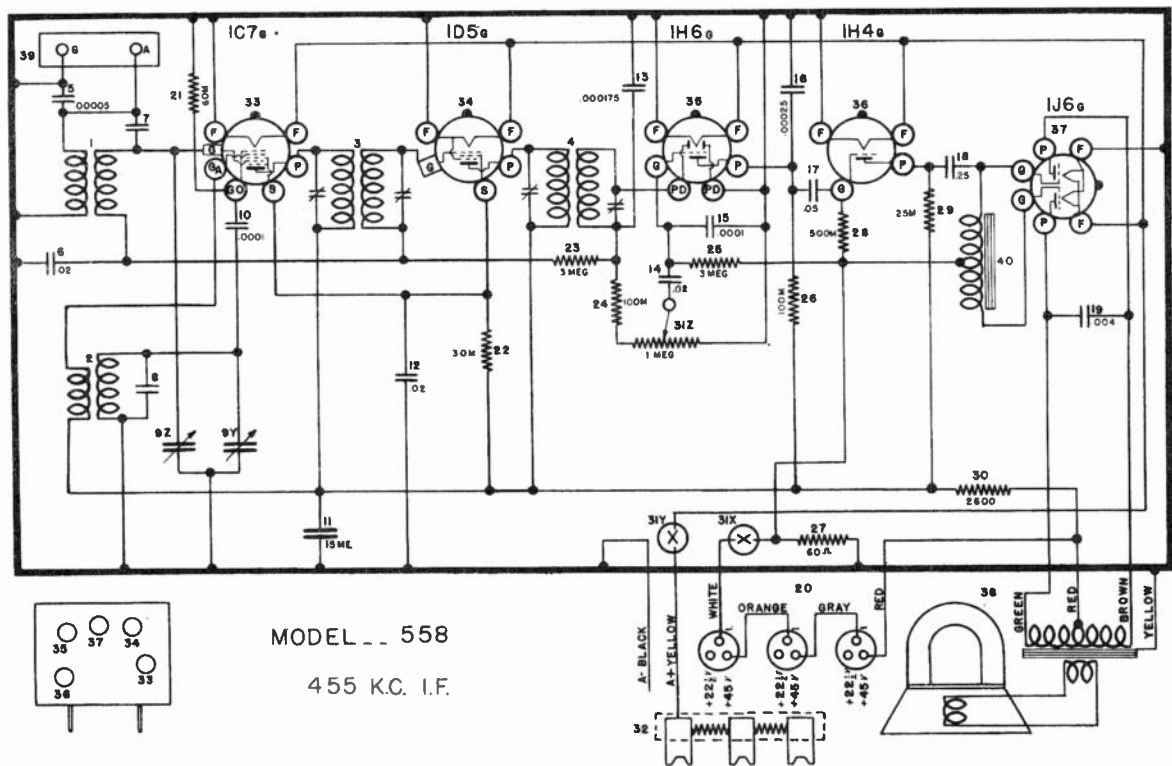


FIG. 1B—WIRING DIAGRAM MODEL 558

PARTS LIST—MODELS 548 & 5548

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G176—32000	Antenna Coil	38	W —40911	Tube Shield
2	G177—32002	Oscillator Coil		274PL18"H"	Speaker, Spec. S-4504 AMD5
3	G194—32004	1st I. F. Transformer		—46800	Speaker Cone Assembly
4	G195—32004	2nd I. F. Transformer		—46802	Output Transformer
5	G5 —34002	Condenser, .00005 Mf. Molded		—46803	Cardboard Ring
6	W —28621	Condenser, .02 Mf. 200 V. Paper	39	G1 —26719	Terminal (A-G)
7	G5 —50640	Condenser (Capacity Coupling) Ant.	40	G2 —34002	Condenser, .0001 Mf. Molded
8	G3 —50640	Condenser (Capacity Coupling) Osc.		G3 —45683	Push Button Unit Assembly
9Z	G52 —33001	2 Sect. Condenser (Antenna Oscillator)		G32 —45683	Riveted Key Assembly
9Y	W —23877	Set Screw (For Pulley-Hub Assembly)		G22 —45683	Rocker Plate Assembly
	G12 —43564	Pulley and Hub Assembly		MG28 —45683	Riveted Mounting Bracket
	MG14—45894	Riveted Dial Support Bracket, R. H.		W —50547	Key Plate
	MG16—46000	Riveted Dial Support Bracket, L. H.		W —50670C	Key Return Spring
	C —46042	Dial Glass		W —45646B	Adjusting Clip
	W —45984	Dial Glass Clip, L. H.		W —30542D	Key Clip (Lock Clamp)
	W —45985	Dial Glass Clip, R. H.		W —30561	Screw (Rocker Plate Bearing)
	W —46397	Dial Pointer (White)		—45717	Clamp Screw (No. 6—32 x 1 1/4")
	W —46037	Dial Hand Guide		—31388	Key Plate Mounting Screw (No. 8—32 x 3/4")
	W —45742B	Dial Glass Cushion		—2046	No. 8 Shakeproof Washer (Key Plate Screw)
	B —45743B	Dial Support			
	—46056	Drive Shaft (5548)			
	—45865	Drive Shaft (548)			
	W —43542B	Drive Shaft Bracket			
	G2 —41582	Drive Cord (44 Inches)		—RAA	Cabinet
	W —46290	Cord Clamp		—45771	Knob (2 Req.)
	W —46087	Drive Cord Spring		—46006	Instruction
10	G2 —34002	Condenser, .0001 Mf. Molded		—4553B	Push Button (5 Req.)
11	W —45968	Condenser, 15 Mf. 250 V. Elect.		—47863	Call Letter Sheet
12	W —28621	Condenser, .02 Mf. 200 V. Paper	W	—30551B	Call Letter Cover
13	G11 —34002	Condenser, .000175 Mf. Molded	N	—6	No. 6—32 Hex. Nut (Sprk. Mtg.) (3 Req.)
14	W —41461	Condenser, .0014 Mf. 200 V. Paper	W	—2118	No. 6 Shakeproof Washer (Sprk. Mtg.) (3 Req.)
15	G1 —34002	Condenser, .00025 Mf. Molded		—45762A	Cardboard
16	W —41461	Condenser, .0014 Mf. 200 V. Paper		—46242	Rubber Mounting Screw (Chassis Mtg. Screw) (4 Req.)
17	W —28621	Condenser, .02 Mf. 200 V. Paper			
18	W —28904	Condenser, .004 Mf. 200 V. Paper			
19	C —46014	Battery Cable, Model 548			
20	C —46072A	Battery Cable, Model 5548			
21	—21237A	Resistor, 60,000 Ohms 1/4W. Carbon		—8D	Cabinet
22	—33390	Resistor, 30,000 Ohms 1/4W. Carbon	B	—46118A	Escutcheon
23	—26577	Resistor, 3 Megohms 1/4W. Carbon		—43772	Knob (2 Req.)
24	—21875	Resistor, 100,000 Ohms 1/4W. Carbon		—46075	Instructions
25	—37584	Resistor, 11 Megohms 1/4W. Carbon		—47863	Call Letter Sheet
26	W —22514	Resistor, 750 Ohms 1/2W. Flex.	W	—50551B	Call Letter Cover
27	—21875	Resistor, 100,000 Ohms 1/4W. Carbon	N	—6	No. 6—32 Hex. Nut (4 Req.) (Speaker Mtg.)
28	—37584	Resistor, 11 Megohms 1/4W. Carbon	W	—2118	No. 6 Shakeproof Washer (4 Req.) (Speaker Mtg.)
29	W —21875	Resistor, 100,000 Ohms 1/4W. Carbon		—46194	Push Button (5 Req.)
30	W —30960	Resistor, 2,600 Ohms 1/2W. Flex.		—44490	No. 8—32 x 3/4" W. H. I. M. Screw (4 Req.) (Chassis)
31	—23785	Resistor, 500,000 Ohms 1/2W. Carbon	W	—26372A	Flat Washer (4 Req.) (Chassis)
31Z		Volume Control		—46332	Felt Strip (2 Req.)
31Y	—45996A	Switch "A" Supply Model 548			
31X		Switch "B" Supply	W		
31Z		Volume Control			
31Y	—46057A	Switch "A" Supply Model 5548			
31X		Switch "B" Supply			
32	W —41995A	Resistance Strip, 1.83 Ohms Tap at 1.1 Ohms			
33					
34					
35	G178—36400	8 Prong Sockets (No Marking)			
36					
37					

PARTS LIST—MODEL 558

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G176—32000	Antenna Coil	32	W —41955A	Resistance Strip, 1.83 Ohms Tap at 1.1 Ohms
2	G177—32002	Oscillator Coil			
3	G194—32004	1st I. F. Transformer	33		
4	G195—32004	2nd I. F. Transformer	34		
5	G5 —34002	Condenser, .00005 Mf. Molded	35	G178—36400	8 Prong Tube Sockets (No Marking)
6	W —28621	Condenser, .02 Mf. 200 V. Paper	36		
7	G6 —50640	Condenser Capacity Coupling	37		
8	G3 —50640	Condenser Capacity Coupling		W —40911	Tube Shield
9Z	G52 —33001	2 Sect. Variable Condenser, Antenna Section	38	42PJ4"A"	Speaker, Spec. R-8000-B-1
9Y	G52 —33001	2 Sect. Variable Condenser, Oscillator Section		—41452	Speaker Cone (Without V. C.)
	G1 —46757	Dial Hand Assy.		—41455	Output Transformer
	G12 —43564	Hub and Pulley Assy.	39	—41459	Cardboard Ring
	W —23877	Set Screw for Hub and Pulley Assy. (2 Req.)	40	—41460	Dust Cap
	—46056	Drive Shaft		G1 —26719	Terminal Board, A-G
	W —43542B	Drive Shaft Bracket		G24 —29635	Choke Coil
	W —46087	Drive Cord Spring		G7 —45683	Push Button Unit Assembly
	G2 —41588	Drive Cord (44 Inches)		G23 —45683	Riveted Key Assembly
	—45806	No. 8 x 3/4" P. K. Screw (Drive Shaft Bracket)		G22 —45683	Rocker Plate Assembly
	D —46372B	Dial Glass		G28 —45683	Riveted Mtg. Bracket Assembly
	B —46388A	Dial Support Extension	W	—50542D	Key Clip (5 Req.)
	W —45978	Dial Glass Clip (4 Req.)	W	—45646B	Adjusting Clip (1 Req.)
	W —45742B	Dial Glass Cushion	W	—50547	Key Plate
	B —45743B	Dial Support		—31388	No. 8—32 x 3/4" Washer Hd. Screw (4 Req.)
	—45850	Dial Pointer		—2046	No. 8 Shakeproof Washer (Key Plate Screw)
	—46756	Dial Pointer Extension	W	—50561	Rocker Plate Bearing (2 Req.)
	O —8	Flat Washer		—45717	Clamp Screw (No. 6—32 x 1 1/4")
	G4 —33354	Flex. Socket Assy. (1 Req.)	W	—50588B	Adjusting Clip (4 Req.)
10	G2 —34002	Condenser, .0001 Mf. Molded	W	—50670C	Key Return Spring
11	W —45968	Condenser, 15 Mf. 250 V. Elect.		—8RA	Cabinet
12	W —28621	Condenser, .02 Mf. 200 V. Paper	W	—8S	Cabinet
13	G11 —34002	Condenser, .000175 Mf. Molded		—46378	Escutcheon
14	W —28621	Condenser, .02 Mf. 200 V. Paper		—45972	Knob
15	G2 —34002	Condenser, .0001 Mf. Molded		—46333	Instructions
16	G1 —34002	Condenser, .00025 Mf. Molded		—46194	Push Button
17	W —27216	Condenser, .05 Mf. 200 V. Paper	W	—47863	Call Letter Sheet
18	W —29910A	Condenser, .25 Mf. 200 V. Paper		—50551B	Call Letter Cover
19	W —28904	Condenser, .004 Mf. 200 V. Paper	N	—46103	Grille Cloth
20	C —46014	Battery Cable		—8	No. 8 Hex. Nut (Speaker)
21	—21273	Resistor, 60,000 Ohms 1/4W. Carb.		—2046	No. 8 Shakeproof Washer (Speaker)
22	—33390	Resistor, 30,000 Ohms 1/4W. Carb.	O	—8	No. 8 Flat Washer (Speaker)
23	—26577	Resistor, 3 Megohms 1/4W. Carb.		—29682	No. 8 x 3/4" W. H. Screw (Chassis Fastening)
24	—21875	Resistor, 100,000 Ohms 1/4W. Carb.	W	—45572	Flat Washer (Chassis Fastening)
25	—26577	Resistor, 3 Megohms 1/4W. Carb.	D	—30	No. 2 x 3/4" Oval Ctsk. Screw (Escutcheon)
26	—21875	Resistor, 100,000 Ohms 1/4W. Carb.			
27	W —24537	Resistor, 60 Ohms 1/4W. Flex.			
28	—23785	Resistor, 500,000 Ohms 1/2W. Carb.			
29	—24990	Resistor, 25,000 Ohms 1/2W. Carb.			
30	W —30960	Resistor, 2,600 Ohms 1/2W. Flex.			
31Z		Volume Control			
31Y	—46057	"A" Line Switch			
31X		"B" Line Switch			

VOLTAGE READINGS—WITH CR649 BATTERY PACK

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.5	70	40	Neg.	70	0	0
1N5GT	I-F Amplifier	0	4.5	70	70	1.5	—	3	0
1H5GT	Det, AVC, 1st Audio	0	3.0	11	11	—	0	1.5	6
1A5GT	Output	0	6.0	68	70	—	6	4.5	1.5
117 Z6GT	Rectifier <sup>†</sup>	0	0	0	68	0	0	0	6.0

VOLTAGE READINGS—@ 117.5 VOLT LINE (A.C.)

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.4	102	56	-3	102	0	0
1N5GT	I-F Amplifier	0	4.5	102	102	1.5	—	3.0	0
1H5GT	Det, AVC, 1st Audio	0	3.0	17	17	—	0	1.5	45
1A5GT	Output	0	6.0	98	102	—	28	4.5	1.5
117 Z6GT	Rectifier	58.5 A.C.	117.5 A.C.	117.5 A.C.	142	117.5 A.C.	0	0	126

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

Tuning the I-F Amplifier to 455 Kilocycles

- Connect the output of the signal generator through a .02 mf. condenser to the grid cap of the 1A7GT oscillator-modulator tube leaving th. tubes' grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.
- Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.
- Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

Aligning the R-F Amplifier

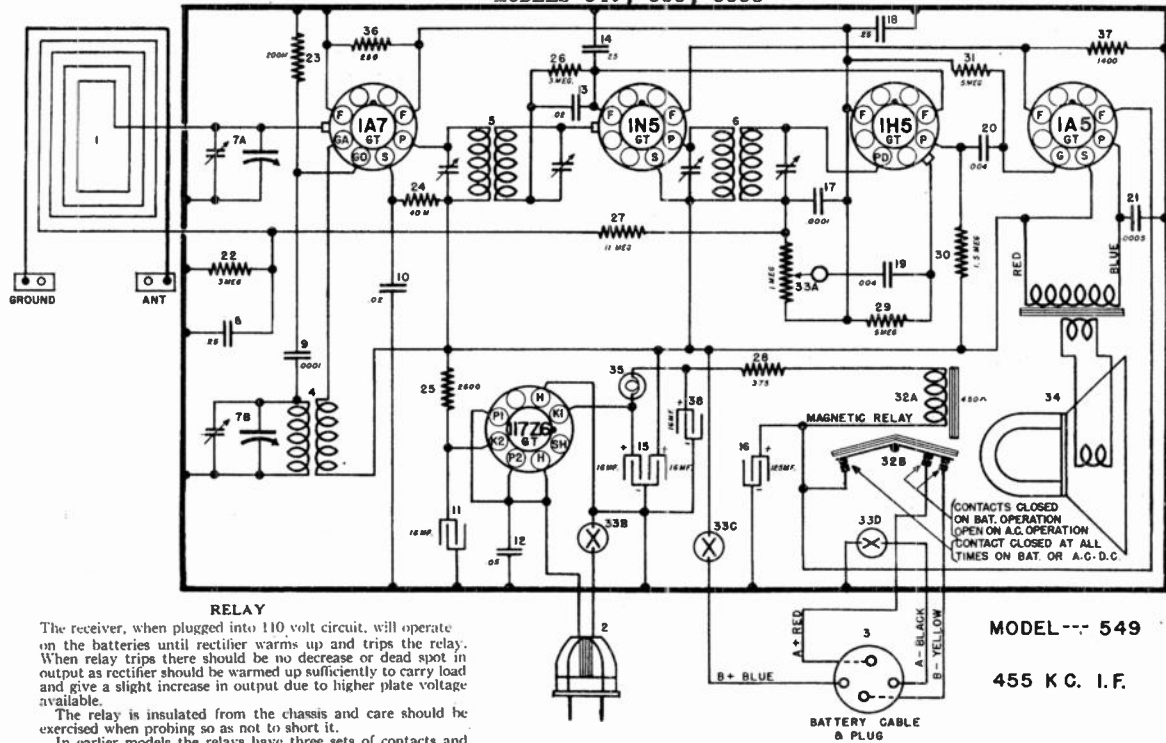
When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mf. condenser to "A" terminal and the ground lead to the "G" terminal on the back of the cabinet.

It is essential that the following alignment be made with the receiver in the cabinet and the battery and back in position. Trimmer adjustments may be made on the two luggage type carrying cases through the two holes in the top, beneath the carrying handle. On the walnut cabinet model the oscillator will have to be aligned before placing chassis in the cabinet and then adjust the antenna trimmer provided on the back.

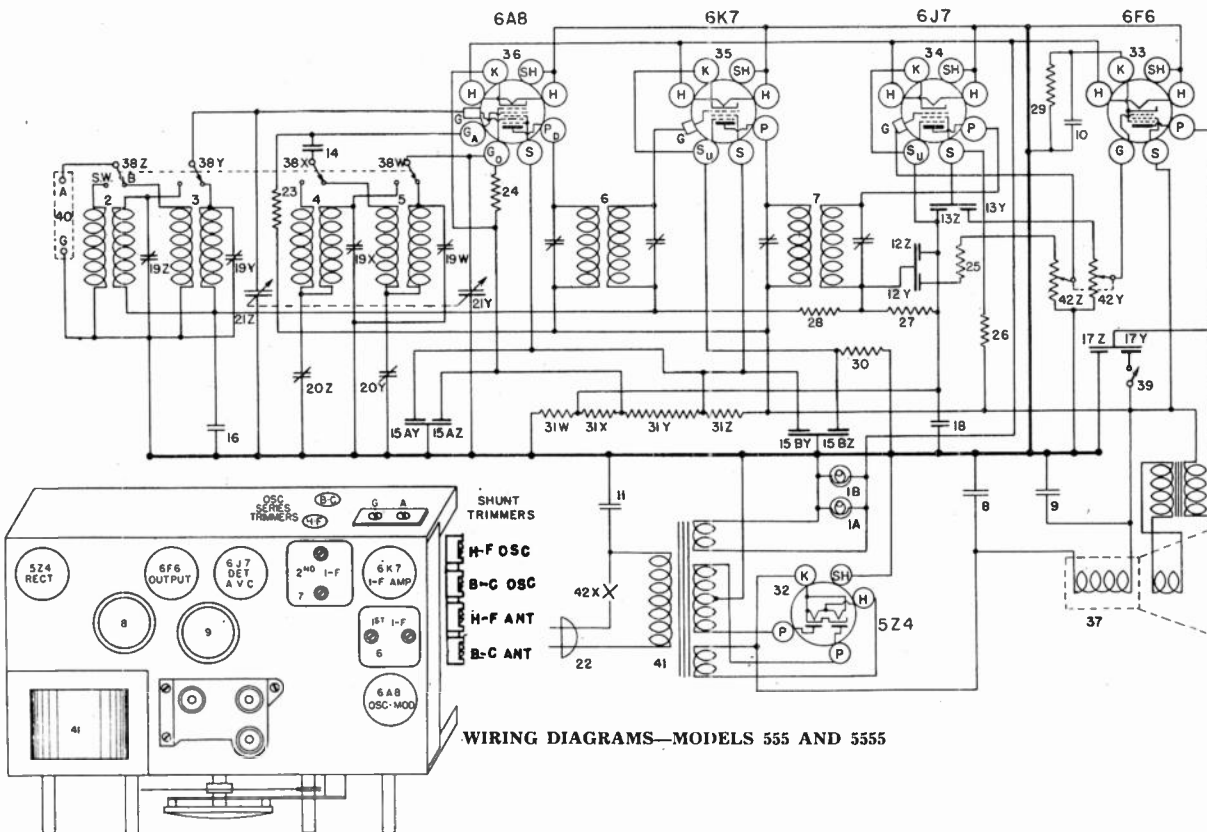
Before aligning receiver check the position of the pointer by opening gang all the way, the pointer should then split the 1600 kilocycle calibration point.

- Set signal generator to 1400 kilocycles.
- Tune gang to 140 on the dial, then adjust oscillator trimmer (rear section of gang) for maximum output.
- Adjust antenna trimmer (front section of gang) for maximum output.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B —48732A	Loop Antenna	33A		Volume Control, 1 Megohm
2	B —48698	A. C.-D. C. Power Cord and Plug	33B		A. C.-D. C. Switch
3	B —48699	Battery Cable	33C		B+ Battery Switch
4	G209—32002	Oscillator Coil	33D		Relay—Ground
5	G194—32004	1st I-F. Transformer Assembly		W —46662	Pal Nut
6	G195—32004	2nd I-F. Transformer Assembly	34	392-PL-6-"	Speaker, Spec.
7A	G84 —33001	2 Section Var. Cond. { Antenna Section	35	W —47977	Dial Light Bulb, 110 Volt
7B		{ Oscillator Section		LW —49514	Dial Light Socket Assembly
	D —48431A	Dial Face	36		Resistor, 250 Ohms ½ Watt Ins.
	O —6415	No. 8—32 x ¼" W. Hd. Screw (Dial Face)	37	W —27503	Resistor, 1,400 Ohms ¼ Watt Flex.
	W —13549	Flat Washer (Dial Face)	38	W —45783	Condenser, 16 Mf. 125 Volts Elect.
	W —48695	Retaining Ring (Drive Shaft)			Cabinet
	W —44808B	Drive Shaft			Cabinet
	W —6876	Drive Shaft Bracket			Cabinet
	G19	Screw (Drive Shaft Bracket) (2 Req.)	B	—48605	Speaker Screen (9EEA and 9EDB)
	W —41582	Drive Cord, 17"			Speaker Screen
	W —44989	Drive Cord Spring	W	—48691	Dial Lens
	W —46920	Drive Cord Clamp			Knob
	U —49113	Dial Pointer			Knob
	W —49111	No. 6—32 x ¼" Gulmit Screw (Dial Pointer)	B	—48719A	Loop Antenna
	W —20800	Shakeproof Washer (Dial Pointer)	C	—48732A	Chassis Shield
8	W —51108A	8 Prong Socket (No Marking)	W	—49139	Relay Insulator
9	W —34712	Condenser, 25 Mf. 160 Volts Paper	W	—41142	Trimmer Condenser (9EAB)
10	G2 —34002	Condenser, .001 Mf. Molded	W	—4318B	Spacer (2 Req.) (9EAB)
11	W —28621	Condenser, .02 Mf. 200 Volts Paper	R	—135	No. 6—32 x ¼" Rd. Hd. Mach. Screw (2 Req.) (9EAB)
12	W —46128	Condenser, .16 Mf. 250 Volts Elect.	W	—45513	No. 6—32 Pal Nut (2 Req.) (9EAB)
13	W —23615	Condenser, .05 Mf. 400 Volts Paper	B	—49453	Loop Cover (9EDB)
14	W —28621	Condenser, .02 Mf. 200 Volts Paper			Instructions
15	W —34712	Condenser, 25 Mf. 160 Volts Paper			Carton (9EEA)
16	W —46398	Condenser, 16 Mf. 125 Volts Elect.			Carton (9EAB)
17	W —48562	Condenser, 16 Mf. 125 Volts Elect.			Carton (9EDB)
18	G2 —34002	Condenser, .001 Mf. Molded			No. 8 x ¾" H. H. P. K. Screw (Chassis Mtg.) (9EEA and 9EDB)
19	W —34712	Condenser, 25 Mf. 160 Volts Elect.			No. 8 x 1" H. H. P. K. Screw (Chassis Mtg.) (9EAB)
20	W —28904	Condenser, .004 Mf. 200 Volts Paper			Flat Washer (Chassis Mtg.) (3 Req.)
21	W —28904	Condenser, .004 Mf. 200 Volts Paper	W	—30409	Hole Plug (2 Req.) (9EEA and 9EDB)
22	G3 —34002	Condenser, .005 Mf. Molded	W	—32947	Cork (3 Req.) (9EEA and 9EDB)
23	W —36688	Resistor, 3 Megohms ¼ Watt Ins.	W	—49160	No. 6 x ¼" Rd. Hd. Wood Screw (2 Req.) (9EEA)
24	W —35930	Resistor, 200,000 Ohms ¼ Watt Ins.	W	—23840	Battery Mtg. Strap (9EDB)
25	W —36761	Resistor, 40,000 Ohms ¼ Watt Ins.			No. 6 x ¼" Rd. Hd. Wood Screw (2 Req.) (9EDB)
26	W —30960	Resistor, 2,600 Ohms 1½ Watt Flex.	W	—44482	No. 4 x ¾" Rd. Hd. Wood Screw (Loop Cover)
27	W —36688	Resistor, 3 Megohms ¼ Watt Ins.			CR-649 Battery Pack and Carton
28	W —48693	Resistor, 11 Megohms ¼ Watt Ins.	S	—20881	
29	W —21965	Resistor, 375 Ohms 1 Watt Flex.	W	—80	
30	W —47131	Resistor, 5 Megohms ¼ Watt Ins.			
31	W —48692	Resistor, 1½ Megohms ¼ Watt Ins.			
32A	W —47131	Resistor, 5 Megohms ¼ Watt Ins.			
32B	MC26—48390	Relay Coil			
		Relay Switch			



WIRING DIAGRAM—MODEL 549



TUBE SOCKET VOLTAGE READINGS									
Type	Where Used	H	P	S	Su	G	K	Ga	Go
6A8	Osc.-Mod.	6.7	295	135	—	0	7.5	155	-10 to -20
6K7	I-F Amplifier	6.7	295	135	10	0	10	—	—
6J7	Det. & A-F Amp.	6.7	1.0	65	4	0	4	—	—
6F6	Output	6.7	295	295	—	0	20	—	—
5Z4	Rectifier	5.0	—	—	—	—	390	—	—

Power Output Approximately 3 Watts. Power Consumption Approximately 85 Watts at 117.5 Volts.

### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

### 2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. \*For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm carbon resistor (\* Non Inductive).

Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned, and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" parallel trimmers (shunt alignment) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the the adjustment of the "ANT" trimmer.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description				
1A	G6 —27134	Dial Light Assm.	22	—37354	Dial Face only				
1B	G6 —27134	Dial Light Assm.	23	B —33906A	A. C. Cord & Plug				
2	G82 —32000	Ant. Coil, S. W. B.	24	—5370A	Resistor, 20,000 Ohm				
3	G81 —32000	Ant. Coil, B. C. B.	25	—21237	Resistor, 60,000 Ohm				
4	G65 —32002	Osc. Coil, S. W. B.	26	—21875	Resistor, 100,000 Ohm				
5	G66 —32002	Osc. Coil, B. C. B.	27	—21455	Resistor, 300,000 Ohm				
6	G71 —32004	1st I. F. Assm.	28	—33344	Resistor, 400,000 Ohm				
7	G72 —32004	2nd I. F. Assm.	29	—37245	Resistor, 1.5 Megohm				
8	W —36055	Condenser, 35. Mfd. 400 Volt	30	W —25291	Resistor, 500 Ohm 1 1/2 W. (Flex)				
9	W —36057	Condenser, 40. Mfd. 300 V.	31Z	W —28106	Resistor, 500 Ohm 1/2 W. (Flex)				
10	W —36931	Condenser, 12 Mfd. 25 V.	31Y	W —37246A	Resistor, 10,000 Ohm Candohm				
11	W —30805	Condenser, 0.01 Mfd. 400 V.	31X		Resistor, 25,000 Ohm Candohm				
12Z	W —30322A	Condenser, 0.00017 Mfd. 200 V.	31W		Resistor, 185. Ohm Candohm				
12Y		Condenser, 0.006 Mfd. 200 V.	32	G154—36400	Socket, 5Z4				
13Z	W —25537A	Condenser, 0.001 Mfd. 400 V.	33	G153—36400	Socket, 6F6				
13Y		Condenser, 0.03 Mfd. 400 V.	34	G157—36400	Socket, 6J7				
14	W —23191A	Condenser, 0.01 Mfd. 400 V.	35	G151—36400	Socket, 6K7				
15AZ	W —28623	Condenser, 0.02 Mfd. 200 V.	36	G156—36400	Socket, 6A8				
15AY		Condenser, 0.02 Mfd. 200 V.	37	331—CL—9	Speaker, (555)				
15BZ	W —28623	Condenser, 0.02 Mfd. 200 V.	38W	432—CJ—3M	Speaker, (5555) Console				
15BY		Condenser, 0.02 Mfd. 200 V.		G3 —35696	Speaker Cable (5555)				
16	W —27216	Condenser, 0.05 Mfd. 200 V.	To } —37247	38Z	Band Change Switch				
17Z	W —35011	Condenser, 0.006 Mfd. 400 V.							
17Y		W —36541	Condenser, 0.03 Mfd. 400 V.	39	W —36184A	Tone Control Switch			
18	W —36541		Condenser, 0.02 Mfd. 160 V.	40	G1 —26719	Ant. & Grd. Terminal			
19Z		W —37241A	4 Section Trimmer Cond.	41	G12 —28500	Power Trans. 60 Cy. 110 V.			
19Y	G29 —33006			S. W. Osc. Series Padder	42Z	G13 —28500	Power Trans. 25 Cy. 110 V.		
19W					G17 —33001	B. C. Osc. Series Padder	42Y	G14 —28500	Power Trans. 25 Cy. 220 V.
20Z	—37353C			Var. Tuning Cond. Gang			42X	—37395	Volume Control A. F. Grid
20Y					Dial Assm. Complete	On-Off Switch			
21Z		Dial Glass	Escutcheon						
21Y									
	Pointer Screw			Knob, V. C. & Dial					
					W —31585B	Knob, T. C. & Band Change			
		W —36355							

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	65	-2.5	—	—
1A6	Osc.-Modulator	2.0	135	65	-2.5	85	-5 to -20
34	I-F Amplifier	2.0	135	65	-2.5	—	—
1B5	Diode Detector and A-F Amplifier	2.0	60	—	—	—	—
33	Output	2.0	135	135	-1.0	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Turn the band selector switch to the right (Broadcast Band).

(d) Adjust the station selector to 140 on the dial.

(e) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(f) Adjust the trimmer located on the "R-F" section of the condenser gang for maximum output.

(g) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(h) Tune the station selector to the generator signal for maximum output.

(i) Repeat operations (f) and (g) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	W —37188	Dial Light	22	NONE	
1B	W —37188	Dial Light	23	—22196	Resistor 20000 Ohm 1/4 W.
	G6 —27134	Dial Light Socket Assembly	24	—37377	Resistor 20000 Ohm 1W.
2	G76 —32000	Ant. Coil	25	—34019	Resistor 75000 Ohm 1/4 W.
3	G73 —32004	1st I-F Assembly	26A	—35601	Resistor 300000 Ohm 1/4 W.
4	G38 —32004	2nd I-F Assembly	26B	—35601	Resistor 300000 Ohm 1/4 W.
5	G47 —32002	Osc. Coil	26C	—35601	Resistor 300000 Ohm 1/4 W.
6	G53 —32001	R-F Coil	27	—21454	Resistor 1 Megohm 1/4 W.
7	G9 —34002	Condenser .00002 Mfd. (Molded)	28	—35602	Resistor 1 Megohm 1/4 W.
8	G2 —34002	Condenser .0001 Mfd. (Molded)	29	—26577	Resistor 3 Megohm 1/4 W.
9A	G1 —34002	Condenser .00025 Mfd. (Molded)	30	—36318	Resistor 15000 Ohm 1/4 W.
9B	G1 —34002	Condenser .00025 Mfd. (Molded)	31A	G31 —28807	Socket Type—34
10	W —28619	Condenser .006 Mfd. 200 V.	31B	G31 —28807	Socket Type—34
11	W —28621	Condenser .02 Mfd. 200 V.	32	G55 —28807	Socket Type—1A6
12Z	W —28623	Condenser .02 Mfd. 200 V.	33	G41 —28807	Socket Type—1B5
12Y	W —28623	Condenser .02 Mfd. 200 V.	34	G36 —28807	Socket Type—33
13	W —32378	Condenser .01 Mfd. 400 V.	W	—26973B	Tube Shield Base
14A	W —24049B	Condenser .1 Mfd. 200 V.	W	—26974B	Tube Shield
14B	W —24049B	Condenser .1 Mfd. 200 V.	35	31PJ3"A"	Speaker (Table) R-6000 C-8 & D-2
15A	W —29910A	Condenser .25 Mfd. 200 V.		—41434	Cone Assembly
15B	W —29910A	Condenser .25 Mfd. 200 V.		—41453	Output Trans.
15C	W —29910A	Condenser .25 Mfd. 200 V.		—41458	Cone Mtg. Ring
16	G43 —33002	3 Section Var. Tuning Condenser		41PJ3"A"	Speaker (Console) R-8000 B-2
	C —41059	Dial Glass		—41452	Cone Assembly
	W —42629	Pointer		—41457	Output Trans.
	B —42374	Dial Mask		—41459	Cone Mtg. Ring
	W —40794	Bearing Bracket	36	W —41068	Dial Light Switch
	W —31840A	Snap Ring	37	G1 —26719	Ant. & Grd. Terminal Assembly
	W —40909	Spring Washer	38Z		Volume Control (100000 Ohm)
	W —40795A	Hand Shaft	38Y		Battery Switch
	W —40797	Dial Glass Bracket (2)	39		Band Selector Switch
	W —40798	Support Bracket L-H.	40	W —35758	Condenser .008 Mfd. 400 V.
	W —40799	Support Bracket R-H.		G95 —28807	Socket—Ballast Tube
	W —41578	Gear Spring		W —43251	Ballast Tube
	W —41739	Drive Unit		B —40839A	Escutcheon Ring
17	C —37396	Battery Cable		W —28760B	Escutcheon Pin
	B —41971	(Sets with no Ballast Tube Provision)		W —31585C	Knob (Large)
	C —41972	Battery Cable (for "B-C" Packs)		W —36355A	Knob (Small)
		Harness (for adapting B-41971 to Individual "B & C")		W —25025B	Osc. Coil Shield
	C —43461	Battery Cable		W —21541	Retaining Ring
		(Sets with Ballast Tube Provisions)		W —25200	Coil Socket
18	G6 —35696	Speaker Cable		W —26891	Insulating Washer
19	G2 —23300	Resistor .53 Ohm (Air Cell)		W —30802A	R-F & Ant. Coil Shield
20	W —36760	Resistor 20000 Ohm 1/4 W.		W —30026A	Retaining Ring
21	—27121	Resistor 5000 Ohm 1/4 W.		W —37164	Insulating Washer

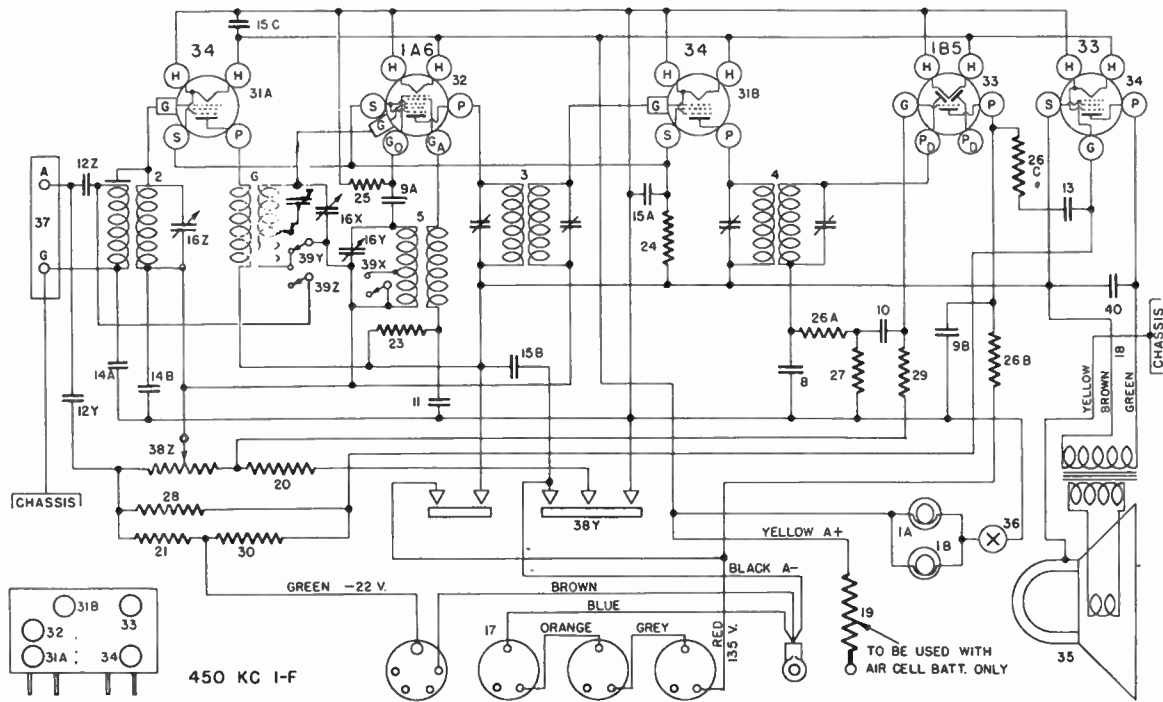


FIG. 1—WIRING DIAGRAM—MODEL 556

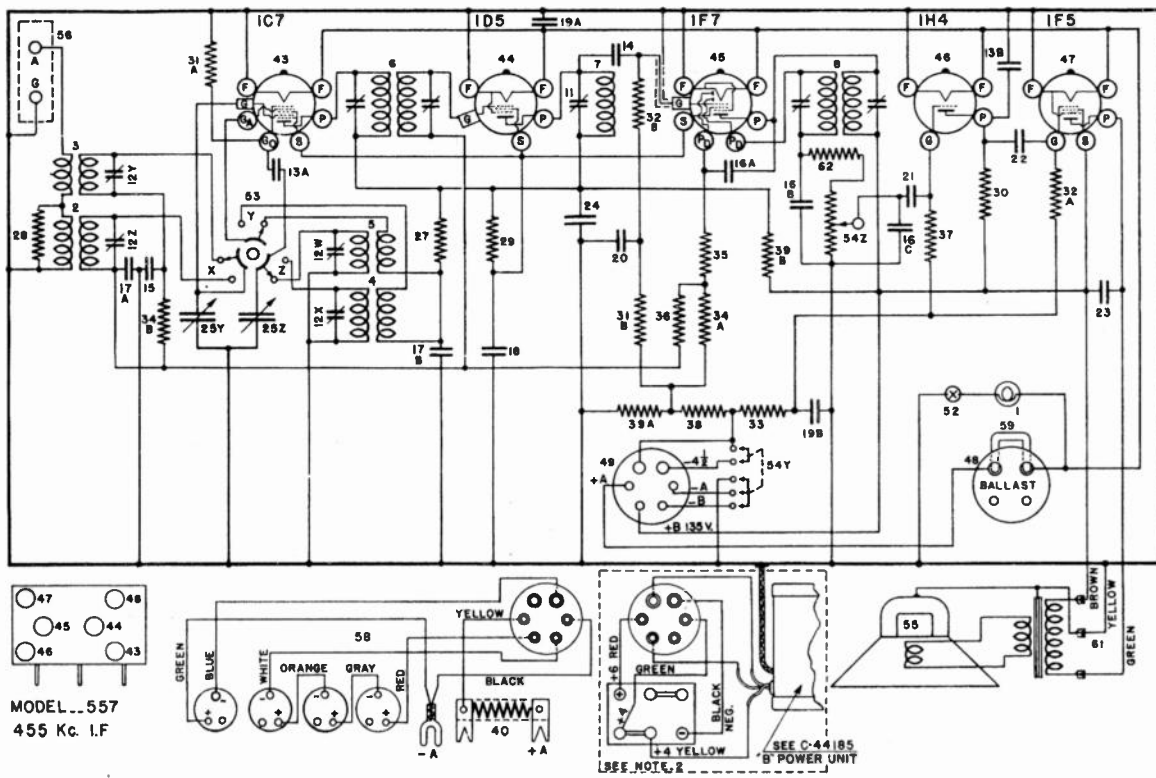


FIG. 1—WIRING DIAGRAM—MODEL 557

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Go	Ga
1C7G	Oscillator-Modulator	2.0	120	54	Neg	84
1D5G	1st I-F Amplifier	2.0	120	54	—	—
1F7G	2nd I-F Amplifier, AVC and Detector	2.0	135	54	—	—
1H4G	1st A-F Amplifier	2.0	72	—	—	—
1F5G	Output	2.0	130	135	—	—

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 1C7G oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground (G) terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 3rd I-F assembly for maximum output. (See Fig. 2 item 8).

(f) Adjust the 2nd I-F trimmer condenser, Fig. 2 item 11, for maximum output.

(g) Adjust both trimmers located on top of the 1st I-F assembly, item 6, for maximum output.

(h) Check operations (e), (f) and (g) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**Aligning The R-F Amplifier.**

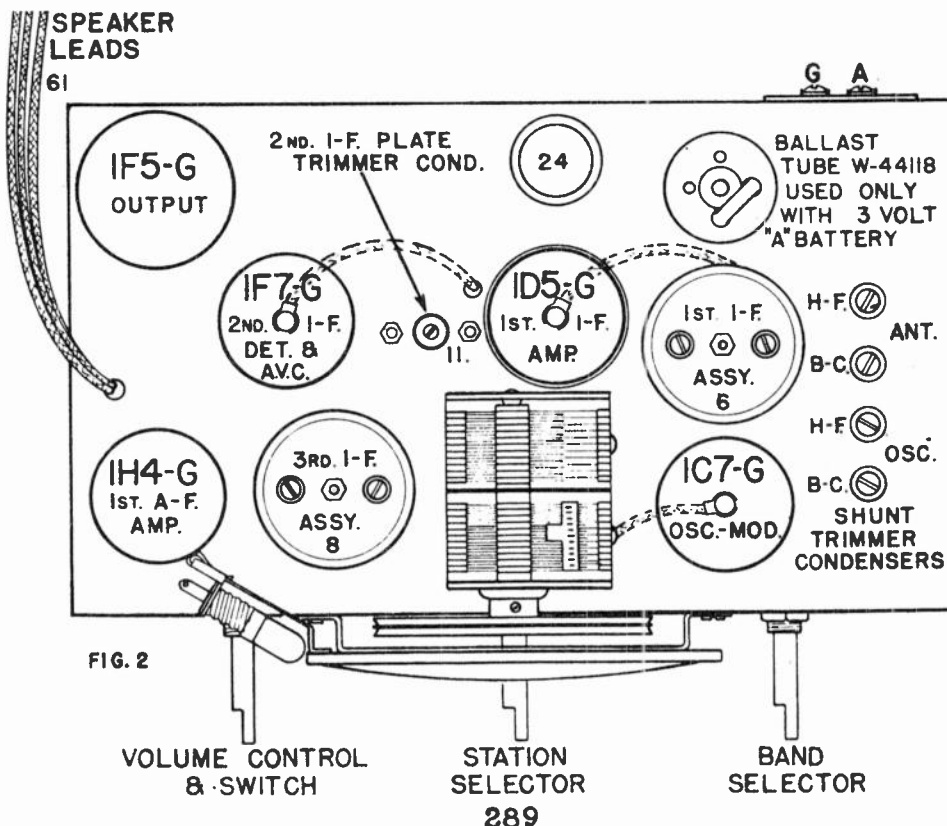
When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A)

terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** (c) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**NOTE:** When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.





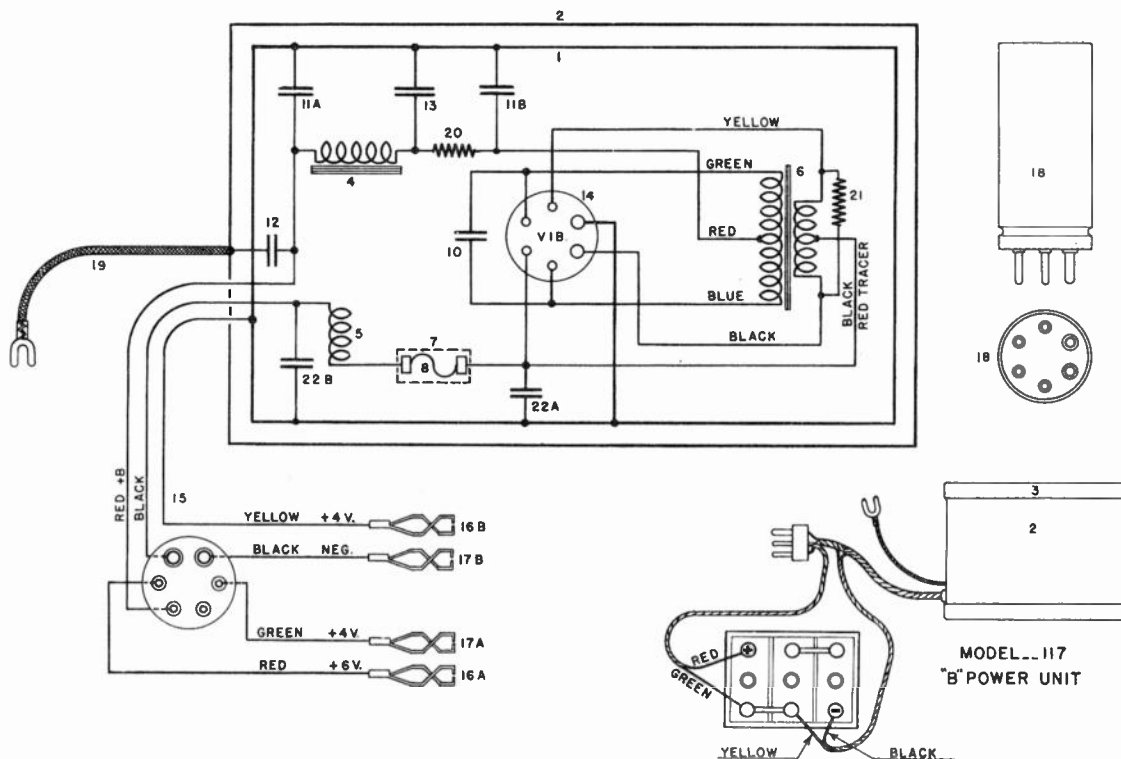


Fig. 5 Wiring Diagram—Model 117  
POWER SUPPLY FOR MODEL 557

PARTS LIST—MODEL 557

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	W -37188	Dial Light Bulb, 2 V., .06 Amp.	52	MG12-44140	Dial Light Switch and Brkt. Assy.	
2	G6 -27134	Light Brkt. Assy.	53	W -4348A	Band Selector Switch	
3	G132-32000	Ant. Coil, B. C.	54Z	-43854A	Volume Control (1 Meg.)	
4	G132-32002	Osc. Coil, H. F.	54Y	-	Batt. Switch	
5	G133-32002	Osc. Coil, H. F.	55	31PJ3 "A"	Speaker, Spec. No. R-6000, C8 and D2, 6"	
6	G151-32004	1st I-F Assy., 455 Kc.		-41434	V. C. and Cone Assy. for 31PJ3 "A" Spkr.	
7	G150-32004	2nd I-F Plate Coil Assy., 455 Kc.		-41453	Output Trans. for 31PJ3 "A" Spkr.	
8	G160-32004	3rd I-F Assy., 455 Kc.		-41458	Cone Mounting Ring for 31PJ3 "A" Spkr.	
9		NONE		41PJ3 "A"	Speaker, Spec. No. R-8000, B2, 8"	
10		NONE		-41452	V. C. and Cone Assy. for 41PJ3 "A" Spkr.	
11	W -4142A	2nd I-F Trimmer Condenser		-41459	Cone Mounting Ring for 41PJ3 "A" Spkr.	
12	W -41247A	4 Section Trimmer Condenser		-41457	Output Trans. for 41PJ3 "A" Spkr.	
13AB	G1 -34002	Condenser, .00025 Mf. Molded		G1 -29719	Ant. and Gnd. Terminal Assy.	
14	G3 -34002	Condenser, .0005 Mf. Molded			NONE	
15	G12 -34002	Condenser, .0005 Mf. Molded		C -44149A	Battery Cable <sup>3</sup>	
16ABC	G2 -34002	Condenser, .0001 Mf. Molded		W -41968B	Ballast Sock. Jumper Wire]	
17AB	W -36511	Condenser, .02 Mf. 160 V.		W -44118	Ballast Tube	
18	W -29910A	Condenser, .25 Mf. 200 V.		W -44118	Ballast Tube	
19AB	W -37732	Condenser, .3 Mf. 160 V.		W -44851	Speaker Cable	
20	W -24049C	Condenser, .1 Mf. 200 V.		61	Resistor, 200,000 Ohm 1/2 W.	
21	W -28621	Condenser, .02 Mf. 200 V.		62	Condenser, 15 Mf. 250 V.	
22	W -27216	Condenser, .05 Mf. 300 V.		G37	2 Section Var. Tun. Cond.	
23	W -25435	Condenser, .005 Mf. 400 V.		W -44141B	Glass Dial Face	
24	W -44012	Condenser, 15 Mf. 250 V.		W -44285	Dial Mask (Paper)	
25	G37 -33001	2 Section Var. Tun. Cond.		W -44267	Dial Mask (Metal Disc)	
	W -44141A	2 Section Var. Tun. Cond.		W -44001A	Dial Support Ring	
	W -44150A	Dial Support Bracket		W -44150A	Dial Support Bracket	
	W -43550	Dial Pointer		W -43564	Dial Pointer	
	G1 -43564	Pulley Assy.		W -44130	Drive Shaft	
	W -44130	Drive Shaft		W -43561	Cable Tension Spring	
	W -43561	Cable Tension Spring		W -41582	Drive Cable - 17 1/2 Inches	
	W -41582	Drive Cable - 17 1/2 Inches		W -40486	Pointer Mounting Screw	
	W -40486	Pointer Mounting Screw			NONE	
26		NONE			NONE	
27	-36317	Resistor, 10,000 Ohm 1/2 W.		1	C -44133	Chassis Pan
28	-36780	Resistor, 20,000 Ohm 1/2 W.		2	C -44138	Case Body
29	-33390	Resistor, 30,000 Ohm 1/2 W.		3	W -44132A	Cover
30	-36761	Resistor, 40,000 Ohm 1/2 W.		4	G76 -24628	"B" Filter Choke
31A1	-35928	Resistor, 60,000 Ohm 1/2 W.		5	G23 -28067	"A" Filter Choke
32AB	-36319	Resistor, 75,000 Ohm 1/2 W.		6	G16 -32769	Power Transformer
33	-35600	Resistor, 100,000 Ohm 1/2 W.		7	G4 -33339	Fuse Panel Assy.
34AB	-35601	Resistor, 300,000 Ohm 1/2 W.		8	W -37624	Fuse (4 Amp.)
35	-36322	Resistor, 500,000 Ohm 1/2 W.		9		NONE
36	-35929	Resistor, 1 Megohm 1/2 W.		10	W -31632A	Condenser, .01 Mf. 1,000 V.
37	-35927	Resistor, 2 Megohm 1/2 W.		11AB	W -35936	Condenser, .05 Mf. 200 V.
38	W -27503	Resistor, 1,400 Ohm 3/4 W. Flex.		12	W -44131B	Condenser, 20 Mf. 150 V.
39AB	W -23013	Resistor, 2,000 Ohm 1 1/4 W. Flex.		13	W -44217	Condenser, 16 Mf. 300 V.
40	G7 -23300	Resistor, .70 Ohm (Air Cell Series)		14	G92 -28807	Socket for Vibrator
41	G1 -43900	Socket, Type 1C7		15	C -44139	Cable and Plug
42	G2 -43900	Socket, Type 1D5		16AB	W -34903	Batt. Clip—Pos.
43	G7 -43900	Socket, Type 1F7		17AB	W -34904	Batt. Clip—Neg.
44	G4 -43900	Socket, Type 1H4		18	W -44145	Vibrator—4 Volt
45	G6 -43900	Socket, Type 1F5			Gnd. Clip—Vibrator	
46	G95 -28807	Socket Ballast		19	G122-34403	Bonded Lead
47	W -40911	Tube Shield		W -3328	Grommet	
48	W -28807	Socket Ballast		20	-38915	Resistor, 100 Ohm 1/2 W.
49	W -28807	Socket (Power Cable)		21	-38977	Resistor, 220 Ohm 1/2 W.
50		NONE		22AB	W -50161	Condenser, .5 Mf. 120 V.
51		NONE		W -44186	Cushion Strap	
		NONE		W -44264	End Plate 1 1/2" x 3/8" (2)	

Parts List For 117 Converter

1	C -44133	Chassis Pan
2	C -44138	Case Body
3	W -44132A	Cover
4	G76 -24628	"B" Filter Choke
5	G23 -28067	"A" Filter Choke
6	G16 -32769	Power Transformer
7	G4 -33339	Fuse Panel Assy.
8	W -37624	Fuse (4 Amp.)
9		NONE
10	W -31632A	Condenser, .01 Mf. 1,000 V.
11AB	W -35936	Condenser, .05 Mf. 200 V.
12	W -44131B	Condenser, 20 Mf. 150 V.
13	W -44217	Condenser, 16 Mf. 300 V.
14	G92 -28807	Socket for Vibrator
15	C -44139	Cable and Plug
16AB	W -34903	Batt. Clip—Pos.
17AB	W -34904	Batt. Clip—Neg.
18	W -44145	Vibrator—4 Volt
	W -44146	Gnd. Clip—Vibrator
19	G122-34403	Bonded Lead
W -3328	Grommet	
20	-38915	Resistor, 100 Ohm 1/2 W.
21	-38977	Resistor, 220 Ohm 1/2 W.
22AB	W -50161	Condenser, .5 Mf. 120 V.
W -44186	Cushion Strap	
W -44264	End Plate 1 1/2" x 3/8" (2)	

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
1C6	(*) Oscillator-Modulator	2.0	112	45	0	112	-5 to -20
34	I-F Amplifier	2.0	112	45	0	—	—
1B5	Detector & A-F Amplifier	2.0	60	—	0	—	—
30	2nd. A-F Amplifier	2.0	45	—	0	—	—
950	Output	2.0	110	112	-4 (C)	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 950 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1C6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(1) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

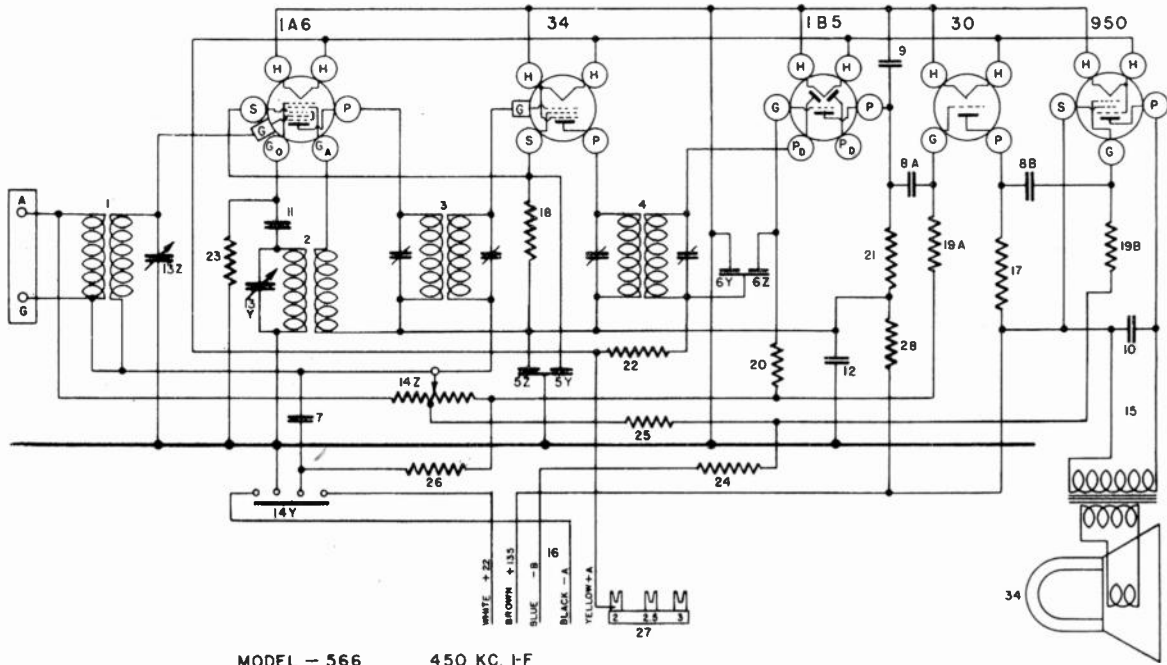
(e) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(f) Tune the station selector to the generator signal for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Function	Item No.	Part No.	Function
1	G116—32000	Coil Ant. Transformer 540-1725Kc.	21	—23403	Resistor 150,000 Ohm. ¼W. 1st A-F Plate Load
2	G105—32002	Coil Osc. Transformer 540-1725Kc.	22	—35602	Resistor 1Megohm Ins. ¼W. Diode Load
3	G117—32004	Coil Assy. 1st I-F Transformer 450Kc.	23	—21875	Resistor 100,000 Ohm. ¼W. Osc. Grid Return
4	G115—32004	Coil Assy. 2nd I-F Transformer 450Kc.	24	W —29585	Resistor 600 Ohm. Flex. ½W. 1st Bias Divider
5Z	W —28623	Cond. .02MF. 200V. Plate Supply Bypass	25	W —35467	Resistor 220 Ohm. Flex. ½W. 2nd Bias Divider
5Y	W —30322A	Cond. .02MF. 200V. Scr. Supply Bypass	26	W —41759	Resistor 140 Ohm. Flex. ½W. Audio Bias Divider
6Z		Cond. .006 MF. Det.-1st A-F Coupler	27	W —41955A	Resistor on "A" Bat. Lead Used with 1C6 Tube
6Y		Cond. .00017 MF. Diode Load Bypass	(27)	W —41955	Resistor on "A" Bat. Lead Used with 1A6 Tube
7	W —37226	Cond. .02 MF. 160V. R-F&I-F Bias Filter	28	W —30960	Resistor 2600 Ohm. Flex. 1½W. Plate Supply Filter
8A	W —36541	Cond. .02 MF. 160 V. 1st & 2nd A-FCoup.	29	G89 —28807	Socket 1C6 Osc.-Mod.
8B	W —36541	Cond. .02 MF. 160V. 2nd & Output A-F Coupler	(29)	G55 —28807	Socket 1A6
9	W —30270	Cond. .001 MF. 400V. 1st A-F Plate Bypass	30	G31 —28807	Socket 34 I-F.
10	W —28904	Cond. .004 MF. 200V. Output Plate Bypass	31	G91 —28807	Socket 1B5 Det. 1st A-F
11	G2 —34002	Cond. .0001 MF. Molded Osc. Grid Coupler	32	G9 —28807	Socket 30 2nd A-F
12	W —41081	Cond. 16 MF. 250V. Plate supply Filter (Electrolytic)	33	G94 —28807	Socket 950 Output
13Z	G24 —33001	Cond. Var. Tuning Antenna Section	34	—41055	Speaker Type 31PJ3, "A"
13Y			—41792	Volume Control 3410 Ohm, Tapped	—41434
14Z	MG11—41760	4 Contact Switch Battery A & B Supply	35	G1 —26719	Output Trans. for 41056 speaker
14Y			—41792	Cable Speaker	W —41790
15	B —41748	Cable 5 Lead Battery	W —41789	Terminal Strip Ant. & Grd. Tube Shield (Plain Half)	
17	—21237	Resistor 60,000 Ohm. ¼W. 2nd A-F Plate Load	W —41789	Tube Shield (Half with Slot)	
18	—37472	Resistor 50,000 Ohm. ¼W. Screen Supply Filter	W —41784	Tube Shield Ring	
19A	—23785	Resistor 500,000 Ohm. ¼W. 2nd A-F Grid Return	W —41785	Tube Shield Base	
19B	—23785	Resistor 500,000 Ohm. ¼W. Output Grid Return	W —42247	Metal Pointer for Dial	
20	—37583	Resistor 2.5 Megohm ¼W. 1st A-F Grid Return	W —42258	Escutcheon Pins	
			W —41822	Dial & Drive Assembly	
			G1 —23472	Knob Control	



MODEL - 566 450 KC. I-F

FIG. 1—WIRING DIAGRAM—MODEL 566

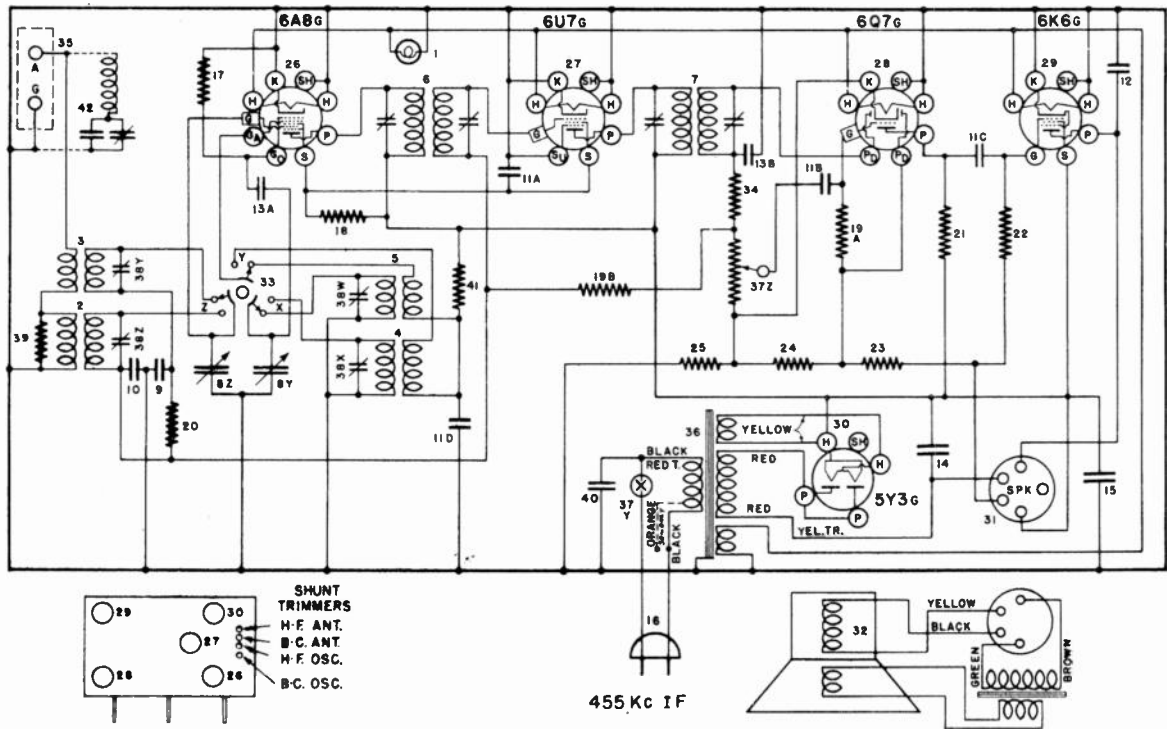


FIG. 1—WIRING DIAGRAM—MODEL 567

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna

(A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

With 455 kc. input, adjust wave trap for minimum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light, 6-8 V.	27	G171—36400	Socket, Type 6U7
	G2 —44252	Socket Assy. Dial Light	28	G160—36400	Socket, Type 6Q7
2	G132—32000	Ant. Coil, B. C.	29	G172—36400	Socket, Type 6K6
3	G133—32000	Ant. Coil, H-F.	30	G173—36400	Socket, Type 5Y3
4	G132—32002	Osc. Coil, B. C.	31	G103—28807	Socket Speaker
5	G133—32002	Osc. Coil, H-F.		W —40911	Tube Shield
6	G138—32004	1st I-F Assy.	32	257BP11"U"	Speaker, Spec. 5-B-5
7	G139—32004	2nd I-F Assy.		—44537	V. C. and Cone Assy.—257BP11"U"
	W —36139A	Dual I-F Trimmer		—44538	Output Trans.—257BP11"U"
8	G37 —33001	2 Section Gang Cond.		257BP11"B"	Speaker, Spec. 51-A-5
	B —44286C	Dial Face (Glass)		—42927	V. C. and Cone Assy.—257BP11"B"
	B —44267	Dial Mask (Metal)		—41473	Output Trans.—257BP11"B"
	W —44285	Dial Mask (Paper)		—44681	Speaker Plug
	B —43544D	Support—Dial Glass	33	W —43448A	Band Switch
	W —43550A	Pointer	34	—35600	Resistor, 100,000 Ohm 1/4W.
	W —40486	Screw—Pointer Mtg.	35	G1 —26719	Ant. and Gnd. Terminal Assy.
	W —44403	Ring—Dial Glass Support	36	—43479	Power Trans., 110 V. 60 Cy.
	G1 —43564	Pulley and Hub Assy.		—43569A	Power Trans., 110 V. 50 Cy.
	W —43542B	Bracket—Drive Shaft		—43570A	Power Trans., 220 V. 50 Cy.
	W —44134	Drive Shaft		—43480A	Power Trans., 110 V. 25 Cy.
	W —43549	Retaining Spring (Shaft)		—43481A	Power Trans., 220 V. 25 Cy.
	—41582	Drive Cord	37	—43449A	Vol. Cont. (1 Meg.) and Switch
	W —43561	Spring—Cord Tension	38	W —41247A	4 Section Shunt Trimmer Assy.
9	G12 —34002	Condenser, 500 Mmf. Molded	39	—22196	Resistor, 20,000 Ohm 1/4W.
10	W —36541	Condenser, .02 Mf. 160 V.	40	W —30805	Condenser, .01 Mf. 400 V.
11A	W —28621	Condenser, .02 Mf. 200 V.	41	—30137	Resistor, 3,500 Ohm 1/4W.
11B	W —28621	Condenser, .02 Mf. 200 V.		—7BB	Cabinet (Black Body)
11C	W —28621	Condenser, .02 Mf. 200 V.		—7BC	Cabinet (Brown Body)
11D	W —28621	Condenser, .02 Mf. 200 V.		—7BD	Cabinet (Wood Grain Body)
12	W —34647	Condenser, .006 Mf. 400 V.		—44106B	Cover (Used on 7BC and 7BD) Black
13A	G1 —34002	Condenser, 250 Mmf. Molded		W—44044A-FS1	Foot—Black
13B	G1 —34002	Condenser, 250 Mmf. Molded		—44045C	Cover (Used on 7BB) Red
14	W —44012	Condenser, 16 Mf. 250 V.		W—44044A-FS46	Foot—Red
15	W —44013	Condenser, 16 Mf. 200 V.		—44552	Knob (Black)
16	B —44004	Cord and Plug		—44268A	Escutcheon
17	—33390	Resistor, 30,000 Ohm 1/4W.		W —44436	Felt Pad (Escutcheon) (4 Req.)
18	—24990	Resistor, 25,000 Ohm 1/4W.		W —44015A	Chassis Support Brkt. (Upper)
19A	—26577	Resistor, 3 Megohm 1/4W.		W —44016	Chassis Support Brkt. (Lower)
19B	—26577	Resistor, 3 Megohm 1/4W.		W —44041A	Sound Baffle
20	—21455	Resistor, 300,000 Ohm 1/4W.		MG44—44026	Grille Cloth Assy.—7BB
21	—35601	Resistor, 300,000 Ohm 1/4W.		MG43—44026	Baffle Assy.—7BB
22	—23785	Resistor, 500,000 Ohm 1/4W.		MG42—44026	Grille Cloth Assy.—7BC and 7BD
23	W —25937	Resistor, 275 Ohm 1/2W.		MG41—44026	Baffle Assy.—7BC and 7BD
24	W —23012A	Resistor, 40 Ohm 1/2W.	42	G164—32004	Wave Trap
25	W —25357	Resistor, 75 Ohm 3/4W.			
26	G156—36400	Socket, Type 6A8			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G	
6K7GT	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—	
6J7GT	Detector	6.3	20	10	7	—	—	
25L6GT	Output	25	85	98	6	—	—	
25Z6GT	Rectifier	25	—	—	126	—	—	
W-46416	Ballast	55 Volts A. C.						—

CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver. The ground lead of the generator should be connected through a .001 Mf. condenser to

the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

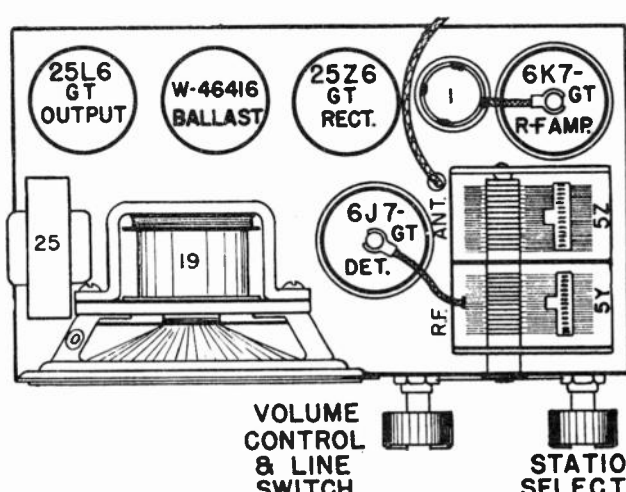
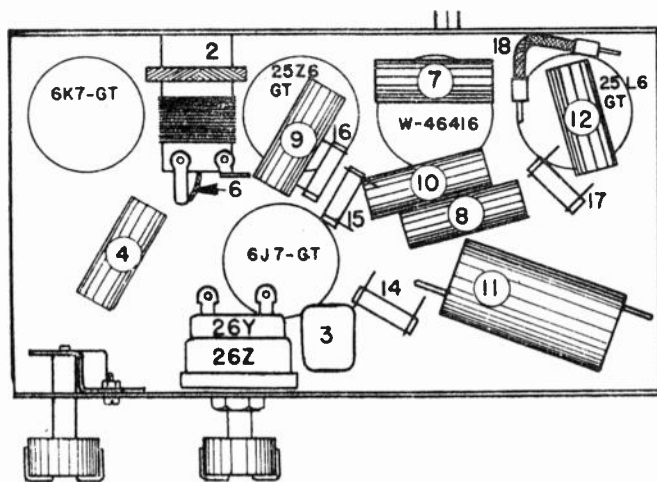
(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

NOTE: Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G182—32000	Antenna Coil	19	284-BL-4“B”	Speaker—Spec. No. 40WA3
2	G102—32001	R-F. Coil		—46691	Field Coil—450 Ohm 60 M. A.
3	G3 —34002	Condenser, .0005 Mf. Molded		284-BL-4“H”	Speaker—Spec. No. S5330M4
4	W —45708B	Condenser, .02 Mf. 160 V.		—46901	Field Coil—450 Ohm 60 M. A.
5	G60 —33001	2 Section Gang Condenser	20 to 24	G178—36400	Socket—8 Prong Octal
	D —46418	Dial Face		W —46477	Tube Shield
	W —46425	Pointer	25	G25 —29535	Output Transformer
	—41587	Pointer Mtg. Screw	26Z		Volume Control—
	W —44809C	Drive Shaft	26Y	—46411	Line Switch—
	W —44808B	Bracket—Shaft Mtg.		W —46416	Ballast Tube
	W —43549	“C” Washer—Shaft Mtg.		B —46880	Power Cable for 220 V. (Resistor)
	G10 —41582	Drive Cord—8¼ Inches		8FC	Cabinet—Mottled Brown
	W —44989	Spring—Cord Tension		—45242	Knob—2 Req.
	W —46854A	Dial Support Brkt.		—45505A	Cabinet Back
6	G3 —50640	Twisted Lead—Cap. Coupling Assy.		8FD	Cabinet—Ivory
7	W —45782B	Condenser, .05 Mf. 120 V.		W —45324	Knob—2 Req.
8	W —45780B	Condenser, .02 Mf. 160 V.		—45506A	Cabinet Back
9	W —50105	Condenser, .1 Mf. 160 V.		G3 —45281	Baffle and Grille Cloth Assy.
10	W —45708B	Condenser, .02 Mf. 160 V.		W —46421	Celluloid Dial Lens
11Z	W —46398	Condenser, 16 Mf. 125 V.		—46437	Instruction Booklet
11Y	W —45780B	Condenser, 16 Mf. 125 V.		W —46454	Cabinet Assy.—8FC—Mottled Brown
12	W —45780B	Condenser, .02 Mf. 160 V.		W —46866	Cabinet Assy.—8FD—Ivory
13	B —45784	Power Cord and Plug		—44763	Single Shipping Carton
14	—24990	Resistor, 25,000 Ohm ¾W.			
15	—37583	Resistor, 2.5 Megohm ¾W.			
16	—23785	Resistor, 500,000 Ohm ¾W.			
17	—23785	Resistor, 500,000 Ohm ¾W.			
18	W —45965	Resistor, 110 Ohm ¼W.			



MODELS 568, 577

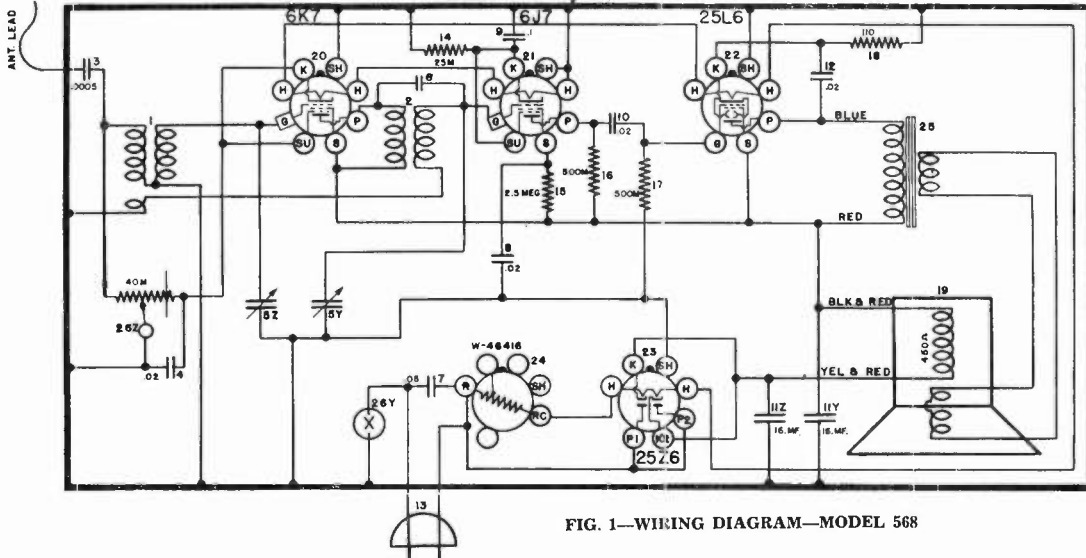


FIG. 1—WIRING DIAGRAM—MODEL 568

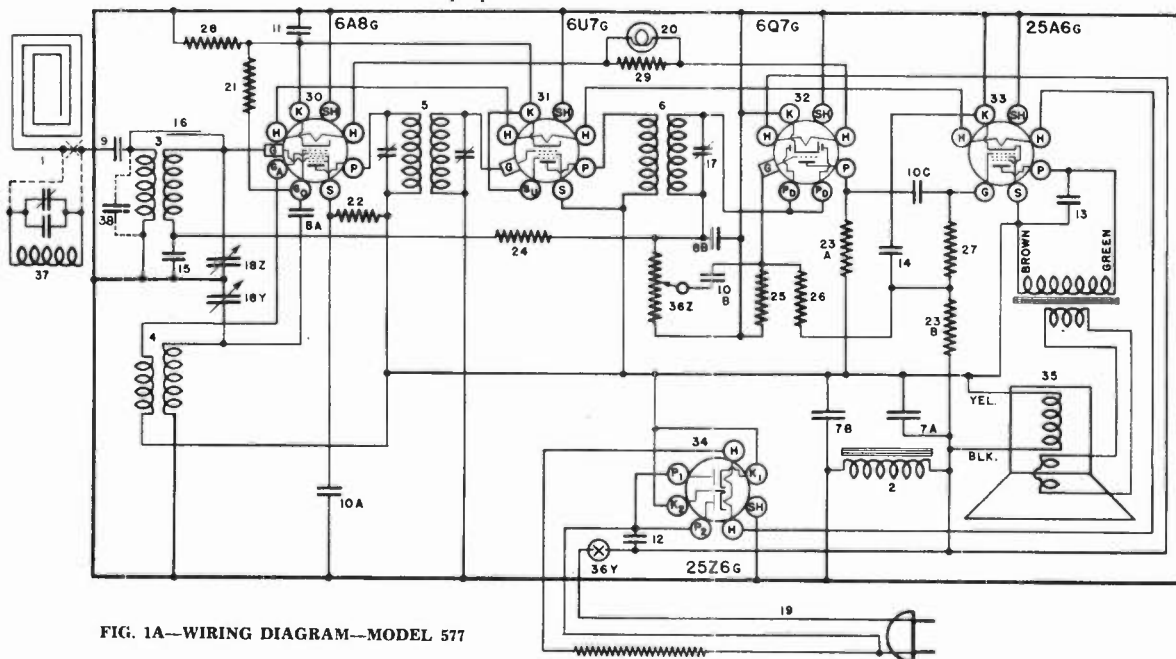
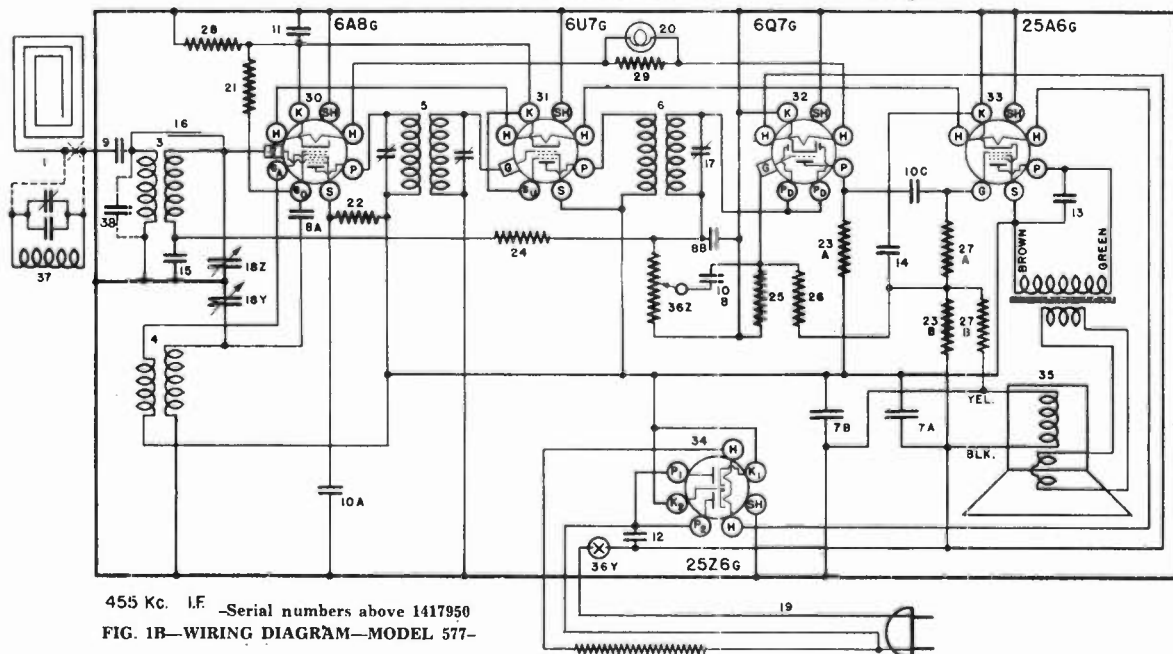


FIG. 1A—WIRING DIAGRAM—MODEL 577



455 Kc. I.F. —Serial numbers above 1417950  
FIG. 1B—WIRING DIAGRAM—MODEL 577—

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	105	60	—	3	-12	105
6U7G	I-F Amplifier	6.3	105	105	3	3	—	—
6Q7G	Det, AVC, A-F Amplifier	6.3	105	—	—	0	—	—
25A6G	Output	25.0	100	105	—	0	—	—
25Z6G	Rectifier	25.0	117.5	—	—	110	—	—

Tuning the I-F Amplifier to 455 Kilocycles.

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, located at the rear of the chassis, for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

Aligning the R-F Amplifier.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Note: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

With 455 kc. input signal from generator, adjust wave trap for minimum output.

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —31765B	Antenna Roll	21	—35928	Resistor 60,00 Ohm ¼ W.
2	G 16—29535	"B" Filter Choke (Before Serial No. 1417951)	22	—21453	Resistor 40,000 Ohm 1/3 W.
3	G144—32000	Ant. Coil	23A	—21455	Resistor 300,000 Ohm 1/3 W.
4	G147—32002	Osc. Coil	23B	—21455	Resistor 300,000 Ohm 1/3 W.
5	G158—32004	1st I-F Assy.	24	—34883	Resistor 2 Megohm 1/3 W.
6	G159—32004	2nd I-F Coil Assy.	25	—21454	Resistor 1. Megohm 1/3 W.
7A	W —43280	Condenser 25 Mf. 150 V.	26	—33490	Resistor 10. Megohm 1/3 W.
7B	W —43280	Condenser 25 Mf. 150 V.	27A	—23785	Resistor 500,000 Ohm 1/3 W.
8A	G 1—34002	Condenser .00025 Mf. Molded	27B	—23785	Resistor 500,000 Ohm 1/3 W.
8B	G 1—34002	Condenser .00025 Mf. Molded	28	W —21964	Resistor 165 Ohm ½ W. Flex.
9	G 3—34002	Condenser .0005 Mf. Molded	29	W —44396	Resistor 40 Ohm 3½ W. Flex.
10A	W —28621	Condenser .02 Mf. 200 V.	30	G156—36400	Socket Type 6A8
10B	W —28621	Condenser .02 Mf. 200 V.	31	G171—36400	Socket Type 6U7
10C	W —28621	Condenser .02 Mf. 200 V.	32	G160—36400	Socket Type 6Q7
11	W —32380	Condenser .05 Mf. 200 V.	33	G161—36400	Socket Type 25A6
12	W —23615	Condenser .05 Mf. 400 V.	34	G162—36400	Socket Type 25Z6
13	W —30323	Condenser .01 Mf. 200 V.		W —40911	Tube Shield
14	W —34712	Condenser .25 Mf. 160 V.	35	—255BL6"Q"	Speaker Sp. No. 23393 (2000 Ohm Field) Used Before Serial No. 1417951.
15	W —35936	Condenser .05 Mf. 160 V.			
16					
17	W —44142	2nd I-F Trimmer			
	W —28129	Spacer (Mtg. W-44142)		—43464	V. C. & Cone Assy. } Used
18	G 43—33001	2 Sect. Var. Tuning Cond.		—43465	Output Transformer } 255BL6
	B —44400C	Dial Face (Glass)		—43466	Cone Mtg. Ring } 273BL6
	B —44307A	Dial Glass Brkt.			"Q" Only
	W —44285	Dial Mask (Paper)		B —44374A	Baffle Board
	W —44267	Dial Mask (Metal)		—273BL6"Q"	Speaker Spec. No. 26253 (525 Ohm Field) Used After Serial No. 1417950
	W —44001A	Dial Support Ring			
	W —44306	Drive Shaft Bracket	36Z }		{ Vol. Control ½ Meg.
	W —44918	Drive Shaft	36Y }	—43449	{ On-Off Switch
	W —43549	Ret. Ring (Shaft)	37	G169—32004	Wave Trap Assy.
	G 3—43564	Pulley & Hub Assy.	38	G 5—34002	Condenser .00005 Mf. Molded
	W —41582	Drive Cord		—7 DC	Cabinet
	W —43561	Drive Cord Spring		—44330	Grille Cloth
	W —43550A	Pointer		—44268A	Escutcheon
	W —40486	Screw FS20 Pointer Mtg.		W —44381B	Knob
19	B —44192	Power Cord & Plug		B —44373A	Cabinet Back
	B —30772B	Power Cord & Plug for adapting set to 220 V. Power Sup.			
20	W —44337	Dial Light 6-8 V.			
	G 6—27134	Socket Assy. Dial L.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7G	OSC. MOD.	GND.	1.5	78	35	G.	78	GND.	N.C.
1P5G	1st I-F Amp.	GND.	1.5	41	90	N.C.	N.C.	GND.	N.C.
1N5C	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J.B.
1H5G	Det., AVC, 1st A-F	N.C.	1.5	22	N.C.	Diode	90 J.B.	GND.	N.C.
1Q5G	Output	-5 J.B.	1.5	85	90	G.	N.C.	GND.	N.C.

1. Tuning the I-F Amplifier To 455 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely meshed. Turn the volume control knob to the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output.
- (e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.
- (f) Check operations (d) and (e) for more accurate adjustments.

2. Aligning R-F Amplifier.

- (a) Connect the output lead from the signal generator through a .0001 mfd. condenser to the "ANT." terminal of the receiver. Connect generator ground lead to the chassis.
- (b) Set signal generator to 1712 kilocycles.
- (c) Open condenser gang all the way.
- (d) Adjust "OSC" trimmer on gang to 1712 kc. signal. the gang should just tune through this signal.
- (e) Set signal generator to 1400 kilocycles.
- (f) Tune-in 1400 kc. signal with station selector, should be approximately 140 on dial.
- (g) Adjust "ANT." trimmer on gang for maximum output. Do not readjust "OSC" trimmer. Repeat above operations for more accurate adjustments.

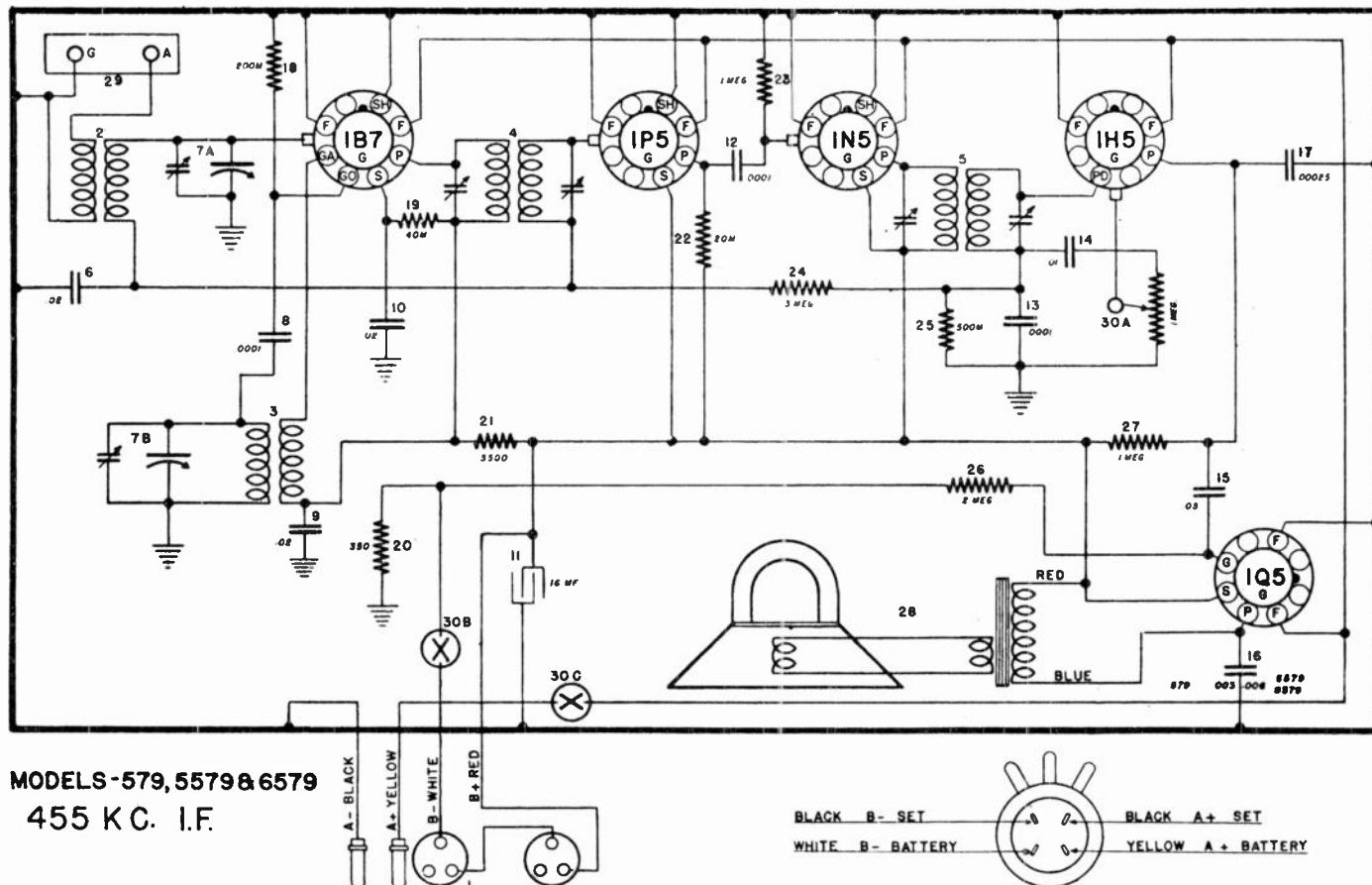


FIG. 1—WIRING DIAGRAM—MODELS 579, 5579, 6579



## PARTS LIST — MODELS 579, 5579, 6579

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48312	Battery Cable (579, 5579)		—46290	Cord Clamp
	—47061	Battery Cable (6579)		G12 —43564	Pulley and Hub Assy. (On Gang)
2	G189—32000	Antenna Coil	MG20—47860	—45580	Idle Pulley Bracket Assy.
3	G186—32002	Oscillator Coil		—45620	Rubber Grommet—P. B. Unit Mtg. (4)
4	G194—32004	1st I-F. Assy.		—6495	Headed Bushing—P. B. Unit Mtg. (4)
5	G195—32004	2nd I-F. Assy.			No. 8—32 x 1/16" Screw—P. B. Unit
6	—28621	Condenser, .02 Mf. 200 V.		—47914	Mtg. (4)
7	G79 —33001	2 Section Var. Tuning Condenser		—47893	Speaker Rear Mtg. Bracket
8	G2 —34002	Condenser, .0001 Mf. Mica		—48764	Speaker Lower Mtg. Bracket
9	—28621	Condenser, .02 Mf. 200 V.		—46293	Cord Guide (Idle Pulley)
10	—28621	Condenser, .02 Mf. 200 V.		—46294	Idle Pulley
11	—48122	Condenser, 16 Mf. 250 V.		—47865	Idle Bearing Stud
12	G2 —34002	Condenser, .0001 Mf. Mica		—48134	Glass Dial Face (579)
13	G2 —34002	Condenser, .0001 Mf. Mica		MG32—47861	Glass Dial Face (6579)
14	—30323	Condenser, .01 Mf. 200 V.		—47765	Escutcheon and Reflector Assy.
15	—32380	Condenser, .05 Mf. 200 V.		—48018	Escutcheon only
16	—25435	Condenser, .003 Mf. 400 V. (579 only)		—48135	Reflector only
16	—28619	Condenser, .006 Mf. 400 V. (5579 and 6579)		—48167	No. 3—56 x 9/16" Screws—Escutcheon
17	G1 —34002	Condenser, .00025 Mf. Mica		—80	Mtg. (579 only) (FS-58)
18	—34018	Resistor, 200,000 Ohms 1/2 W.	S	—48168	Escutcheon Mtg. Bracket (6579 only)
19	—21453	Resistor, 40,000 Ohms 1/2 W.			No. 4 x 3/8" Screw—Escutcheon Brkt.
20	—28589	Resistor, 350 Ohms 1/2 W.			Mtg. (6579 only) (FS-58)
21	—30137	Resistor, 3,500 Ohms 1/2 W.			No. 3—56 x 11/16" Screw—Escutcheon
22	—22196	Resistor, 20,000 Ohms 1/2 W.		—48341	Mtg. (6579 only) (FS-58)
23	—21454	Resistor, 1 Megohm 1/2 W.		—46953	Push Button (5)
24	—26577	Resistor, 3 Megohms 1/2 W.		—48165	Knob (2) (579 only)
25	—23785	Resistor, 500,000 Ohms 1/2 W.		—48734	Knob (2) (6579 only)
26	—34883	Resistor, 2 Megohms 1/2 W.		—48747	Station Call Letter Sheet
27	—21454	Resistor, 1 Megohm 1/2 W.		—48110	Celluloid Cover—Call Letters
28	274-PL-8" "B"	Spkr., Mfgr. Spec. No. 55-PWS-17 (579)		—48110	Cabinet—Mottled Brown—B-579-A
	—48002	Output Transformer (579)		—46242	Shipping Carton—9GA Cabinet
	274-PL-8" "K"	Spkr., Mfgr. Spec. No. 51-WM-1 (579)		—48346	Rubber Foot—9GA Cabinet
	—48568	Output Transformer (579)		MG31—48266	Instruction Book—B-579-A
	492-PJ-3" "R"	Speaker, Mfgr. Spec. No. F-5733 (5579)		—9EJ	Instruction Envelope Assy. (579)
	—48619	V. C. and Cone Assy. (5579)		—48351	Cabinet—Wood—B-6579-D
	—43978	Cardboard Ring—Cone Mtg. (5579)		—48890	Shipping Carton—9EJ Cabinet
	—48620	Output Transformer		—30409	No. 8—32 x 7/8" Screw—Chassis Mtg.
	392-PL-9" "B"	Speaker, Mfgr. Spec. No. 503-PRW-1 (6579)		—48354	(6579) (FS-58)
	—48336	Output Transformer (6579)		MG31—48270	Flat Washer—Chas. Mtg. (6579) (FS-58)
	—51208	Tube Shield			Instruction Booklet (6579)
29	G1 —48315	Ground Clip—For Tube Shield			Instruction Envelope Assy. (6579)
	—26719	"A" and "C" Terminal Assy.			
30	—46729	Socket—8 Prong—No Marking		MG12—47980	
	—48328	Sw. and Vol. Control (1 Meg.) (579, 6579)		MG10—48267	Dial Support Bracket
	—48336	Sw. and Vol. Control (1 Meg.) (5579)		—48249	Guide Cord and Idler Sup. Brkt. Assy.
	—47979	Chassis Mounting Strap		—46020	Dial Glass
		<b>PUSH BUTTON UNIT PARTS</b>		—48187	L. H. Clip—Dial Glass Mtg.
G38	—45683	Push Button Tuning Unit (With Gang)		—48084	R. H. Clip—Dial Glass Mtg.
U	—49662	Push But. Tun. Unit (Without Gang)		—48032	Cushion—Dial Glass Mtg. (Rubber)
G56	—45683	Riveted Key Assy.		G12 —43564	Pointer—Dial Hand
	—50542	Lock Clip—Station Setting		G22 —41582	Pulley and Hub Assy. (On Gang)
	—45717	Screw—Station Setting		—50590	Drive Cord (43 3/4" Long)
	—50607	Spring—Key Return		—46056	Spring—Drive Cord Tension
G31	—47880	Rocker Bar and Gear Assy.		—43542	Drive Shaft and Pulley
	—50561	No. 6—40 x 1/8" Screw—Rocker Bar Bearing		G31 —41582	Bracket—Drive Shaft Mtg.
	—51146	Bronze Spring—Rocker Bar Bearing		—46848	Guide Cord (14" Long)
	—50547	Key Plate—Rear Slide Adj.		—46290	Spring—Guide Cord Tension
	—50588	Adjusting Clip (Heart Shaped) (4)		—45580	Cord Clamp
	—45646	Adjusting Clip (Hooked End) (1)		—45620	Rubber Grommet—P. B. Unit Mtg.
	—48022	R. H. P. B. Unit Mtg. Brkt. (5579 only)		—6495	Headed Bushing—P. B. Unit Mtg.
	—48023	L. H. P. B. Unit Mtg. Brkt. (5579 only)		G4 —38621	No. 8—32 x 7/16" Screw—P. B. Unit Mtg.
MG18—47860	—48023	R. H. P. B. Unit Mtg. Brkt. (579, 6579 only)		G5 —38621	Green Speaker Wire and Tip Jack
	—48043	L. H. P. B. Unit Mtg. Brkt. (579, 6579 only)		G6 —38621	Red Speaker Wire and Tip Jack
MG19—47860	—9EQ	L. H. P. B. Unit Mtg. Brkt. (579, 6579 only)		—47831	Blue Speaker Wire and Tip Jack
	—48424	Light Guard Assy. (Push Button Keys)		—48043	Cabinet—Model B-5579-M
		<b>MISCELLANEOUS MECH. PARTS</b>		—48539	Shipping Carton
	—47875	<b>MODELS 579, 6579 ONLY</b>			Escutcheon—Dial Opening
	—47930	Dial Background (FS-71)		—48558	No. 3 x 1/4" Phillips Hd. Screws—
	—43542	Pointer—Dial Hand (FS-77)		—47740	Escutcheon Mtg.
	—47969	Bracket—Drive Shaft Mtg.		—47960	Felt Strip
	—50590	Drive Shaft and Pulley		—48349	Speaker Cloth
G20	—41582	Drive Cord Tension Spring		—48748	Knob
	—46848	Drive Cord (42 3/4" Long)		MG31—48268	Instruction Booklet
G30	—41582	Guide Cord Tension Spring		—48899	Station Call Letter Sheets
		Guide Cord (9 1/2" Long)		—45579	Celluloid Cover—Call Tabs
				—2046	Instruction Envelope Assy.
				—48558	Screws—Chassis Mtg.
				—47740	Flat Washer—Chassis Mtg.
				—47960	Shakeproof Washer—Speaker Mtg.
				—48349	No. 8—32 Nut—Speaker Mtg.
				—48750	Flat Washer—Speaker Mtg.
				—48748	
				N —8	
				O —8	

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	90	45	-1.5	—	—
1A6	Oscillator-Modulator	2.0	90	45	-1.5	55	-2 to -5
34	I-F Amplifier	2.0	90	45	-1.5	—	—
1B5/25S	Detector and A-F Amplifier	2.0	90	—	-1.5	—	—
950	Output	2.0	90	90	-13.5	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 950 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 1A6 Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely out of mesh.

(c) Turn the volume control of the receiver full on.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on the 1st I-F

transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(h) Repeat operations (e) and (f) for more accurate adjustments.

(i) Set the signal generator to 600 kilocycles.

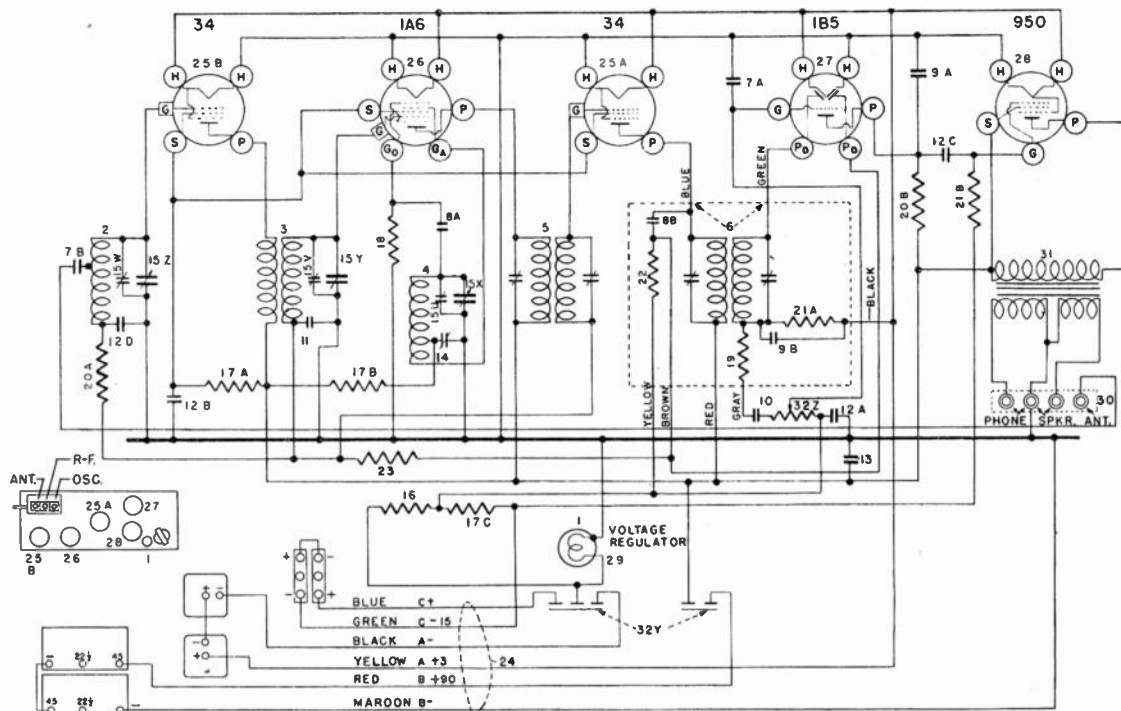
(j) Tune-in this signal with the station selector for maximum reading on the output meter.

(k) Adjust the series trimmer, item 14, while rocking the tuning condenser back and forth slightly until no further improvement in output can be obtained.

(l) Return the signal generator to 1400 kilocycles and repeat operations (g) and (h).

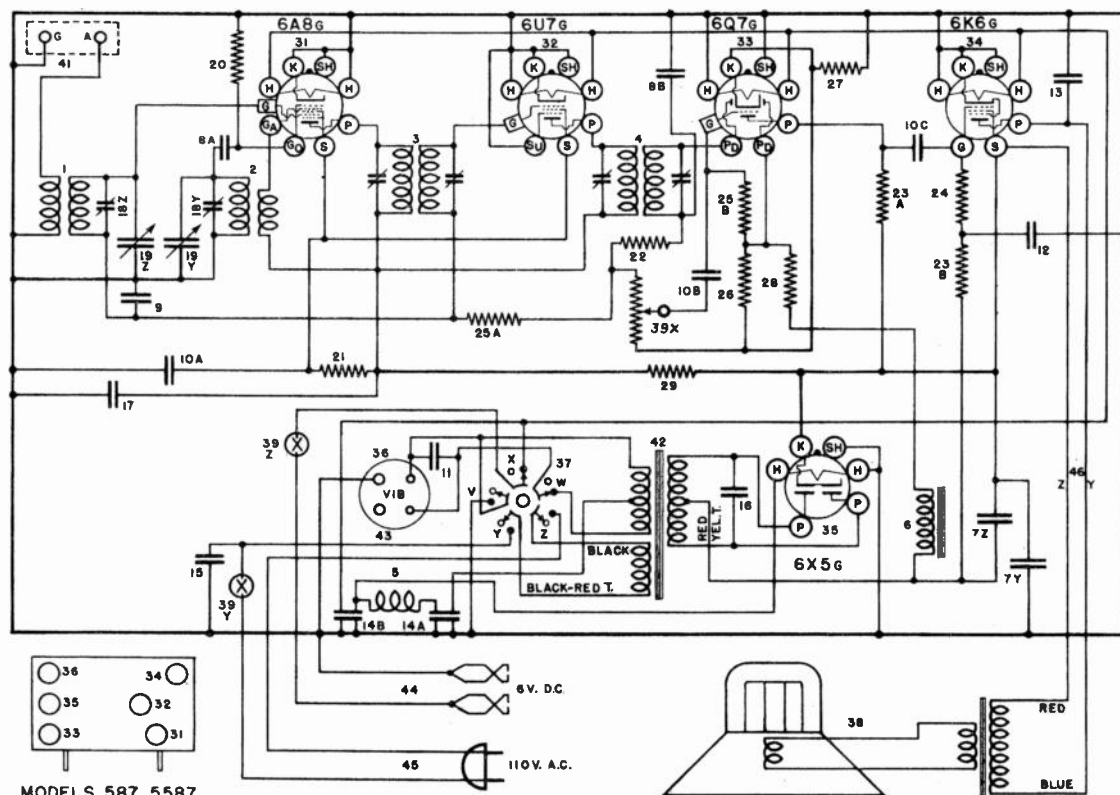
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —42105A	Voltage Regulator Tube	23	—35927	Resistor 2 Megohm ¼W.
2	G117—32000	Ant. Coil	24	MG36—42101	Battery Cable Assembly
3	G85 —32001	R-F Coil	25AB	G31 —28807	Socket Type 34
4	G106—32002	Osc. Coil	26	G55 —28807	Socket Type 1A6
5	G35 —32005	1st I-F Assembly	27	G91 —28807	Socket Type 1B5
6	G31 —32005	2nd I-F Assembly (contains Items 8B, 9B, 19, 21A, 22)	28	G94 —28807	Socket Type 950
7AB	G5 —34002	Condenser .00005 Mf. 200 V.	29	W —42106	Socket Volt. Regulator
8AB	G2 —34002	Condenser .0001 Mf. 200 V.		W —40911	Tube Shield (Small)
9AB	G1 —34002	Condenser .00025 Mf. 200 V.		W —26974B	Tube Shield (Large)
10	W —36541	Condenser .02 Mf. 160 V.	31	G58 —24628	Out-Put Transformer
11	W —35936	Condenser .05 Mf. 200 V.	32Z } —41609		{ Vol. Cont. 1 Megohm
12AB } —41609			32Y } —41609		{ Battery Switch
CD } W —27216	Condenser .05 Mf. 200 V.		30	MG3 —42101	Spk., Phone and Ant. Term. Assembly
13	W —29910A	Condenser .25 Mf. 200 V.		W —42119	Battery Clamp ("A" Batt.)
14	—40769	Condenser (Osc. Series Trimmer)		W —42123	Battery Clamp ("C" Batt.)
15	G55 —33002	3 Sect. Var. Tuning Cond. Gang		MG8 —42101	Case Assembly less End Covers
	W —42162	Dial (Calibrated Disc.)		MG4 —42101	Rear Cover
	W —42122	Bearing Support Bracket		MG9 —42101	Front Cover Assembly
	W —42141	Sprocket Shaft Assembly		W —42195	Carrying Handle
	B —41315A	Sprocket Hub Assembly		W —42178	Handle Fastener
	W —42160	Drive Chain		W —5558	Phone Tip Jack (only)
	W —42120	Take Up Spring (Chain)		W —42179	Knob (Vol. Cont.)
	W —40486	Dial Mtg. Screw		W —35252A	Knob (Sta. Sel.)
16	W —22514	Resistor 750 Ohm ½W.		W —42217	Head-Phones
17A } —36318				MG2 —42102	Antenna Assembly
BC } —36761	Resistor 15,000 Ohm ¼W.			243PS2	Speaker
18	—35600	Resistor 40,000 Ohm ¼W.		MG22—42102	Speaker Case only
19	—35600	Resistor 100,000 Ohm ¼W.		B —42507	Speaker Grille
20AB	—35601	Resistor 300,000 Ohm ¼W.		W —1500G	Speaker Cord
21AB	—36322	Resistor 500,000 Ohm ¼W.		—42201	Chassis Mtg. Screws
22	—35602	Resistor 1 Megohm ¼W.			



MODEL 586 262 KC. I-F

WIRING DIAGRAM—MODEL 586



MODELS 587, 5587  
455 Kc. I.F.

WIRING DIAGRAM—MODELS 587 and 5587

**SOCKET VOLTAGE READINGS TAKEN ON 117.5 VOLT A. C. POWER SUPPLY**

Tube	Function	H	P	S	Su	K	G	Ga
6A8G	Oscillator-Modulator	6.3	192	94	-	0	-	192
6U7G	I.-F. Amplifier	6.3	192	94	0	0	-	-
6Q7G	Det., AVC, 1st A. F.	6.3	72	-	-	-2.5	-1.0*	-
6K6G	Output	6.3	195	205	-	0	-20.**	-
6X5G	Rectifier	6.3	-	-	-	205	-	-

**SOCKET VOLTAGE READINGS TAKEN ON 6 VOLT STORAGE BATTERY**

Tube	Function	H	P	S	Su	K	G	Ga
6A8G	Oscillator-Modulator	6.0	131	62	-	0	-	131
6U7G	I.-F. Amplifier	6.0	131	62	0	0	-	-
6Q7G	Det., AVC, 1st A. F.	6.0	47	-	-	1.0	-2.7*	-
6K6G	Output	6.0	132	139	-	0	-12.**	-
6X5G	Rectifier	6.0	-	-	-	131	-	-

\* Measured across item 26.

\*\* Measured from junction of items 6 and 23B to chassis.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the trimmer condensers located on the 2nd I. F. transformer, item 4—fig. 2, for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I. F. transformer, item 3—fig. 2, for maximum output.

**Aligning The R-F Amplifier.**

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the antenna terminal of the receiver.

(b) Set the signal generator to 1725 kilocycles.

(c) With the condenser gang rotated to the minimum capacity position, adjust the "OSC" SHUNT TRIMMER so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune-in the 1400 kilocycle signal, in the region of 140 on the dial, for maximum output.

(f) Adjust the "ANT" SHUNT TRIMMER for maximum output. NOTE: Do not readjust the "OSC" SHUNT TRIMMER.

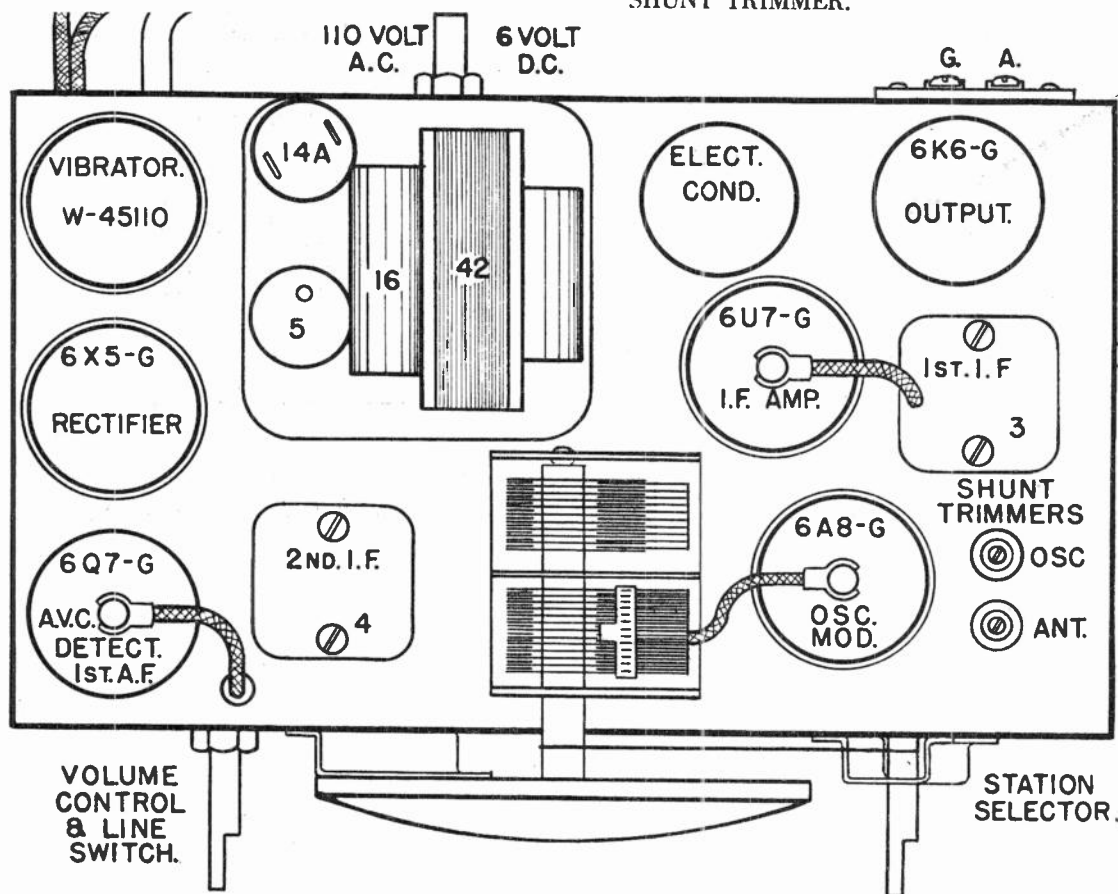


Fig. 2—Top View Models 587 and 5587

**PARTS LIST—MODELS 587 and 5587**

Figures in first column refer to parts			Diagrams.		
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G154—32000	Ant. Coil, 1725—540 Kc.	23A	—35601	Resistor, 300,000 Ohm ¼W. Ins.
2	G156—32002	Osc. Coil, 1725—540 Kc.	23B	—35601	Resistor, 300,000 Ohm ¼W. Ins.
3	G173—32004	1st I-F., 455 Kc.	24	—36322	Resistor, 500,000 Ohm ¼W. Ins.
4	G174—32004	2nd I-F., 455 Kc.	25A	—36688	Resistor, 3 Megohm ¼W. Ins.
5	G26 —28067	"A" Filter Choke	25B	—36688	Resistor, 3 Megohm ¼W. Ins.
6	G23 —29535	"B" Filter Choke	26	W —23012A	Resistor, 40 Ohm ¼W. Flex.
7	W —44769A	Condenser, Dual 6 Mf. 250 V. (587 only)	27	W —25357	Resistor, 75 Ohm ¼W. Flex.
7	W —44868A	Condenser, Dual 8 Mf. 250 V. (5587 only)	28	W —27504	Resistor, 100 Ohm ½W. Flex.
8A	G1 —34002	Condenser, .00025 Mf. Molded	29	W —23907	Resistor, 750 Ohm 1½W. Flex.
8B	G1 —34002	Condenser, .00025 Mf. Molded	31	G156—36400	Socket, 6A8 Type
9	W —36541	Condenser, .02 Mf. 160 V.	32	G171—36400	Socket, 6U7 Type
10A	W —28621	Condenser, .02 Mf. 200 V.	33	G160—36400	Socket, 6Q7 Type
10B	W —28621	Condenser, .02 Mf. 200 V.	34	G172—36400	Socket, 6K6 Type
10C	W —28621	Condenser, .02 Mf. 200 V.	35	G168—36400	Socket, 6X5 Type
11	W —35936	Condenser, .05 Mf. 200 V.	36	G105—28807	Socket, Vibrator
12	W —24049C	Condenser, .1 Mf. 200 V.		W —40911	Tube Shield
13	W —35758	Condenser, .008 Mf. 400 V.	37	W —45028	A. C.—D. C. Switch (Change Over)
14A	W —50161	Condenser, .5 Mf. 120 V.	38	274-PL-18"U"	Speaker, Spec. 5-PA-4 (587 only)
14B	W —50161	Condenser, .5 Mf. 120 V.		—44537	V. C. and Cone Assy. (274-PL-18"U")
15	W —30805	Condenser, .01 Mf. 400 V.		—45295	Output Transformer (274-PL-18"U")
16	W —50170	Condenser, .01 Mf. 1,000 V.	38	474-PJ-2"M"	Speaker, Spec. 1-D-1282
17	W —37173	Condenser, .25 Mf. 300 V.		—45551	Cone Assembly (474-PJ-2"M")
18	W —37986A	2 Section Shunt Trimmer Cond. Assy.		—45552	Output Trans. (474-PJ-2"M")
19	G46 —33001	2 Section Var. Tuning Condenser (587 only)	39Z		Ring, Cone Mtg. (474-PJ-2"M")
	B —44981A	Dial Face (587 only)	39Y		(6 V. D. C. Switch (On-Off)
	W —44285	Dial Mask, Paper (587 only)	39X		110 V. A. C. Switch (On-Off)
	W —44001A	Ring—Dial Support (587 only)	41	G1 —26719	Volume Control
	W —44267	Dial Mask (587 only)	42	G19 —32769	Ant. and Gnd. Terminal Assy.
	B —45033	Support—Dial Face (587 only)	43	W —50130	Power Transformer
	W —43550A	Dial Hand (587 only)	44	W —45110	Trans. Shield
	W —40486	Screw—Hand Mtg.		G3 —44948	Vibrator, 6 Volt
	W —44989	Spring—Cord Tension (587 only)		—34903	Battery Cable Assy.
	W —41582	Drive Cord		—34904	Battery Clip (Pos.)
	W —45030	Bracket—Drive Shaft Mtg.	45	B —44004	Battery Clip (Neg.)
	W —45031	Drive Shaft (587 only)	46Z	G1 —45078	Power Cord and Plug (A. C.)
	W —43549	Ring—Shaft Retaining	46Y	G2 —45078	Red Speaker Lead (5587 only)
19	G47 —33001	2 Section Var. Tuning Condenser (5587 only)	47		Blue Speaker Lead (5587 only)
	B —41994A	Dial Face (5587 only)		G20 —45022	Vib. Shield Assy.
	W —44085B	Dial Mask (5587 only)		G19 —45022	Switch Shield Assy.
	W —44084	Ring—Dial Support (5587 only)		7MD	Cabinet (5587 only)
	C —44082E	Support Bracket—Dial (5587 only)		7AF	Cabinet (587 only)
	W —44299	Dial Hand (5587 only)	W	—44432	Knob (1)
	G1 —43564	Pulley and Hub Assy. (5587 only)	W	—44381B	Knob (2)
	W —43542B	Bracket—Drive Shaft (5587 only)		—44268A	Escutcheon (587 only)
	W —44134A	Drive Shaft (5587 only)	B	—44226B	Escutcheon (5587 only)
	W —43561	Spring—Cord Tension (5587 only)	W	—45056	Rubber Mtg. Foot (5587 only)
20	—35928	Resistor, 60,000 Ohm ¼W. Ins.	W	—43553	Rubber Mtg. Foot (587 only)
21	—24990	Resistor, 25,000 Ohm ½W. Carb.	B	—45231	Bottom Mtg. Plate (5587 only)
22	—35600	Resistor, 100,000 Ohm ¼W. Ins.			

*Twenty-five years ago the Crosley Corporation supplied the service man's need for crystal detectors. It can supply the infinitely greater radio service needs of today's fast moving industry.*

CHASSIS NO. 588 (Super Vanity Fiver)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8-GT	Oscillator-Modulator	6.3	105	65	—	—	-10	105
6K7-GT	I-F Amplifier	6.3	105	65	—	—	—	—
6Q7-GT	Det, AVC, A-F Amplifier	6.3	42	—	—	—	—	—
25L6-GT	Output	25.1	95	105	—	—	—	—
25 Z6-GT	Rectifier	25.1	117.5 A.C.	—	—	132	—	—

Tuning The I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT. (Leave grid cap in place). Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(d) Adjust the 2nd I-F trimmer condenser, (Fig. 3) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on back flange of the chassis, for maximum output.

Aligning The R-F Amplifier.

Connect output of signal generator through a .0001 mf. condenser to "ANT" lead.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

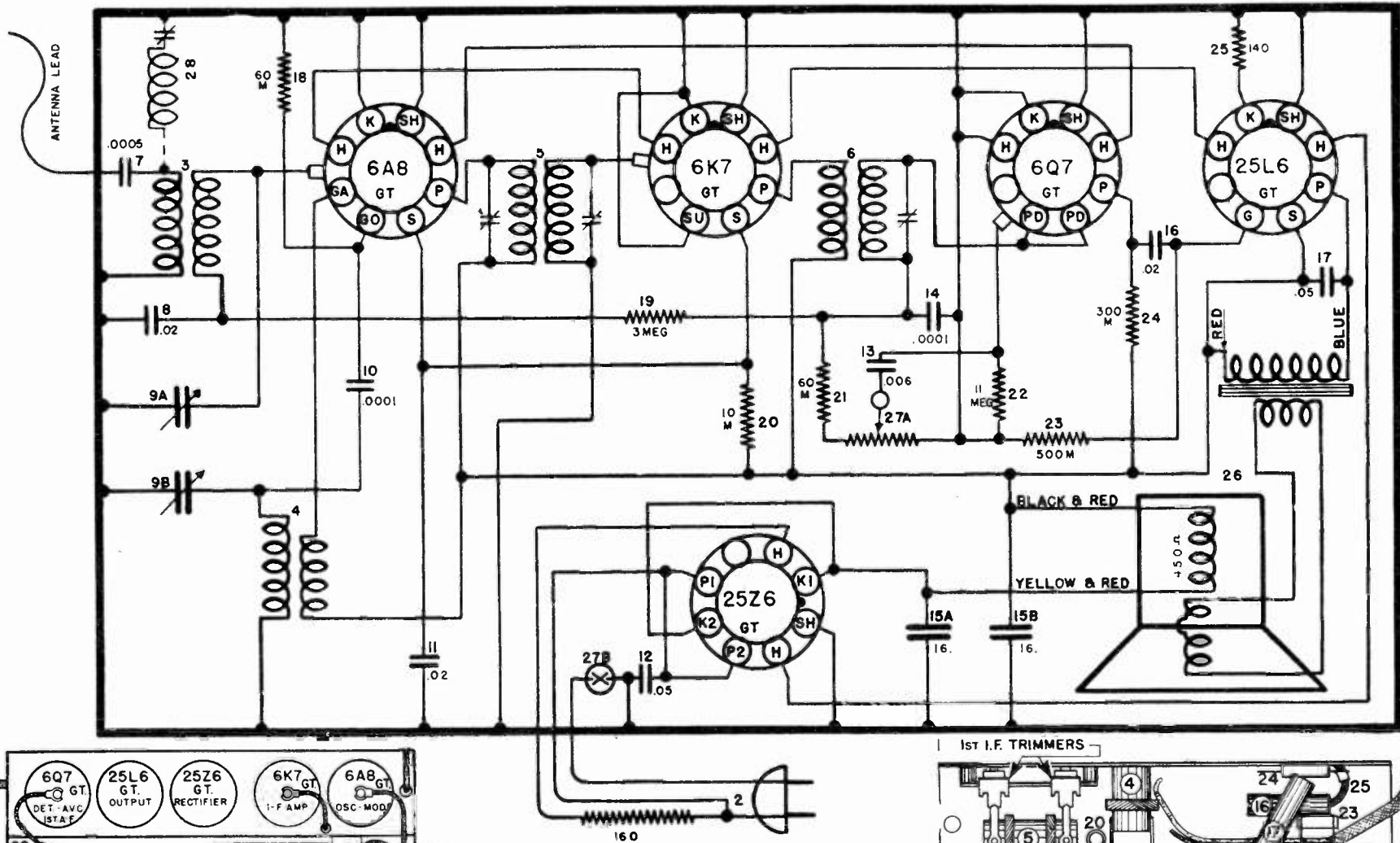
(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

With 455 kc. input signal from generator, adjust wave trap for minimum output.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G152-34403	Antenna Lead		W -35201	3/8" Nut for Volume Control
2	B -46652	Power Cable and Plug	W	-46729	Socket, 8 Prong (No Marking)
3	G185-32000	Antenna Coil		-46912	8BC Cabinet (Brown)
4	G182-32002	Oscillator Coil		-46961	8BD Cabinet (Ivory)
5	G207-32004	1st I.F. Transformer		-47082	8BE Cabinet (Red)
6	G206-32004	2nd I.F. Transformer		-45828C	8BC Cabinet Back
7	G3 -34002	Condenser, .0005 Mf. Molded		-45829C	8BD Cabinet Back
8	W -45780B	Condenser, .02 Mf. 160 V. Paper		-45794C	8BD Cabinet Back
9A } 9B }	G62 -33001	2 Section Gang (Antenna Section Oscillator Section)	W	-45852A	Baffle Board
	W -46660	Condenser Mounting Bracket	W	-46888A	8BD Grille Cloth
10	G2 -34002	Condenser, .0001 Mf. Molded	W	-46910	8BC and 8BE Grille Cloth
11	W -45780B	Condenser, .02 Mf. 160 V. Paper		-46884	8BD and 8BE Tuning Knob (Black)
12	W -45782B	Condenser, .05 Mf. 120 V. Paper		-45824A	8BD and 8BE Volume Control Knob (Black)
13	W -45810B	Condenser, .006 Mf. 200 V. Paper		-46639	8BC Tuning Knob (Brown)
14	G2 -34002	Condenser, .0001 Mf. Molded		-46638A	8BC Volume Control Knob (Brown)
15A } 15B }	W -46398	Condenser, 16 Mf. 125 V. Elect.		-46417	8BC Push Buttons (Brown)
16	W -45780B	Condenser, 16 Mf. 125 V. Elect.		-50617	8BD and 8BE Push Buttons (Black)
17	W -45817B	Condenser, .02 Mf. 160 V. Paper		-50841	8BC Call Letter Sheet
18	-35928	Resistor, .05 Mf. 160 V. Paper		-46887	8BD and 8BE Call Letter Sheet
19	-36688	Resistor, 60,000 Ohm 1/4 W. Ins.	W	-50551A	Call Letter Covers (5 in Envelope)
20	-21876	Resistor, 3 Megohm 1/4 W. Ins.	W	-45930C	Rubber Foot (4 Req.)
21	-35928	Resistor, 10,000 Ohm 1/4 W. Carb.	W	-45931A	Cabinet Mounting Screw and Foot
22	-46497	Resistor, 60,000 Ohm 1/4 W. Ins.		-46637	Instructions
23	-36322	Resistor, 11 Megohm 1/4 W. Carb.	G14	-45683	Push Button Unit Assembly Complete
24	-35601	Resistor, 500,000 Ohm 1/4 W. Ins.	G26	-45683	Riveted Key Assembly
25	W -41759	Resistor, 300,000 Ohm 1/4 W. Ins.	G27	-45683	Rocker Plate Assembly
26	281-BL-5-"B"	Resistor, 140 Ohm 1/2 W. Flex.	W	-50542C	Key Clip (Lock Clamp)
	W -45900B	Speaker, Spec. 55WA24	W	-50547	Key Plate (Rear Guide)
	-6876	Speaker Support Bracket	W	-50607C	Key Return Spring
	-46644	Speaker Bracket Screws	W	-50561	No. 6-40 x 1/8" Screw (Rocker Plate Bearing)
	L10	No. 10-32 x 3/8" H.H. Screw		-31388	No. 8-32 x 1/4" Washer Head Screw
	-46682	Lock Washer		-45717	Adjusting Screw
	-46686	Cone and V. C. Assembly		-2046	No. 8 Shakeproof Washer
	-46687	Field Coil	B	-46880	220 V. Power Cord 300 Ohm
	-46687	Output Transformer			
	-46685	Cardboard Ring			
27A } 27B }	-46633	Volume Control, 1 Meg.			
	W -45789A	Power Switch			
28	G184-32004	Volume Control Bracket			
		Wave Trap (455 Kc.)			



MODEL 588

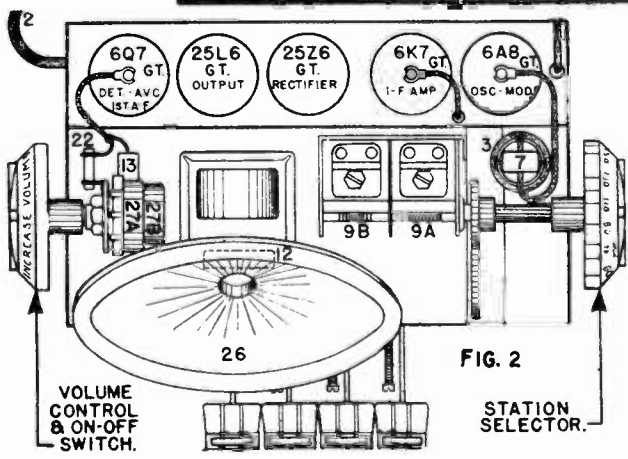
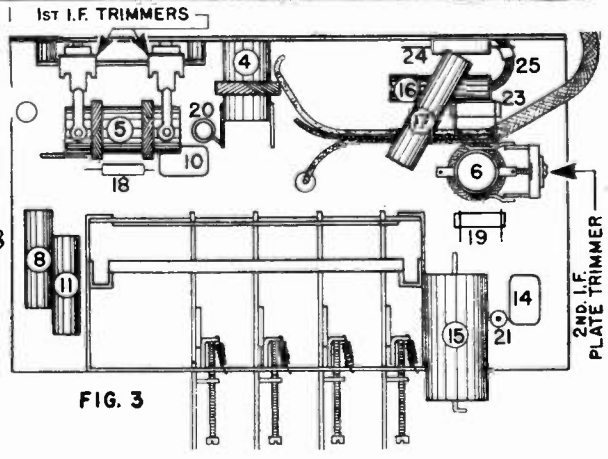


FIG. 1—WIRING DIAGRAM—MODEL 588



TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7G	OSC. MOD.	GND.	1.5	78	35	G.	78	GND.	N.C.
1P5G	1st I-F Amp.	GND.	1.5	41	90	N.C.	N.C.	GND.	N.C.
1N5U	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J.B.
1H5G	Det., AVC, 1st A-F	N.C.	1.5	22	N.C.	Diode	90 J.B.	GND.	N.C.
1Q5G	Output	-5 J.B.	1.5	85	90	G.	N.C.	GND.	N.C.

Initial bias = -5 volts measured across item 20—350 Ohms.

Power Output Approximately 500 M.W.

'A' Battery Drain = 350 M.A. @ 1.5 volts.

'B' Battery Drain = 15 M.A. @ 90 volts.

GND. = Ground. N.C. = No Connection. J.B. = Junction Block. G. = Grid.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1Q5G Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and band switch to B. C. position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead of the signal generator to the ANT. terminal of the receiver through a 250 ohm carbon resistor and the ground lead to the "GND" terminal.

(b) Set signal generator to 18.3 megacycles.

(c) Turn tuning condenser gang so plates are completely out of mesh, turn the volume control on full, the tone control to treble and the band switch to S. W. band.

(d) Adjust S. W. Oscillator trimmer condenser for maximum output.

(e) Set signal generator to 18.0 megacycles.

(f) With the manual tuning knob tune-in the 18. megacycle signal for maximum output. Then adjust the S. W. Antenna trimmer condenser for maximum output.

NOTE: Make sure the short wave band is aligned on the fundamental frequency (18 megacycles) and not the image frequency by increasing the signal generator output and tuning in the image frequency (approx. 17.1 mc. on the dial). If receiver is correctly aligned the image will be heard as stated above but will be much weaker than the fundamental.

(g) Repeat operations (b) to (f) for more accurate adjustments.

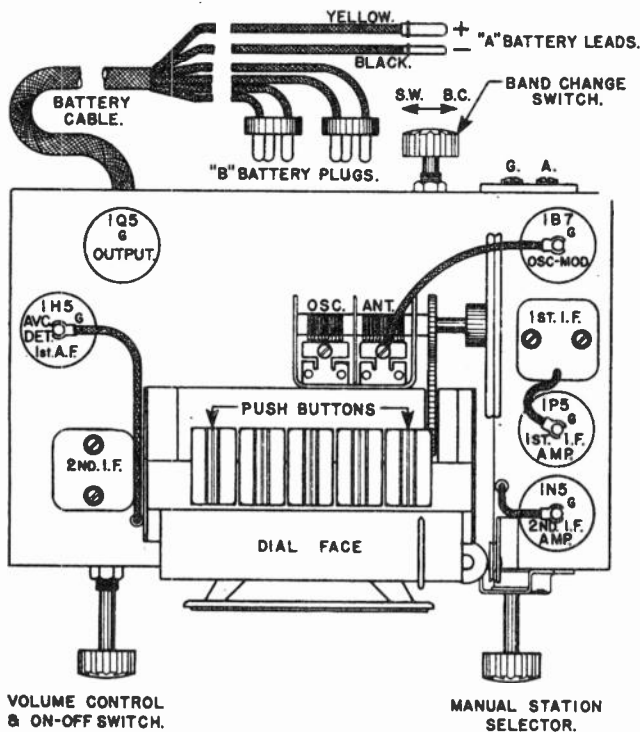


Fig. 2-A—Top View Model 589

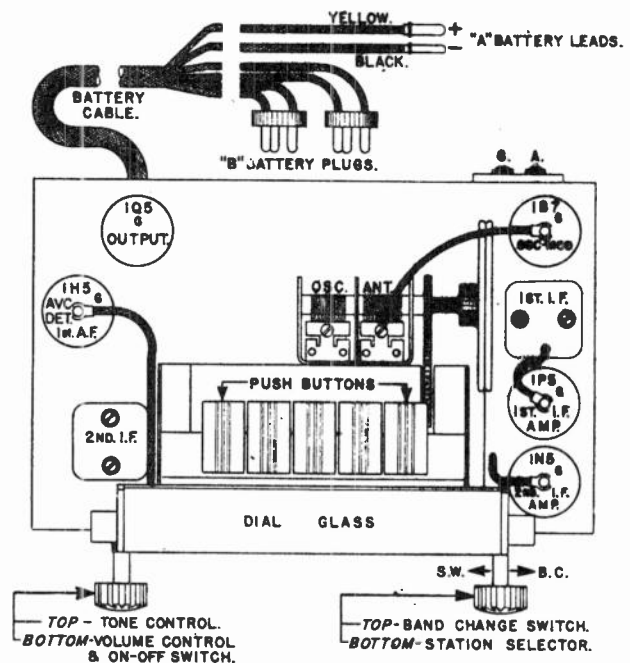


Fig. 2-B—Top View Model 5589



MODELS 589, 5589

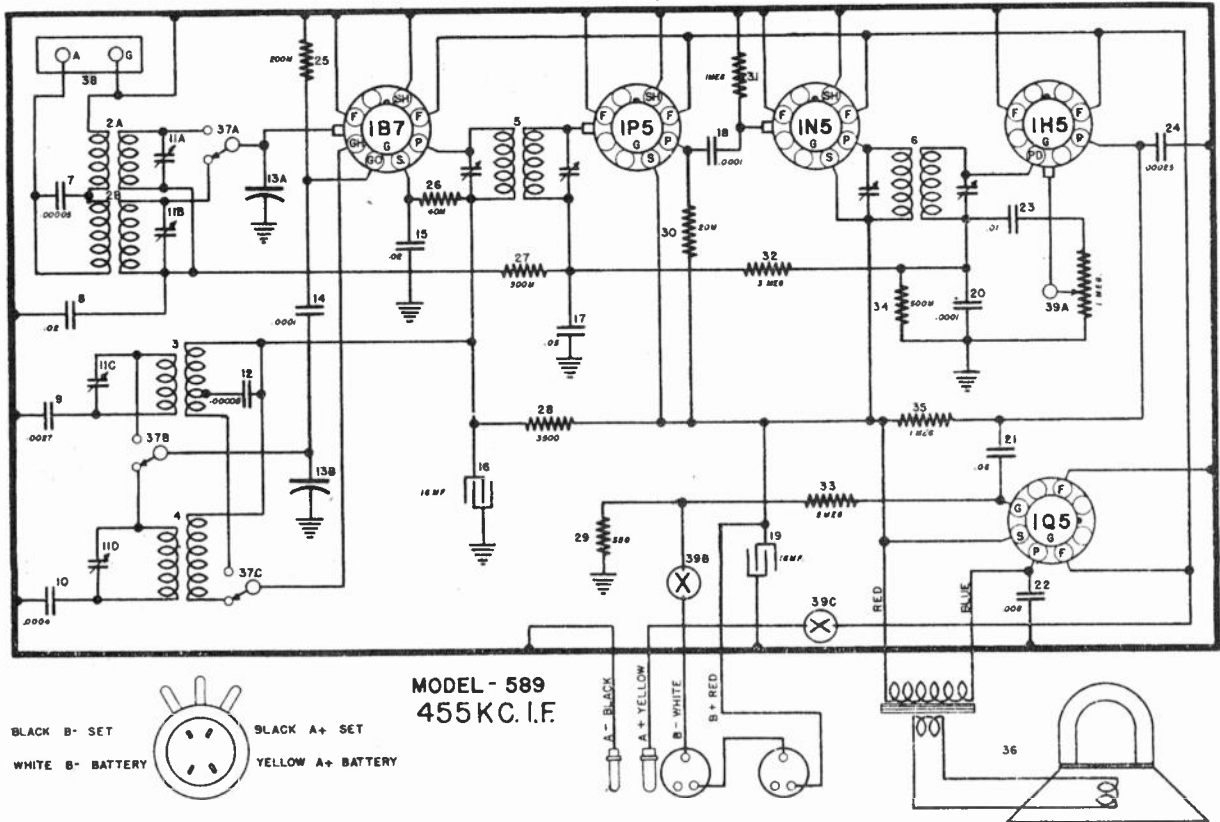


FIG. 1-A—WIRING DIAGRAM—MODEL 589

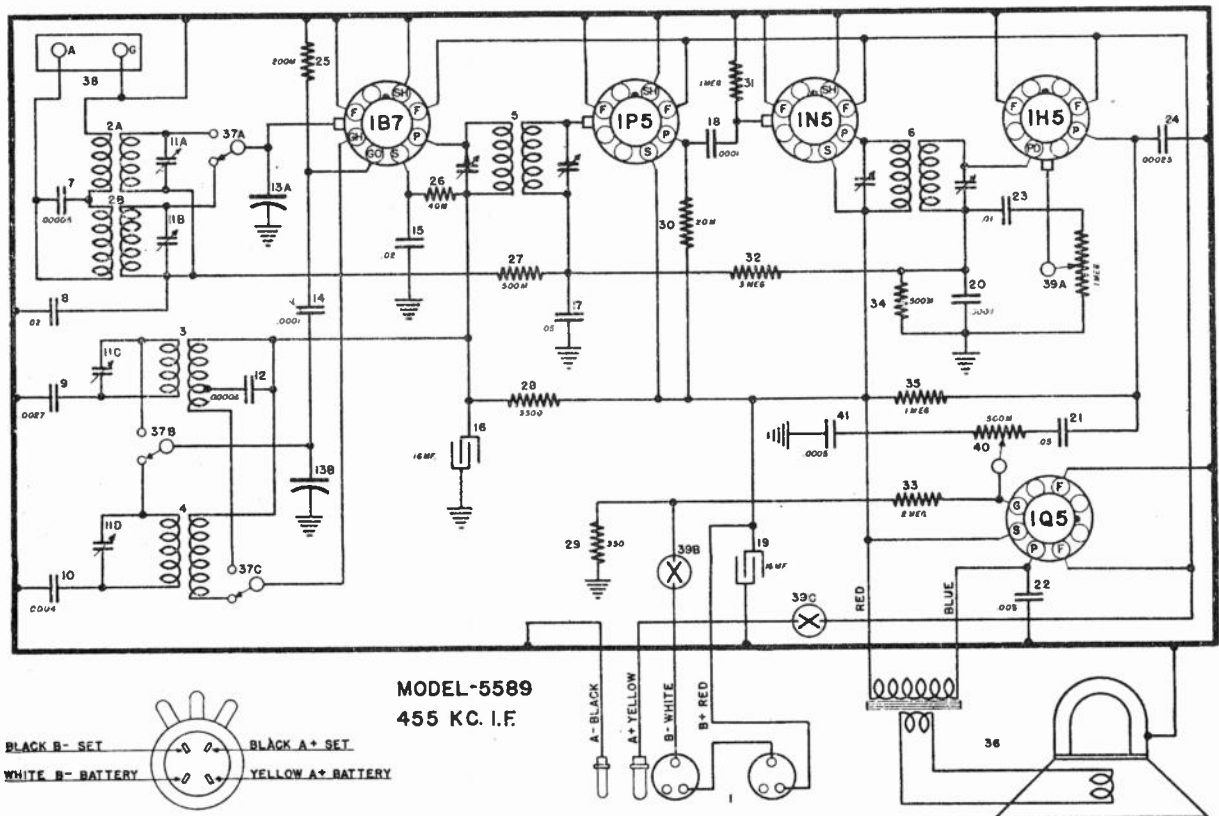


FIG. 1-B—WIRING DIAGRAM—MODEL 5589

**PARTS LIST — MODELS 589 And 5589**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48312	Battery Cable	MG19	—47860	L. H. Mtg. Bracket—P. B. Unit (589)
2	G202—32000	Antenna Coil Assy. A—Short Wave Coil B—Broadcast Coil		—48022	R. H. Mtg. Bracket—P. B. Unit (5589)
3	G205—32002	Short Wave Oscillator Coil		—48023	L. H. Mtg. Bracket—P. B. Unit (5589)
4	G204—32002	Broadcast Oscillator Coil		—45580	Rubber Grommet—P. B. Unit Mtg.
5	G194—32004	1st I-F. Assy.—455 Kc.		—45620	Headed Bushing—P. B. Unit Mtg.
6	G195—32004	2nd I-F. Assy.—455 Kc.		—6495	No. 8—32 x 7/16" Screw—P. B. Unit Mtg.
7	G5—34002	Condenser, .00005 Mf. Mica		—47875	<b>DIAL PARTS—MODEL 589</b>
8	—28621	Condenser, .02 Mf. 200 V.		—47930	Bracket—Dial Background (FS-71)
9	G11—34005	Condenser, .0027 Mf. Mica	MG20	—47860	Pointer—Dial Hand (FS-77)
10	G18—34002	Condenser, .0004 Mf. Mica		—43542	Idler Pulley and Bracket Assy.
11	—41274	Condenser, 4 Sect. Shunt Trim. Assy.		—47969	Bracket—Drive Shaft Mtg.
12	G5—34002	Condenser, .00005 Mf. Mica	G20	—41582	Drive Shaft and Pulley Assy.
13	G80—33001	Condenser, Var. Tuning Gang		—50590	Drive Cord (42 3/4")
14	G2—34002	Condenser, .0001 Mf. Mica	G30	—41582	Spring—Drive Cord Tension
15	—28621	Condenser, .02 Mf. 200 V.		—46848	Guide Cord (9 1/2") Pointer
16	—48122	Condenser, 16 Mf. 250 V.	G1	—48424	Spring—Guide Cord Tension
17	—35936	Condenser, .05 Mf. 200 V.		—48409	Light Guard—Felt and Bracket Assy.
18	G2—34002	Condenser, .0001 Mf. Mica		—48113	Light Guard—Felt only
19	—48122	Condenser, 16 Mf. 250 V.	MG32	—47861	Glass Dial Face
20	G2—34002	Condenser, .0001 Mf. Mica		—48018	Escutcheon Assy.
21	—32380	Condenser, .05 Mf. 200 V.		—48167	Glass Reflector—Call Letter Tab
22	—28619	Condenser, .006 Mf. 200 V. (589)	S	—80	Escutcheon Mounting Bracket
22	—25435	Condenser, .003 Mf. 400 V. (5589)		—48168	No. 4 x 3/8" Screw—Escutcheon Brkt.
23	—30323	Condenser, .01 Mf. 200 V.		—48341	Mtg. (FS-58)
24	G1—34002	Condenser, .00025 Mf. Mica			No. 3—56 x 1 1/16" Screw—Escutcheon
25	—34018	Resistor, 200,000 Ohms 1/2 W.			Mtg. to Brkt. (FS-58)
26	—21453	Resistor, 40,000 Ohms 1/2 W.			Push Button
27	—23785	Resistor, 500,000 Ohms 1/2 W.	MG12	—47980	<b>DIAL PARTS—MODEL 5589</b>
28	—30137	Resistor, 3,500 Ohms 1/2 W.		—47994	Support Bracket (FS-71) Dial Glass
29	—28589	Resistor, 350 Ohms 1/2 W.		—48187	Glass Dial
30	—22196	Resistor, 20,000 Ohms 1/2 W.		—46020	R. H. Clip—Dial Glass Mtg.
31	—21454	Resistor, 1 Megohm 1/2 W.		—48084	L. H. Clip—Dial Glass Mtg.
32	—26577	Resistor, 3 Megohms 1/2 W.		—48032	Rubber Cushion—Dial Glass (2)
33	—34883	Resistor, 2 Megohms 1/2 W.	G12	—43564	Pointer—Dial Hand
34	—23785	Resistor, 500,000 Ohms 1/2 W.	MG20	—47860	Pulley and Hub Assy.
35	—21454	Resistor, 1 Megohm 1/2 W.		—43542	Idler Pulley and Bracket Assy.
36	392-PL-9"B"	Speaker, Mfgr. Spec. No. 503-PRW-1 (589)		—46056	Bracket—Drive Shaft Mtg.
	—48336	Output Transformer	G22	—41582	Drive Shaft and Pulley Assy.
	492-PJ-3"R"	Speaker, Mfgr. Spec. No. F-5733 (5589)		—50590	Drive Cord (43 3/4")
	—48619	V. C. and Cone Assy. (5589)	G31	—41582	Spring—Drive Cord Tension
	—43978	Cardboard Ring—Cone Mtg. (5589)		—46848	Guide Cord (14") Pointer
	—48620	Output Transformer (5589)		—46290	Spring—Guide Cord Tension
37	—48333	Band Change Switch		—48043	Clamp—Drive Cord
	—49009	Bracket—Band Change Switch Mtg.		—48539	Escutcheon—Dial Opening
38	G1—26719	A. and G. Terminals		—48431	No. 3 x 1/4" Phillips Hd. Screw—
39	—48328	Vol. Cont. and Switch (1 Meg.) (589)			Escutcheon Mtg. (FS-58)
	—49336	Vol. Cont. and Switch (1 Meg.) (5589)			Push Button
40	—49337	Tone Control (1/2 Meg.) (5589)			<b>MISCELLANEOUS PARTS</b>
41	G3—34002	Condenser, .0005 Mf. Mica (5589)		9GC	Cabinet—Wood (B-589-A)
	—46729	Tube Socket—8 Prong—No Marking		—48142	Shipping Carton—9GC Cabinet
	—51208	Tube Shield		—48165	Knob (2) (589)
	—48315	Clip—Tube Shield Ground		—47603	Knob (1) (B. S.) (589)
	—50325	"C" Washer—Extension Shaft Retaining (5589 only)		—48900	No. 8—32 x 3/4" Screw—Chassis Mtg. (589)
	—48026	Felt Spacer—Extension Shaft (5589 only)		—30409	Washer—Chassis Mtg. (589)
	G2—44470	Toggle Arm—Band Switch Shaft (5589 only)		—48734	Station Call Sheet (589)
	G6—44470	Toggle Arm—Extension Shaft (5589 only)		—48747	Celluloid Cover—Call Tab (589)
	—47999	Extension Shaft—Band Switch (5589 only)	MG31	—48272	Instruction Booklet (589)
G40	—45683	P. B. Tuning Unit Assy.—With Gang		9ER	Instruction Envelope Assy. (589)
	—49691	P. B. Tuning Unit Assy.—Without Gang		—47831	Cabinet (B-5589-M)
G56	—45683	Riveted Key Assy.		—47960	Shipping Carton—9ER Cabinet
	—50542	Lock Clip—Toggle		—45579	Knob (4) (5589)
	—45717	Screw—Station Setting		—48899	Washer—Chassis Mounting (5589)
	—50607	Spring—Key Return		—48750	No. 8—32 x 7/8" Screw—Chassis Mtg. (5589)
G31	—47880	Rocker Bar and Gear Assy.	MG31	—48274	Station Call Letter Sheet (5589)
	—50561	No. 6—40 x 1/8" Screw—Rocker Bar Bearing		—49284	Celluloid Cover—Call Tab (5589)
	—51146	Bronze Spring—Rocker Bar Bearing		—49070	Instruction Booklet (5589)
	—50547	Key Plate—Rear Slide Adj.			Instruction Envelope Assy. (5589)
	—50588	Adjusting Clip—Key (Heart Shaped)			Short Wave Station Chart
	—45646	Adjusting Clip—Key (Hooked End)			"A" and "B" Battery Pack No. CR-28
MG18	—47680	R. H. Mtg. Bracket—P. B. Unit (589)			

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Ga	Go
6A8G	Oscillator-Modulator	6.3	115	65	—	3.8	115	Neg.
6K7G	I-F Amplifier	6.3	115	115	3.8	3.8	—	—
6Q7G	Det and A-F Amplifier	6.3	25	—	—	1.2	—	—
25A6G	Output	25.0	115	115	—	0	—	—
25Z6G	Rectifier	25.0	—	—	—	115	—	—

Power output approximately 1.8 watts.  
 Power consumption approximately 50 watts.  
 Voltage drop across speaker field 125 volts.  
 All readings taken on 117.5 volt A. C. power supply.  
 All readings except filaments will be approximately 10% lower on 117.5 volts D. C.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- (c) Set the signal generator to 450 kilocycles.

- (d) Adjust the 2nd I-F trimmer condensers located on the rear of the receiver chassis for maximum reading on the output meter.
- (e) Adjust the 1st I-F trimmer condensers located on the rear of the receiver chassis for maximum reading on the output meter.
- (f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.
- (e) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.
- (f) Readjust the station selector slightly for maximum output.
- (g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784B	Flexible Antenna		W —41014B	Brkt. Dial Mtg., R. H.
2AB	W —4099B	Dial Light Bulb		W —41013B	Brkt. Dial Mtg., L. H.
	G6 —27134	Dial Light Socket		W —40486	Screw—Pointer Disc Mtg.
3	G116—32000	Arit. Coil	20	W —35467	Resistor 220 Ohm ½W. Flexible
4	G116—32002	Osc. Coil	21	—36760	Resistor 20,000 Ohm ¼W.
5	G104—32004	1st I-F Coil (only)	22	—36318	Resistor 15,000 Ohm ¼W.
	W —21541C	Ring—Coil Retaining	23AB	—35601	Resistor 300,000 Ohm ¼W.
	W —26891	Insulating Washer (Coil)	24	—36322	Resistor 500,000 Ohm ¼W.
	W —25024B	Shield—Coil	25AB	—35602	Resistor 1 Megohm ¼W.
6		Same as Item No. 5	26	W —41000	Resistor 44 Ohm C. T. Candohm
7	G4 —28859	Filter Choke	27	247BI.9 "B"	Speaker
8AB } CD }	W —36541	Condenser .02 Mf. 160 V.		—42928	V. C. and Cone Assembly above Spk.
				—42929	Output Trans. above Spk.
9	W —24049C	Condenser .1 Mf. 200 V.	28Z		{Vol. Cont. 500,000 Ohm
10	W —29910A	Condenser .25 Mf. 200 V.	28Y	—42446	{Line Switch
11	W —32780B	Condenser .05 Mf. 400 V.	29	B —40999	Power Cord and Plug. 100 Ohm 12W.
12	W —35936	Condenser .05 Mf. 200 V.	30	G156—36400	Socket—Type 6A8
13	W —23191A	Condenser .01 Mf. 200 V.	31	G151—36400	Socket—Type 6K7
14	G3 —34002	Condenser .0005 Mf. 200 V.	32	G160—36400	Socket—Type 6Q7
15	W —28620	Condenser .003 Mf. 200 V.	33	G161—36400	Socket—Type 25A6
16AB	G1 —34002	Condenser .00025 Mf. 200 V.	34	G162—36400	Socket—Type 25Z6
17AB	W —42439	Condenser 30 Mf. 150 V.		W —27981A	Tube Shield
18AB	W —37075	I-F Trimmer Cond. (Dual Unit)	35	W —41958	Condenser 50 Mf. 25 V.
19	G22 —33001	2 Gang Var. Tuning Cond.	36	—35928	Resistor 60,000 Ohm ¼W.
	W —40633B	Bearing Support Bracket		B —40590B	Escutcheon
	W —41112B	Sprocket (Small) Driver		—42376	Screws, Escutcheon Mtg.
	B —41113	Sprocket (Large) Driver		W —41019A	Knob
	W —41227	Chain—Drive		W —35863	Grille Cloth
	W —41610	Spring—Take Up		—6AD	Cabinet
	W —42608	Dial (Calibrated) Glass			
	W —40632C	Pointer Disc			

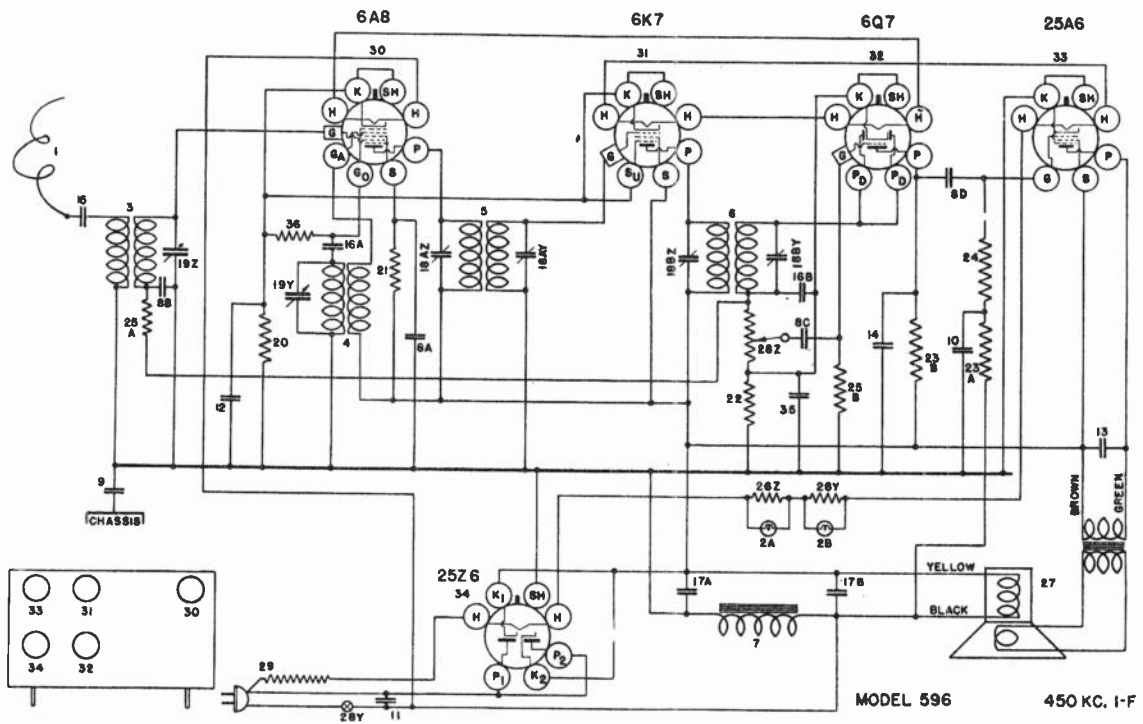


FIG. 1—WIRING DIAGRAM—MODEL 596

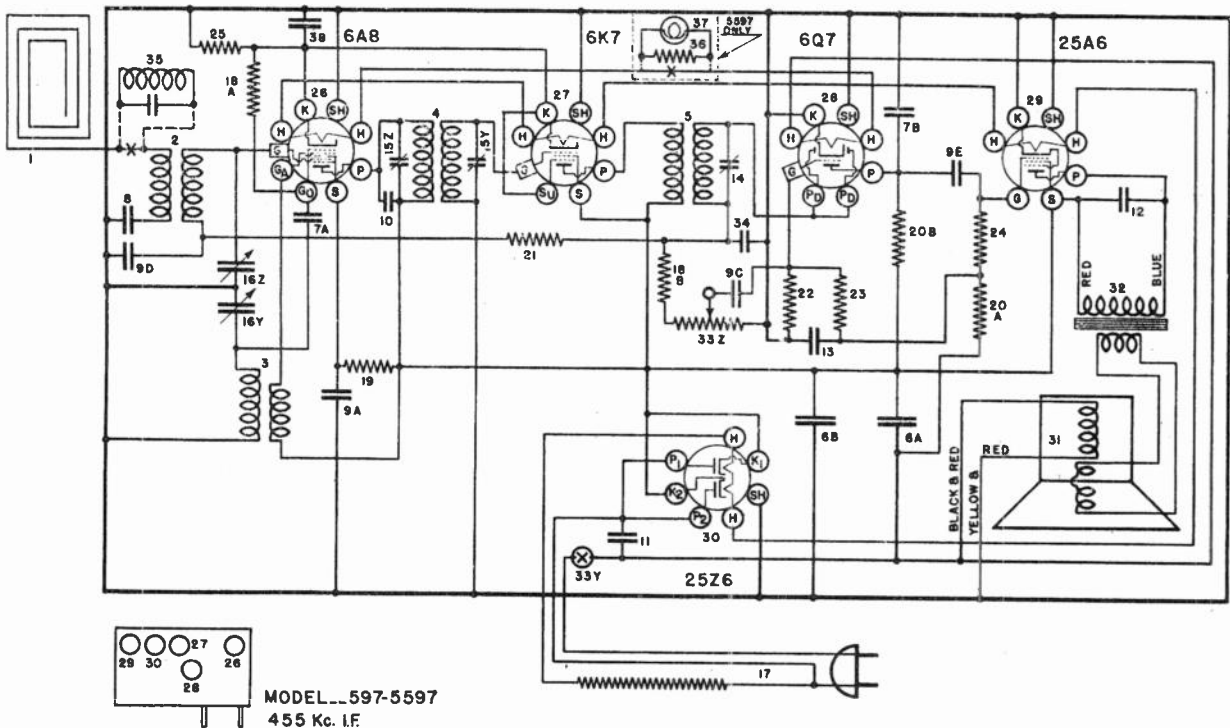


FIG. 1—WIRING DIAGRAM—MODEL 597 and 5597

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8	Oscillator-Modulator	6.3	105	65	—	3	-10	105
6K7	I-F Amplifier	6.3	105	105	0	3	—	—
6Q7	Det, AVC, A-F Amplifier	6.3	50	—	—	0	—	—
25A6	Output	25.1	100	105	—	0	—	—
25Z6	Rectifier	25.1	117.5	—	—	110	—	—

Tuning The I-F Amplifier To 455 Kilocycles.

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 14, located beneath the edge of speaker field, for maximum

reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on back flange of the chassis, for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

Aligning The R-F Amplifier.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Note: Do not readjust the "OSC" trimmer.

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —31765C	Ant. Roll	20A	—21455	Resistor, 300,000 Ohm 1/3 W. Carb.
2	G163—32000	Ant. Coil	20B		See Item 39
3	G155—32002	Osc. Coil	21	—26577	Resistor, 3. Megohm 1/3 W. Carb.
4	G168—32004	1st I-F	22	—21454	Resistor, 1. Megohm 1/3 W. Carb.
5	G167—32004	2nd I-F	23	—37584	Resistor, 11. Megohm 1/3 W. Carb.
6A	W —44935	Condenser, 30 Mf. 125 V.	24	—34020	Resistor, 250,000 Ohm 1/3 W. Carb.
6B	W —44935	Condenser, 30 Mf. 125 V.	25	W —25357	Resistor, 75 Ohm 3/4 W. Flex.
7A	G 2—34002	Condenser, .0001 Mf. Molded	26	G156—36400	Socket Type 6A8
7B	G 2—34002	Condenser, .0001 Mf. Molded	27	G151—36400	Socket Type 6K7
8	W —26571	Condenser, .0005 Mf. 200 V.	28	G160—36400	Socket Type 6Q7
9A	W —28621	Condenser, .02 Mf. 200 V.	29	G161—36400	Socket Type 25A6
9C	W —28621	Condenser, .02 Mf. 200 V.	30	G162—36400	Socket Type 25Z6
9D	W —28621	Condenser, .02 Mf. 200 V.	31	—270BL6"O"	Speaker Spec. No. 3-101
9E	W —28621	Condenser, .02 Mf. 200 V.		—45174	Cone & V.C. Assy. (For Above
10	G 5—34002	Condenser, .00005 Mf. Molded		—45175	Ring (Cone Mtg.) (Speaker
11	W —23615	Condenser, .05 Mf. 400 V.	32	G 21—29535	Output Transformer
12	W —28619	Condenser, .006 Mf. 200 V.	33	—44920A	Vol. Cont. (1 Meg.), & Line
13	W —24049C	Condenser, .1 Mf. 200 V.			Switch
14	W —44142	Condenser, 2nd I-F Plate Trimmer.	34	G 1—34002	Condenser .00025 Mf. Molded
15	W —44882	Condenser, 1st I-F Trimmer Assy.	35	G182—32004	Wave Trap
16	G 45—33001	2 Sect. Var. Tuning Cond.	36	W —44396	Resistor 40 Ohm 3 1/2 W. Flex 5597
	B —44801A	Dial Face (Glass)	37	W —44337	Bulb 6-8 V. Dial Light 5597
	W —50173A	Pointer		G 6—27134	Dial Light Socket Assy. 5597
	W —2045	Washer (Pointer Lock)		W —45313	D. L. Socket Mtg. Brkt. 5597
	W —40486	Screw (Pointer Mtg.)	38	W —27216	Condenser .05 Mf. 200 V.
	W —44810C	Dial Support		—7F	Cabinet (Black) 597
	W —44811	Ring (Dial Glass Support) 597		W —44934	Knob—Black 597
	W —45342	Ring (Dial Glass Support) 5597		G 1—45281	Grille & Baffle Assy. 597
	W —44809C	Drive Shaft		—7FB	Cabinet (Brown) 597
	W —44808A	Bracket Drive Shaft		W —45242	Knob—Brown 597
	—41582	Drive Cord		G 1—45281	Grille & Baffle Assy. 597
	W —43561	Spring—Cord Tension		—7FA	Cabinet (Ivory) 5597
	W —43549	Ring—Drive Shaft Retaining		W —45324	Knob 5597
17	B —44917B	Power Cord & Plug (160 Ohm) 597 Only		G 1—45281	Grille & Baffle Assy. 5597
	B —45491B	Power Cord & Plug (140 Ohm) 5597 Only		W —45282	Shield—Heat Reflector
18A	—35928	Resistor, 60,000 Ohm 1/4 W. Ins.	39	B —45505	Back—7FB Cab.
18B	—35928	Resistor, 60,000 Ohm 1/4 W. Ins.		B —44885A	Back—7F Cab.
19	—22831	Resistor, 15,000 Ohm 1/3 W. Ins.		B —45506	Back—7FA Cab.
				—23403	Resistor, 150,000 Ohm 1/3 W. Carb.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6K7-GT	R-F Amplifier	6.3	110	110	2.5-25	2.5-25	---
6J7-GT	Detector	6.3	20	7	6	---	---
25L6-GT	Output	25.1	98	110	6	---	---
25Z6-GT	Rectifier	25.1	117 A.C.	---	135	---	---
W-46416	Ballast	Approx. 54.7 Drop A.C.					

CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-GT Output tube. Be sure the output meter is protected from DC by connecting a condenser (.1 mfd. or larger --NOT electrolytic) in series with one of the leads.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an AC operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead

on the receiver. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc. signal is heard. The gang does not have to tune through this signal.

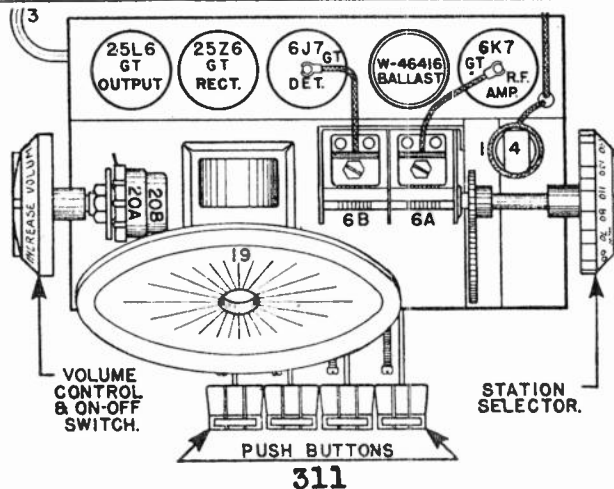
(e) Set the generator to 1400 Kc.

(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

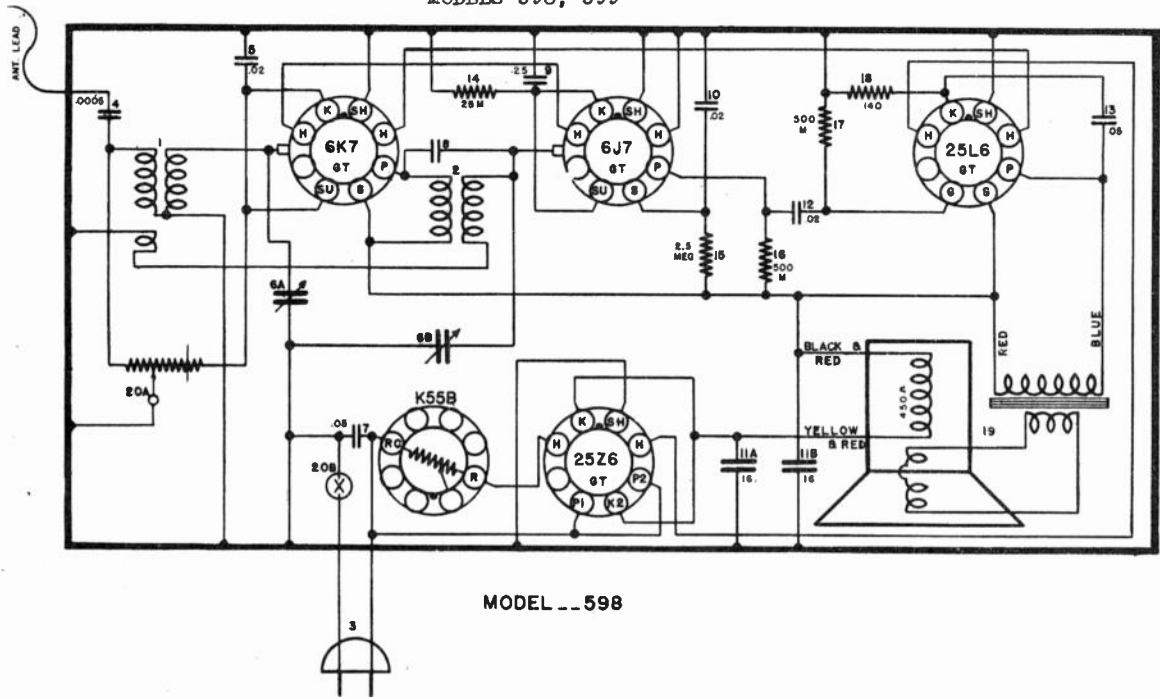
NOTE: Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G187-32000	Antenna Coil	W	-50542C	Key Clip (Lock Clamp)
2	G107-32001	R. F. Coil		-15717	Adjusting Screw
3	B	Power Cord and Plug	G27	-45683	Rocker Plate Assembly
4	G3	Condenser, .0005 Mf. Molded	W	-50561	1/8" No. 6 x 40 Screw (Rocker Plate Bearing)
5	W	Condenser, .02 Mf. 160 V. Paper			
6A } 6B }	G63	Variable Condenser (Antenna Section R. F. Section)	W	-50517	Key Plate (Rear Guide)
	W	Variable Condenser Mounting Bracket	W	-50607C	Spring (Push Button Slide)
	W	---46660		-45553B	Push Button
	W	---45902		-46724	Dial Knob
7	W	Condenser, .05 Mf. 120 V. Paper		-45825A	Knob, V. C.
8	G3	Condenser Assembly		-50841	Call Letter Sheet
9	W	Condenser, .25 Mf. 160 V. Paper	W	-50551B	Celluloid Cover
10	W	Condenser, .02 Mf. 160 V. Paper		-46723	Instructions
11A } 11B }	W	Condenser, 16 Mf. 125 V. Elect.		-15818D	Cabinet (8BB) Brown
		Condenser, 16 Mf. 125 V. Elect.		-46881	Cabinet (8BD) Ivory
12	W	Condenser, .02 Mf. 160 V. Paper	W	-45853	Grille Cloth
13	W	Condenser, .05 Mf. 160 V. Paper	W	-45930C	Rubber Mounting Foot
14		Resistor, 25,000 Ohm 1/2 W. Carbon	W	-45931A	Mounting Screw and Foot
15		Resistor, 2 1/2 Megohm 1/2 W. Carbon	W	-45852A	Baffle Board
16		Resistor, 500,000 Ohm 1/2 W. Carbon		-45828C	Cabinet Back (8BB)
17		Resistor, 500,000 Ohm 1/2 W. Carbon		-45829C	Cabinet Back (8BD)
18	W	Resistor, 140 Ohm 1/2 W. Flex.		-46259	Cabinet Assembly Complete (8BB) Brown
19	281-BL-5-"H"	Speaker, Spec. S-5252-J-5		-46961	Cabinet Assembly Complete (8BD) Ivory
	W	Speaker Support Bracket	B	-46880	220 V. Power Cord 300 Ohm
	W	Ballast Tube			
20A } 20B }		Volume Control			
		Power Switch			
	W	Volume Control Bracket			
	W	---46729			
	G14	Socket, 8 Prong			
	G26	Push Button Unit Assembly			
		Key and Toggle Assembly			

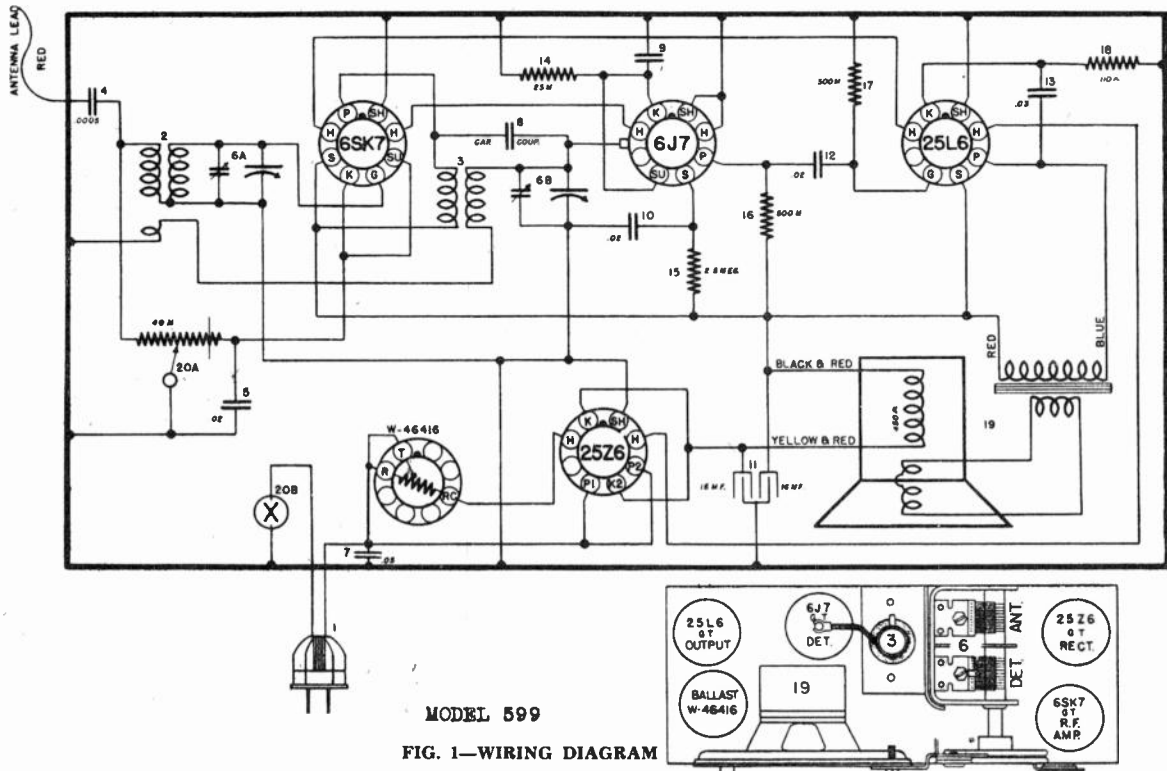


MODELS 598, 599



MODEL 598

FIG. 1—WIRING DIAGRAM—MODEL 598



MODEL 599

FIG. 1—WIRING DIAGRAM

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6 SK7	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6 J7GT	Detector	6.3	20	10	7	—	—
25 L6GT	Output	25	85	98	6	—	—
25 Z6GT	Rectifier	25	—	—	126	—	—
W-46416	Ballast	55 Volts A. C.					

Power output approximately 2 watts.

Drop across field 28 volts.

Power consumption at 117.5 volts line 45 watts (A.C.).

All readings except filaments will be approximately 10% lower on 117.5 D. C.

CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT Output tube. Be sure the output meter is protected from D.C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A.C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead on the receiver. The ground lead of the generator should be connected through a .001 mf. condenser to

the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 kc. signal is heard. The gang does not have to tune through this signal.

(e) Set the generator to 1400 kc.

(f) Tune the set to the 1400 kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

NOTE: Always use the lowest signal generator output that will give a reasonable indication on the output meter.

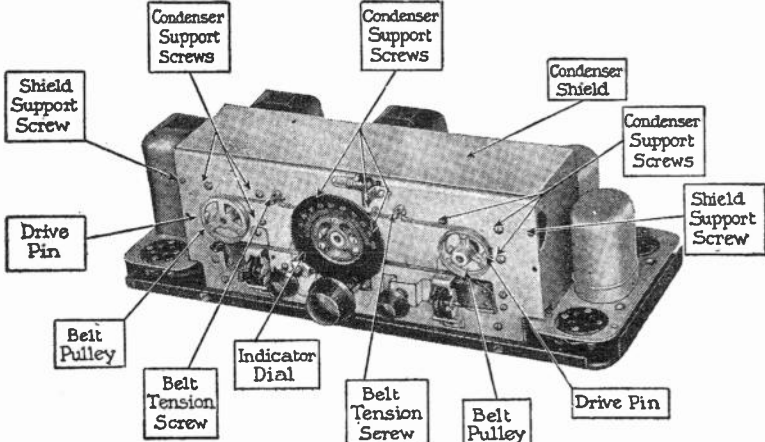
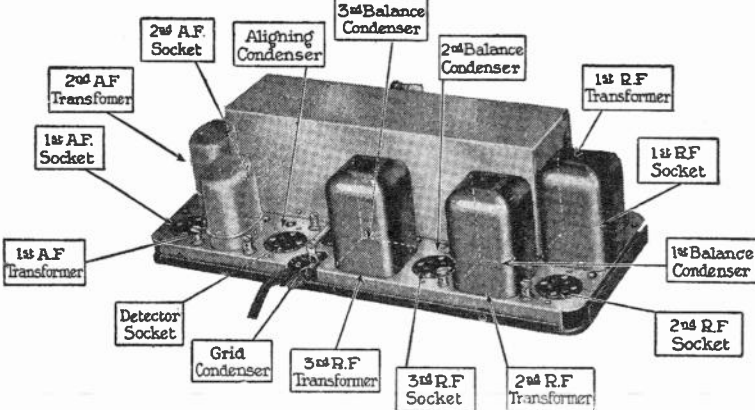
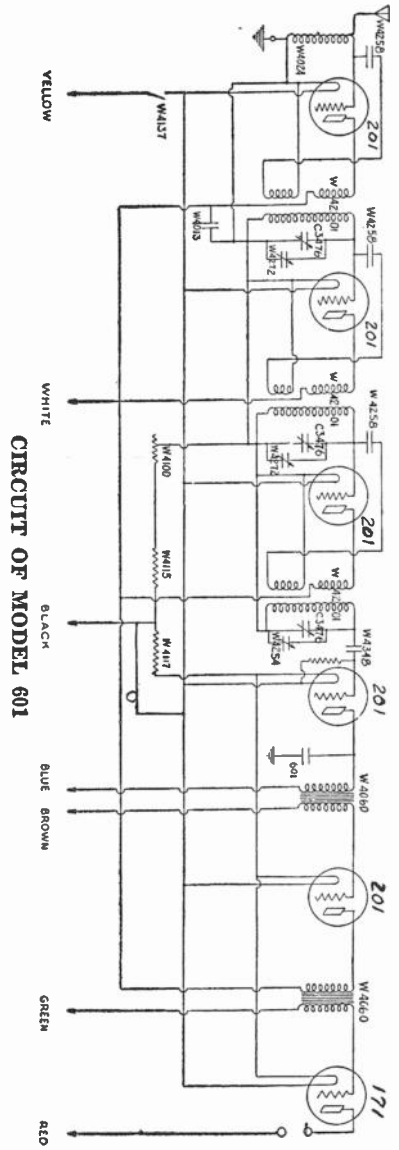
Keep the two grid leads as far as possible from each other.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B —45784	Power Cable and Plug	18	W —45965	Resistor, 110 Ohms ½W. Flex.
2	G199—32000	Antenna Coil	19	284BL3"K"	Speaker, Spec. No. 41-W-5
3	G109—32001	R. F. Coil		B —128	No. 6—32 x ¼" Bind. Hd. Mach. Screw (Speaker)
4	G3 —34002	Condenser, .0005 Mf. Molded		—48345	Voice Coil and Cone Assembly
5	W —45780B	Condenser, .02 Mf. 160 V. Paper		—48355	Field Coil, 450 Ohms
6A } 6B }	G78 —33001	2 Sect. Gang Condenser {Ant. Sect. R. F. Sect.		—48365	Output Transformer
	G17 —43564	Pulley and Hub Assembly		—48366	Cardboard Ring
	MG9—47825	Dial Back Assembly	20A } 20B }	W —46729A	8 Prong Socket (No Marking)
	W —23877	Set Screw (Pulley and Hub Assembly)		—48320	Volume Control, 40,000 Ohms
	G18 —41582	Drive Cord (27 Inches Long)		W —46662	Power Switch
	—47559A	Drive Shaft		W —46416	¾" Pal Nut (Volume Control)
	W —47557A	Drive Shaft Bracket		W —46416	Ballast Tube
	—6876	No. 6—32 x ¼" W. H. Mach. Screw (Drive Shaft Bracket)		—47833	Dial Glass
	W —46087	Drive Spring		W —46921	Speed Nut (2 Req.) (Dial Glass)
	W —46290	Drive Cord Clamp		9EA	Cabinet, Mottled Brown
	G26 —41582	Guide Cord (8 Inches Long)		9EB	Cabinet, Ivory
	W —46848	Guide Cord Spring		9EC	Cabinet, Red
	W —47582	Dial Pointer		9EBA	Cabinet, Tan
	B —128	No. 6—32 x ¼" Bind. Hd. Mach. Screw (Dial Back) (2 Req.)		9EAA	Cabinet, Blue
	N —5062	No. 6—32 Hex. Nut (Dial Back) (1 Req.)		—47598A	9EA Cabinet Back
	—2118	No. 6 Int. Shkp. Washer (Dial Back) (1 Req.)		—47600A	9EB, 9EC, 9EBA, 9EAA Cabinet Back
7	W —45782B	Condenser, .05 Mf. 120 V. Paper		—47572	Carton
8	G3 —50640	Condenser Capacity Coupling (Twisted Wire)		B —130	No. 6—32 x ¾" Oval Hd. Screw (2 Req.) (Cabinet Back)
9	W —50105	Condenser, .1 Mf. 160 V. Paper		G172—34403	Antenna Lead
10	W —45780B	Condenser, .02 Mf. 160 V. Paper		—46880	Resistance Cable (For 220 V. Operation)
11	W —46398	Condenser, 16.-16. Mf. 125 V. Elect.		—47608	Knob, 9E (2 Req.)
12	W —45780B	Condenser, .02 Mf. 160 V. Paper		—44934	Knob, 9EB, 9EC, 9EBA, 9EAA (2 Req.)
13	W —50065	Condenser, .03 Mf. 160 V. Paper		—47842	Instructions
14	—24990	Resistor, 25,000 Ohms ½W. Carb.			
15	—37583	Resistor, 2½ Megohms ½W. Carb.			
16	—23785	Resistor, 500,000 Ohms ½W. Carb.			
17	—23785	Resistor, 500,000 Ohms ½W. Carb.			



MODELS 601, 602



FRONT VIEW, MODEL 601 CHASSIS

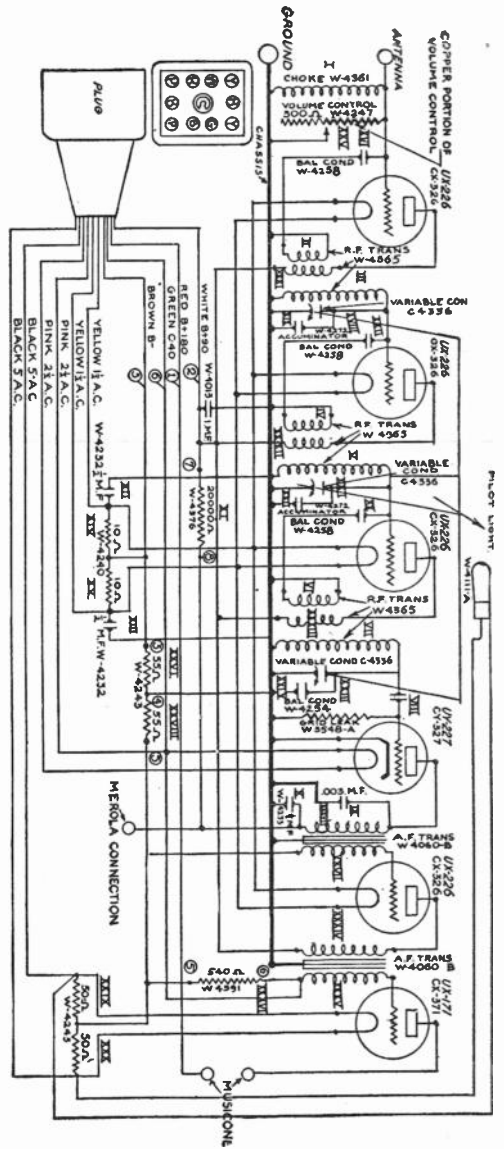


FIG 1 602 CIRCUIT

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	55	-.5	—	—
1A6	Osc.-Mod.	2.0	135	55	-.5	135	-5 to -10
34	I-F Amplifier	2.0	135	55	-.5	—	—
1B5	Diode Detector and A-F Amplifier	2.0	75	—	-.5	—	—
30	A-F Amplifier	2.0	135	—	-3.0	—	—
19	Double Tri. Output	2.0	135	—	-1.0	—	—

CONNECTING OUTPUT METER

Connect the two terminals of the output meter to the two plates of the 19 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control and the sensitivity control knobs to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Turn the band selector switch to the right (Broadcast Band).

(d) Adjust the station selector to 140 on the dial.

(e) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(f) Adjust the "R-F" trimmer condenser, No. 14Z, Fig. 2, for maximum output.

(g) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(h) Tune the station selector to the generator signal for maximum output.

(i) Repeat operations (f) and (g) for more accurate adjustments.

(j) Turn the band selector switch to the left (High Frequency Band).

(k) Set the signal generator to 3500 kilocycles.

(l) Adjust the station selector to 3.5 on the dial.

(m) Adjust the "R-F" trimmer condenser, No. 14Y, Fig. 2, for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G76—32000	Ant. Coil only		—37158	Dial Glass
	W —30802A	Coil Shield	16	C —37106B	Battery Cable
	W —30026A	Retaining Ring	17	W —31008	Speaker Cable
2	G48—32004	1st I. F. Assm.	18	—5370A	Resistor, 20,000 Ohm 1 W.
3	G69—32004	2nd I. F. Assm.	19	—21453	Resistor, 40,000 Ohm ¼ W.
4	G47—32002	Osc. Coil only	20	—21237A	Resistor, 60,000 Ohm ¼ W.
	W —25025B	Coil Shield	21A	—23403	Resistor, 150,000 Ohm ¼ W.
	W —25200	Coil Socket	21B	—23403	Resistor, 150,000 Ohm ¼ W.
	W —26891	Insulator Ring	22A	—23785	Resistor, 500,000 Ohm ¼ W.
	W —21541C	Retaining Ring	22B	—23785	Resistor, 500,000 Ohm ¼ W.
5	G53—32001	R. F. Coil only	23	—21454	Resistor 1. Megohm ¼ W.
	W —30802A	Coil Shield	24	—26577	Resistor, 3. Megohm ¼ W.
	W —30026A	Retaining Ring	25	W —21452	Resistor, 1100. Ohm Flex ¾ W.
6A	G2 —34002	Condenser, 0.0001 Mfd.	26	G9 —28807	Socket, 30
6B	G2 —34002	Condenser, 0.0001 Mfd.	27A	G31—28807	Socket, 34
7Z	W —26152A	Condenser, 0.0001 Mfd.	27B	G31—28807	Socket, 34
7Y		Condenser, 0.00015 Mfd.	28	G55—28807	Socket, 1A6
8Z		Condenser, 0.006 Mfd. 400 V.	29	G91—28807	Socket, 1B5
8Y		Condenser, 0.006 Mfd. 400 V.	30	G44—28807	Socket, 19
9A	W —30323	Condenser, 0.01 Mfd. 200 V.		W —26973B	Shield Base (1)
9B	W —30323	Condenser, 0.01 Mfd. 200 V.		W —26974B	Tube Shield (1)
10	W —28621	Condenser, 0.02 Mfd. 200 V.	31	—42MS4	Speaker, Console Model
11A	W —24049B	Condenser, 0.1 Mfd. 200 V.		—32MS4	Speaker, Table & Conolette
11B	W —24049B	Condenser, 0.1 Mfd. 200 V.	32Z		Band Change Switch
12	W —29910A	Condenser, 0.25 Mfd. 200 V.	32Y	—37108A	
13	W —30321A	Condenser, 1.0 Mfd. 160 V.	32X		
14Z	G22—33009	Condenser, B. C. Trimmer R. F.	33Z		
14Y		Condenser, H. F. Trimmer R. F.	33Y	W —37109A	Sensitivity Control
15Z			34	G1 —26719	On-Off Switch
15Y	G42—33002	3 Section Tuning Cond. Gang	35	G26—24628	Ant. Gnd. Terminal
15X			36	—37110A	Audio Transformer
	—36148B	Dial Drive Assm.	37	G3 —23300	Volume Control
	W —36160D	Dial Drive Mtg. Bracket		B —35917	Resistor, .372 Ohm (Air Cell)
	B —36151A	Dial Face		D —28	Escutcheon
	—37156	Pointer		W —37339	Escutcheon Screw (3)
	—37157	Pointer Screw		W —37341	Knob (Large) (2)
					Knob (Small) (2)

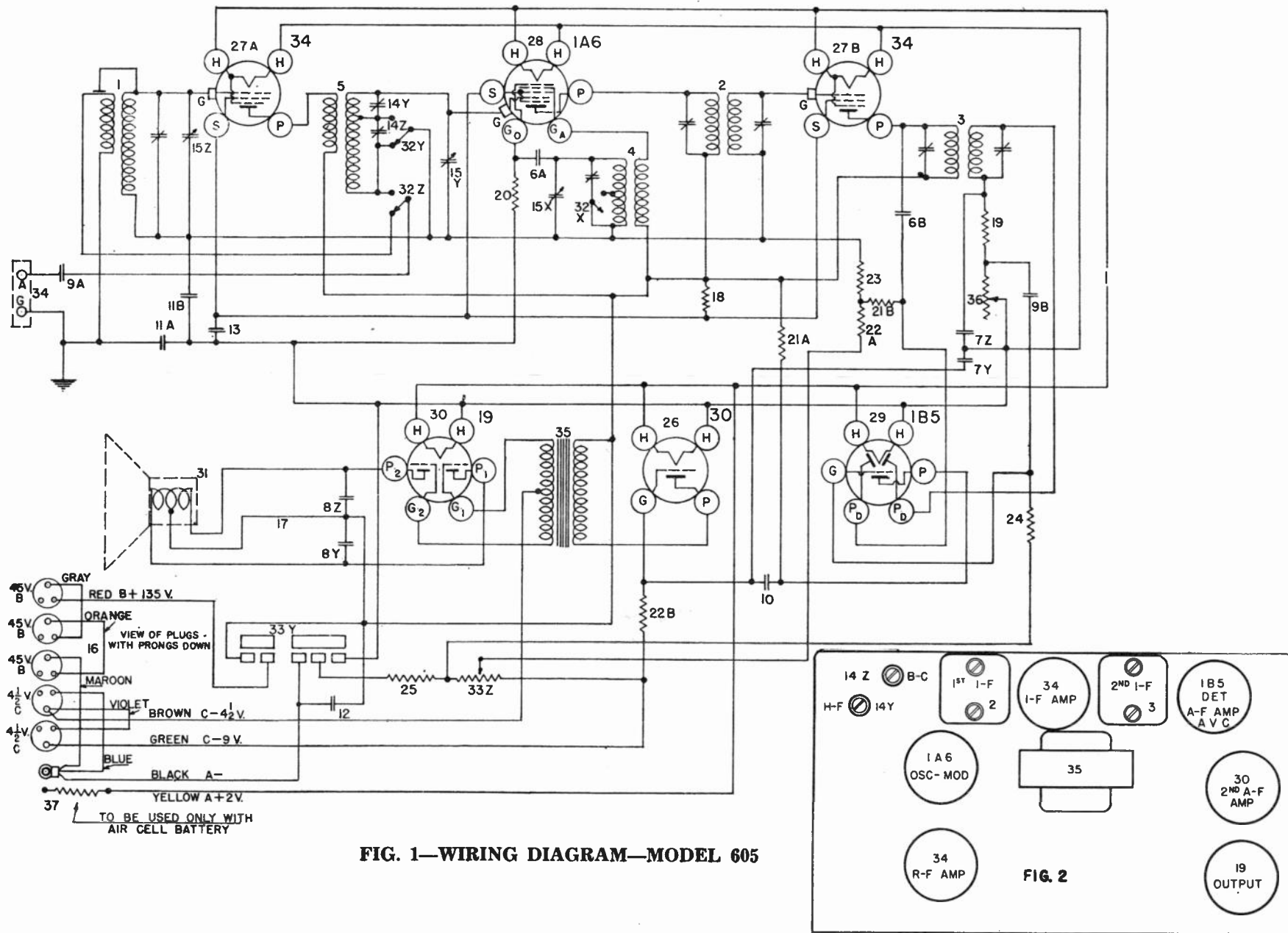
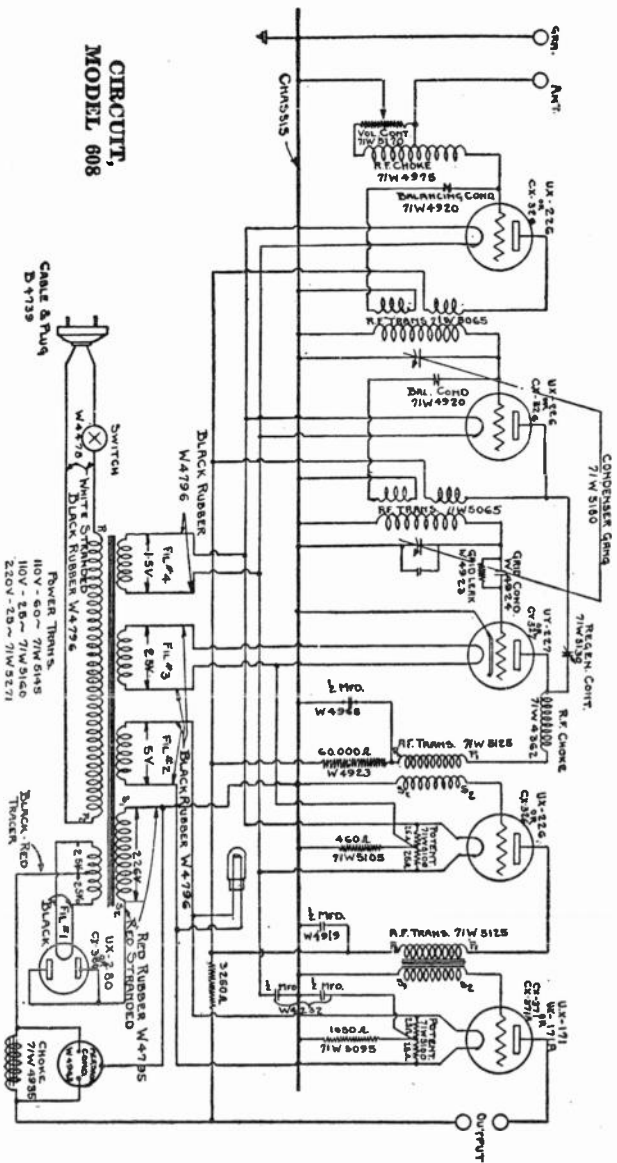


FIG. 1—WIRING DIAGRAM—MODEL 605

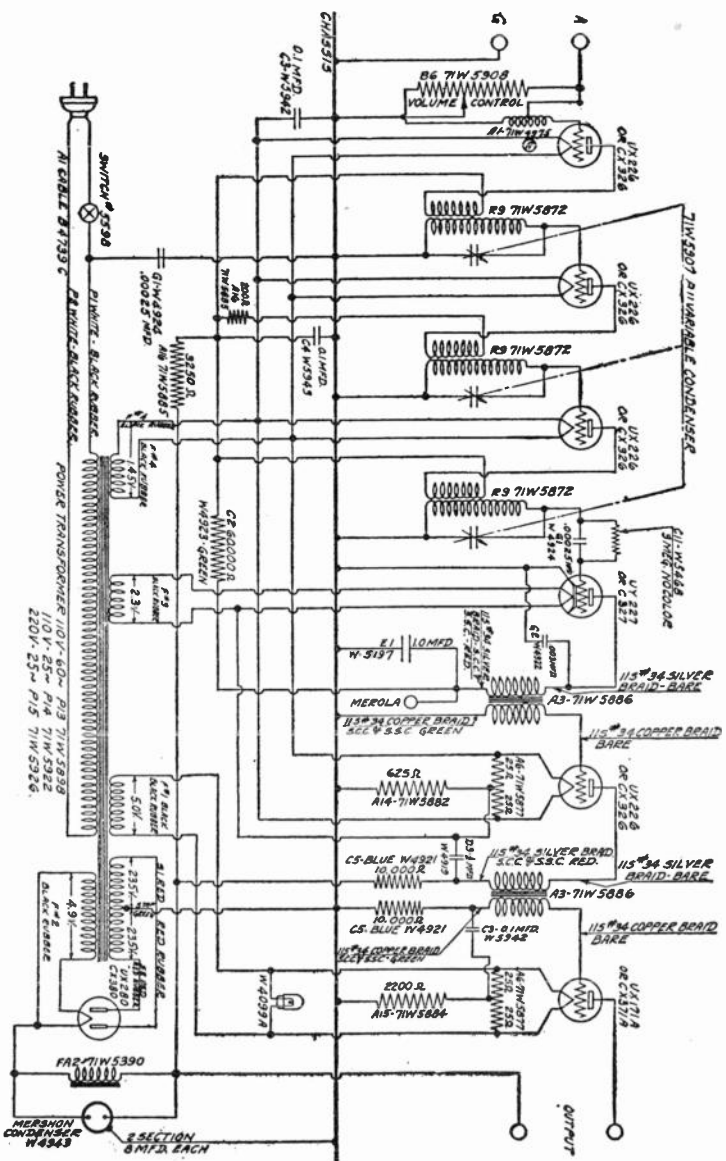
FIG. 2

# MODELS 608, 609, 610



CIRCUIT,  
MODEL 608

# MODELS 610, --609



## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6A7	Osc.Mod.	6.5	95	45	—	0	3.0	-5	80
6D6	1st I. F.	6.5	95	95	3.5	0	3.5	—	—
6D6	2nd I. F.	6.5	95	95	3.5	0	3.5	—	—
6B7	Det. & A. F.	6.5	25	20	—	—	1.5	—	—
43	Output	26.0	90	95	—	-20	0	—	—
25Z5	Rectifier	26.0	117.5 A. C.						

**Connecting Output Meter.**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 output tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filaments and the screen prong will be next to the plate prong. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Peaking I. F. Stages at 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**

(b) Turn the tuning condenser rotor plates until they are completely meshed.

(c) Turn the band selector switch to the short wave band (extreme left hand position).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust the trimmer for the 3rd I. F. transformer (Item No. 27, Fig 2) for maximum output.

(f) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output.

(g) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

**2. Peaking R. F. Circuits—Broadcast Band (540 to 1700 K. C.)**

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.

(b) Turn the tuning condenser rotor plates until they are **COMPLETELY OUT OF MESH.**

(c) Turn the band selector switch to the broadcast band (extreme right hand position).

(d) Set the signal generator at 1720 kilocycles.

(e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output. (Fig. 2).

(f) Set the signal generator at 1400 kilocycles.

(g) Tune-in the 1400 kilocycles signal with the station selector.

(h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.

(i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.

(j) Set the signal generator to 600 kilocycles.

(k) Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

(l) Adjust the oscillator series trimmer, (Fig. 2) while rocking the condenser gang plates back and forth slightly, until no further increase in output can be obtained.

**3. Peaking R. F. Circuits—Police Band (1650 to 4750 K. C.)**

(a) Turn the band selector switch to the police band (middle position).

(b) Set the signal generator to 4000 kilocycles. (4.0 megacycles).

(c) Turn the station selector to 4 on the police band.

(d) Adjust the oscillator parallel trimmer (P. Band) for maximum output.

(e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

**4. Peaking R. F. Circuits—Short Wave Band (5.3 to 15 Meg.)**

(a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.

(b) Turn the band selector switch to the short wave band (left hand position).

(c) Set the signal generator to 15 megacycles.

(d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.

(e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.

(f) Turn the station selector to 15 on the dial (S-W Band).

(g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency.

NOTE: Check on the adjustment of the S-W Band oscillator parallel trimmer as follows:

1. Increase the signal generator output not more than ten times.

2. Try to tune-in the 15 megacycles signal with the station selector at approximately 14 on the dial.

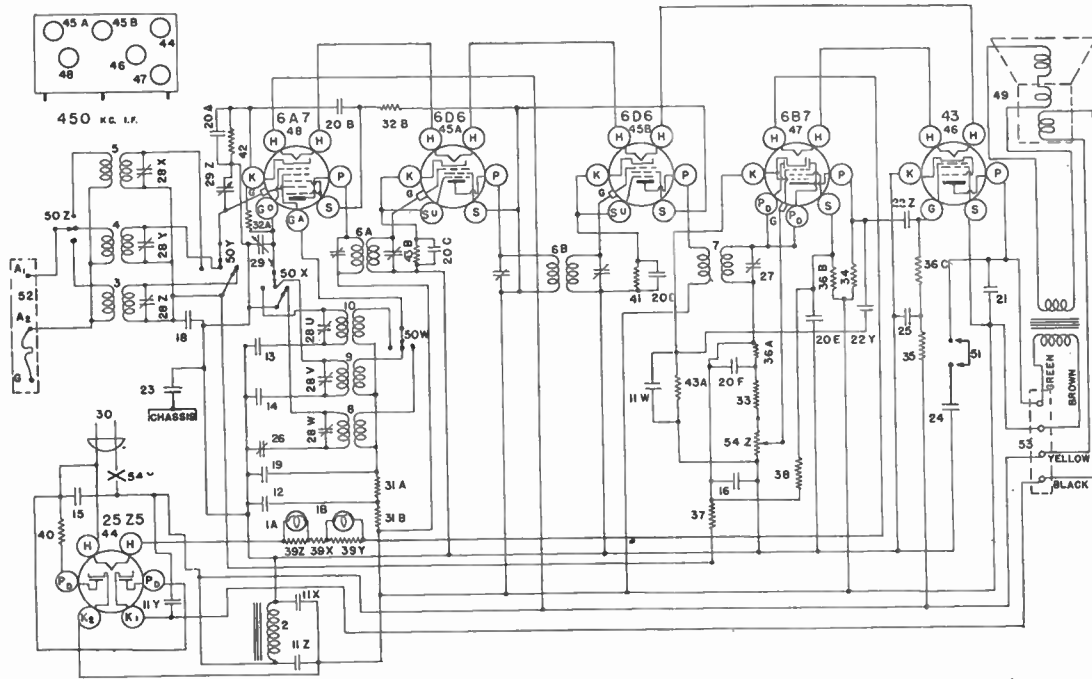
3. If the 15 megacycle signal can be heard at approximately 14 and 15 both on the dial the oscillator parallel trimmer has been aligned on the correct frequency. It should be noted, however, that the signal tuned in at 15 on the dial should be much stronger than the signal heard at 14. If this condition is not found it will be necessary to repeat operation (g).

(h) Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.

(i) Adjust the antenna parallel trimmer (S-W Band) for maximum output, then retune the station selector for maximum output.

(j) Repeat the two operations in (i) as many times as necessary to obtain the maximum output.

MODEL 615



Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4-27134	Dial Light Socket	B	-33906A	Cable & Plug (Power Supply)
1B	G4-27134	Dial Light Socket	31A	-31094	Resistor, 4,500 Ohms
2	G3-28859	Choke, 9 Henry	31B	-31094	Resistor, 4,500 Ohms
3	G39-32000	Ant. Coil B. C. Band	32A	-21453	Resistor, 40,000 Ohms
4	G43-32000	Ant. Coil P. Band	32B	-21453	Resistor, 40,000 Ohms
5	G56-32000	Ant. Coil S. W. Band	33	-21237A	Resistor, 60,000 Ohms
6A	G44-34004	1st I. F. Trans.	34	-23403	Resistor, 150,000 Ohms
6B	G13-32004	2nd I. F. Trans.	35	-21455	Resistor, 300,000 Ohms
7	G34-32004	3rd I. F. Trans.	36A	-23785	Resistor, 500,000 Ohms
8	G34-32002	Osc. Coil B. C. Band	36B	-23785	Resistor, 500,000 Ohms
9	G35-32002	Osc. Coil P. Band	36C	-23785	Resistor, 500,000 Ohms
10	G32-32002	Osc. Coil S. W. Band	37	-21454	Resistor, 1 Megohm
11Z		Condenser, 25 Mfd. 125 Volt	38	-33490	Resistor, 10 Megohm
11Y	W-31992	Condenser, 8 Mfd. 125 Volt	39Z		Resistor, 26.7 Ohms
11X		Condenser, 16 Mfd. 100 Volt	39Y	W-35979	Resistor, 26.7 Ohms
11W		Condenser, 10 Mfd. 25 Volt	39X		Resistor, 80 Ohms
12	W-35980	Condenser, 5 Mfd. 75 Volt	40	W-24537	Resistor, 60 Ohms
13	G12-34000	Condenser, 0.004725 Mfd.	41	W-28589	Resistor, 350 Ohms
14	G7-34000	Condenser, 0.00145 Mfd.	42	W-22514	Resistor, 750 Ohms
15	W-30805	Condenser, 0.01 Mfd. 400 Volt	43A	W-27503	Resistor, 1400 Ohms
16	G2-34002	Condenser, 0.0001 Mfd.	43B	W-27503	Resistor, 1400 Ohms
17			44	G51-28807	Socket 25Z5
18	W-32379	Condenser, 0.02 Mfd. 200 Volt	45A	G75-28807	Socket 6D6
19	W-32378	Condenser, 0.01 Mfd. 400 Volt	45B	G75-28807	Socket 6D6
20A	W-28621	Condenser, 0.02 Mfd. 200 Volt	46	G30-28807	Socket 43
20B	W-28621	Condenser, 0.02 Mfd. 200 Volt	47	G48-28807	Socket 6B7
20C	W-28621	Condenser, 0.02 Mfd. 200 Volt	48	G47-28807	Socket 6A7
20D	W-28621	Condenser, 0.02 Mfd. 200 Volt	W-35772		Tube Shield Half
20E	W-28621	Condenser, 0.02 Mfd. 200 Volt	W-35773		Tube Shield Cap
20F	W-28621	Condenser, 0.01 Mfd. 200 Volt	W-35774		Tube Shield Base
21	W-30323	Condenser, 0.006 Mfd. 200 Volt	49	314 BL	Speaker, (Table Model)
22	W-30322A	Condenser, 0.00017 Mfd. 200 Volt	414 CL		Speaker, (Console Model)
22Y			B	-35935	Band Change Switch
23	W-24049B	Condenser, 0.1 Mfd. 200 Volt	50W		Tone Control Switch
24	W-36072	Condenser, 0.035 Mfd. 200 Volt	51	W-35937	Ant. Gnd. Terminal Board
25	W-29910A	Condenser, 0.25 Mfd. 200 Volt	G27-26719		Speaker Terminal Board
26	G10-33005	Trimmer Condenser	G5-31128		Volume Control, 500,000 Ohms
27	G11-33005	Trimmer Condenser	36052		On-Off Switch
28Z			W-34628		Speaker Terminal Board Cover
28Y	W-35951	3 Gang Trim. Cond. 3-25 Mmf.	W-34627		Speak. Term. Bd. Cov. Insulator
28X			W-37340		Knob (Pointer Notch)
28W			W-37339		Knob
28V	W-35951	3 Gang Trim. Cond. 3-25 Mmf.	W-33528C		Escutcheon
28U			W-33984		Escutcheon Gasket
28T			D-28		Escutcheon Screws
29Z	G13-33001	2 Gang Var. Tuning Condenser	W-36312		Band Change Plate
29Y	G29-32086	Dial Drive Assembly	W-36309		Band Ch. Indicator (Celluloid)
	W-37198	Dial Hand	W-28760B		Escutcheon Pins
	W-32293	Dial Hand Nut			
	C-35946	Dial Indicator			

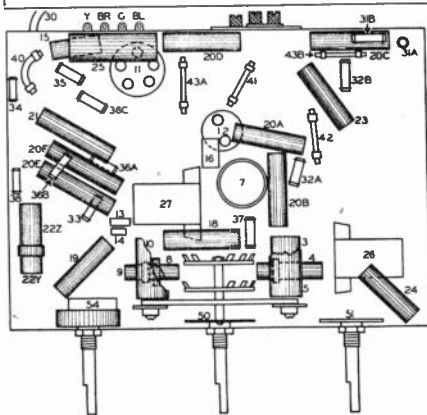


Fig. 3—Bottom View 615

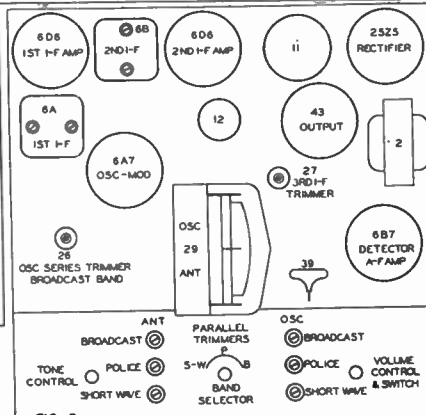


Fig. 2

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Go	Ga
6A8-G	Osc.-Modulator	6.3	240	—	95	—	0	4.5	-5 to -30	115
6K7-G	I-F Amplifier	6.3	240	—	95	4.5	0	4.5	—	—
6H6-G	Diode Detector	6.3	0	—	—	—	0	—	—	—
6F5-G	A-F Amplifier	6.3	150	—	—	—	0	1.5	—	—
6N6-G	Output	6.3	220	240	—	—	0	0	—	—
5Z4-MG	Rectifier	4.9	310	—	—	—	—	—	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

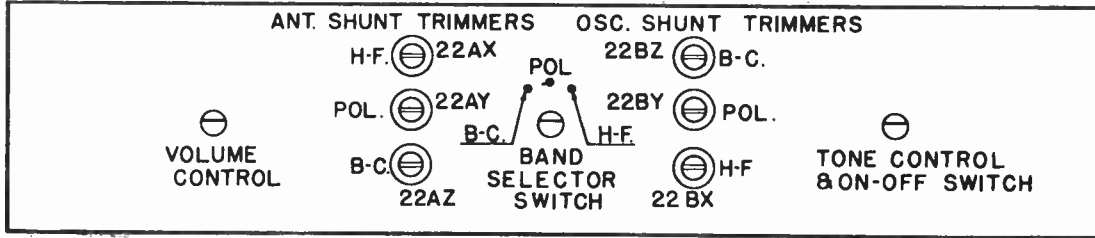
(f) Adjust both trimmers, located on top of the 1st I-F Transformer for maximum output.

Aligning R-F Amplifier.

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

(a) Adjust the "Osc" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the ad-

(b) To align the series trimmer (Item 21, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output.



Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1A	W -37922	Bulb Dial Light	28	-21455	Resistor 300,000 Ohm, 1/4 W.
1B	W -37922	Bulb Dial Light	29	-23785	Resistor 500,000 Ohm, 1/4 W.
	G3 -37965	Dial Light Socket Assembly	30A	-36688	Resistor 3 Megohm 1/4 W.
2	G104 -32000	Ant. Coil B. C. B.	30B	-36688	Resistor 3 Megohm 1/4 W.
3	G103 -32000	Ant. Coil Pol. B.	31	-36952	Resistor 30,000 Ohm, 1 W.
4	G105 -32000	Ant. Coil H. F. B.	32	W -21964	Resistor 165 Ohm, 3/4 W.
5	G99 -32004	1st I-F Assembly	33	W -27503	Resistor 1400 Ohm, 3/4 W.
6	G100 -32004	2nd I-F Assembly	34Z	W -32301	Candohm {10,000 Ohm 15,000 Ohm
7	G91 -32002	Osc. Coil B. C. B.	34Y		
8	G92 -32002	Osc. Coil Pol. B.			
9	G93 -32002	Osc. Coil H. F. B.	35	G166 -36400	Socket 5Z4
10	W -36055	Condenser 35 Mfd. 400 V.	36	G158 -36400	Socket 6F5
11	W -36057	Condenser 40 Mfd. 300 V.	37	G155 -36400	Socket 6H6
12	G7 -34007	Condenser 1750Mmfd.Pol.Osc.Series	38	G165 -36400	Socket 6N6
13	G8 -34007	Condenser 4350Mmfd.H.-F.Osc.Series	39	G151 -36400	Socket 6K7
14A	G2 -34002	Condenser 0.0001 Mfd.	40	G156 -36400	Socket 6A8
14B	G2 -34002	Condenser 0.0001 Mfd.		W -40911	Tube Shield
15A	W -35139	Condenser 0.004 Mfd. 400 V.		W -27981A	Tube Shield Base
15B	W -35139	Condenser 0.004 Mfd. 400 V.			
16	W -30805	Condenser 0.01 Mfd. 400 V.	41	-40971	Speaker Spec. 332-BJ-3
17	W -30488	Condenser 0.02 Mfd. 400 V.			
18	W -35936	Condenser 0.05 Mfd. 200 V.	42Z	-40770	Band Selector Switch
19	W -24049B	Condenser 0.1 Mfd. 200 V.	to		
20	W -22688	Condenser 0.1 Mfd. 400 V.	42W		
21	-40769	Condenser B-C Osc. Series Trimmer	43	G27 -26719	Ant & Grd. Terminal Board
22AZ	W -35951	3 Section Ant. Shunt Trimmers	44Z	-37908	Tone Control (100,000 Ohm) On-Off Switch
to					
22AX					
22BZ	W -35951	3 Section Osc. Shunt Trimmers	45	G12 -28500	Power Transformer 60 Cy. 110 V.
to					
22BX					
23Z	G21 -33001	2 Section Var. Tuning Cond. Gang.	46	G13 -28500	Power Transformer 25 Cy. 110 V.
23Y	MG27 -40762	Dial Drive Assembly	47	G14 -28500	Power Transformer 25 Cy. 220 V.
	C -40930	Dial Glass	48	-37967	Volume Control (1 Meg.)
	W -40804	Dial Glass Cushion	49	W -29910A	Condenser 0.25 Mfd. 200 V.
24	B -33906A	Power Cord & Plug	50	W -28621	Condenser 0.02 Mfd. 200 V.
25	G3 -35696	Speaker Cable	51	W -35758	Condenser 0.008 Mfd. 400 V.
26	-40757	Resistor 50,000 Ohm, 1/4 W.	52	W -25357	Resistor 75 Ohms, 3/4 W.
27	-35930	Resistor 200,000 Ohm, 1/4 W.		B -40839	Escutcheon Ring
				W -28760A	Escutcheon Pin
				W -37339	Knob (3)
				W -40192B	Knob (1)
				W -36117	Rubber Mtg. Foot

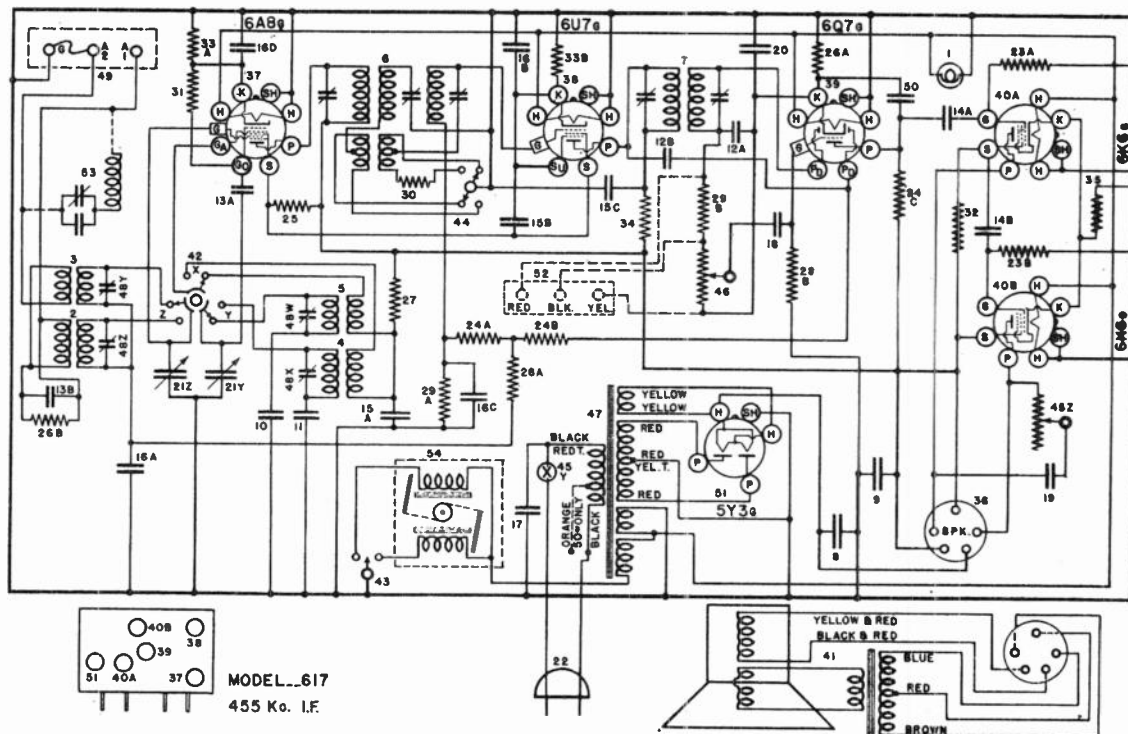
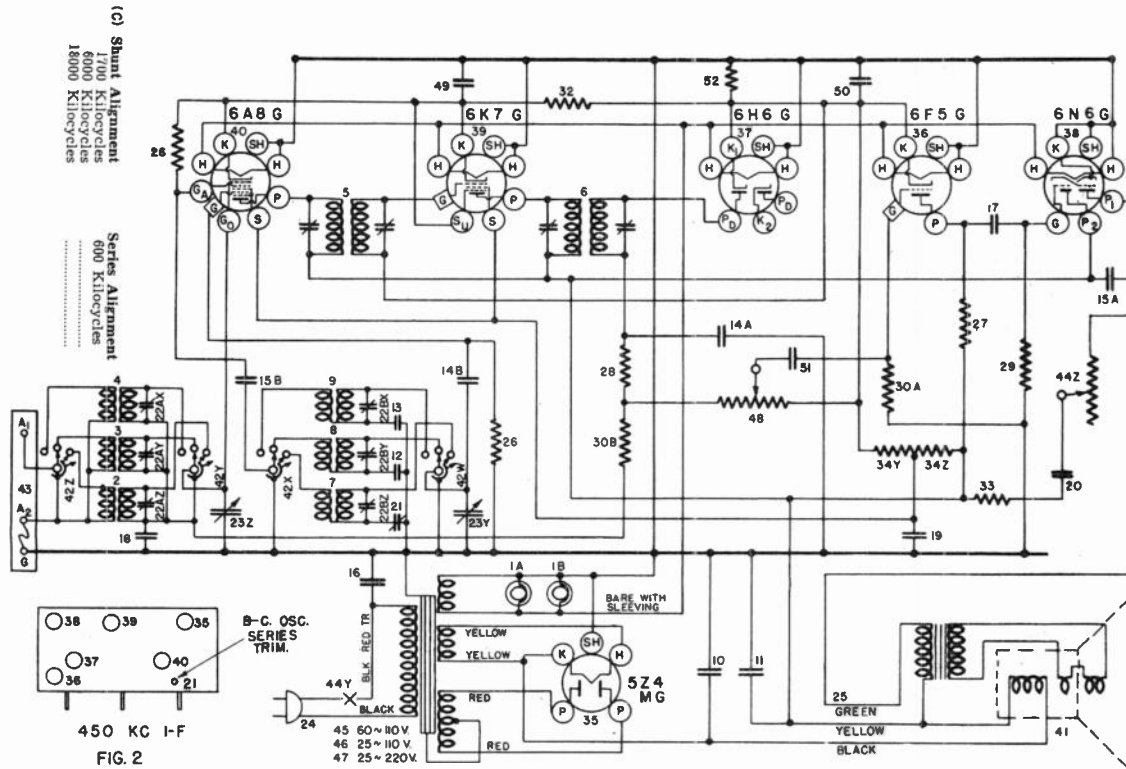


FIG. 1.—WIRING DIAGRAM—MODEL 617

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
 High Frequency Band

Minimum Capacity Signal  
 1,725 Kilocycles  
 18,300 Kilocycles

Shunt Alignment Signal  
 1,400 Kilocycles  
 18,000 Kilocycles



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	220	100	3.	-15	156
6U7G	I-F Amplifier	6.3	206	100	2.5	—	—
6Q7G	Det, AVC & AF Amp.	6.3	68	—	1.5	—	—
6K6G	(2) Output	6.3	216	214	18.	—	—
5Y3G	Rectifier	5.0	—	—	280	—	—

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band.

(d) Turn the Local-Distance switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. **DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.**

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. Do not force adjustment screw.

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 250 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer.

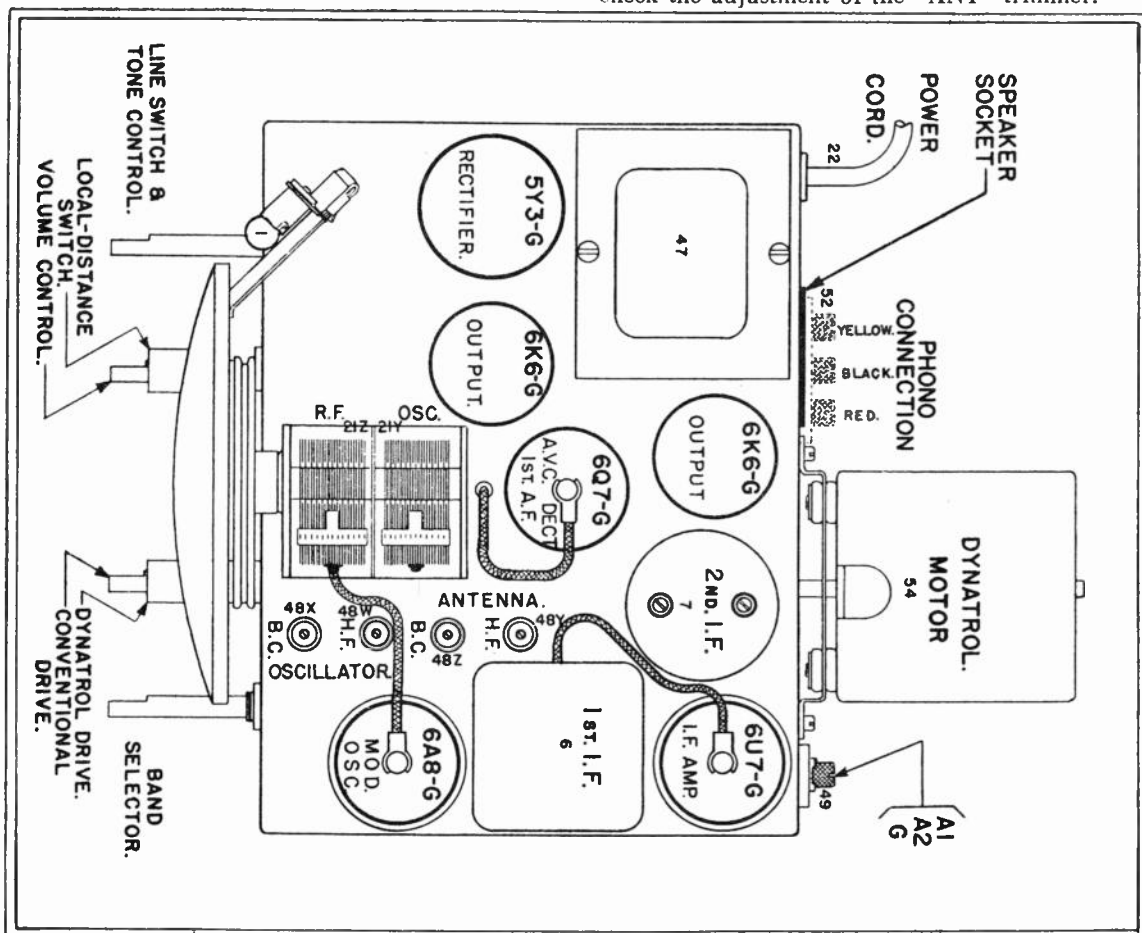


Fig. 2 Top View Model 617

## MODEL 617

### DYNATROL MOTOR

Should either vibrator unit of the Dynatrol motor need readjustment, the following procedure should be followed:

(a) Loosen the adjusting nut until the drive shaft can be rotated freely between the thumb and forefinger. The gap between the armature and "E" laminations should be approximately 3/16".

(b) With the motor running, tighten the adjusting nut until chatter stops. Care should be taken, however, not to tighten this adjustment too tight as an unstable condition will be reached wherein a slight change may result in a locked motor.

(c) Check the time required for the dial pointer to travel from each end of the dial to the other. The adjusting screws should be set so that approximately eight seconds are required in each direction.

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —43567	Dial Light Bulb	29B	—33474	Resistor 120,000 Ohm 1/3 W. Carb.
	G6 —44363	D. L. Socket Assy.	30	—42401B	Resistor 99 Ohm 1/4 W. Ins.
2	G148 —32000	Ant. Coil B-C.	31	—21237A	Resistor 60,000 Ohm 1/3 W. Carb.
3	G142 —32000	Ant. Coil H-F.	32	—44009	Resistor 3,000 Ohm 1/4 W. Ins.
4	G145 —32002	Osc. Coil B-C.	33A	W —25937	Resistor 275 Ohm 1/2 W. Flex.
5	G144 —32002	Osc. Coil H-F.	33B	W —25937	Resistor 275 Ohm 1/2 W. Flex.
6	G161 —32004	1st I-F Trans. 455 Kc.	34	W —23013	Resistor 2,000 Ohm 1/4 W. Flex.
7	G166 —32004	2nd I-F Trans. 455 Kc.	35	W —21965	Resistor 375 Ohm 1 W. Flex.
8	W —44438A	Condenser 40 Mf. 300 V.	36	G103 —28807	Socket Speaker
9	W —44012	Condenser 16 Mf. 250 V.	37	G156 —36400	Socket Type 6A8
10	G16 —34000	Condenser 3800 Mmf. H-F. Osc. Series	38	G171 —36400	Socket Type 6U7
11	G14 —34002	Condenser 400 Mmf. B-C. Osc. Series	39	G160 —36400	Socket Type 6Q7
12A	G2 —34002	Condenser .0001 Mf. Molded	40A	G172 —36400	Socket Type 6K6
12B	G2 —34002	Condenser .0001 Mf. Molded	40B	G172 —36400	Socket Type 6K6
13A	G13 —34002	Condenser .000035 Mf. Molded		W —40911	Tube Shield
13B	G13 —34002	Condenser .000035 Mf. Molded	41	—465BP15"M"	Speaker M'fg. Spec. 1-D-1197
14A	W —23142	Condenser .02 Mf. 400 V.		—45186	V. C. & Cone Assy.
14B	W —23142	Condenser .02 Mf. 400 V.		—45187	Field Coil (750 Ohm)
15A	W —28621	Condenser .02 Mf. 200 V.		—45188	Output Transformer
15B	W —28621	Condenser .02 Mf. 200 V.		—44681	Spk. Plug
15C	W —28621	Condenser .02 Mf. 200 V.	42	—44955	Band Selector Switch
16A	W —36541	Condenser .02 Mf. 160 V.	43	G2 —44476	Dynatrol Switch
16B	W —36541	Condenser .02 Mf. 160 V.		G5 —44470	Toggle Arm (Dynatrol Sw.)
16C	W —36541	Condenser .02 Mf. 160 V.	44	—44796	Local-Distance Switch
16D	W —36541	Condenser .02 Mf. 160 V.		G4 —44470	Toggle Arm & Clamp Assem.
17	W —30805	Condenser .01 Mf. 400 V.	45	—44024B	Tone Control & Line Switch
18	W —30323	Condenser .01 Mf. 200 V.	46	—44467	Volume Control (1 Meg.)
19	W —23615	Condenser .05 Mf. 400 V.	47	—44695	Power Trans. 110 V. 60 Cy.
20	W —34712	Condenser .25 Mf. 160 V.		—44697	Power Trans. 110 V. 50 Cy.
21	G42 —33001	2 Section Var. Tuning Cond.		—44696	Power Trans. 110 V. 25 Cy.
	W —44790	Dial Face (Glass)		—44698	Power Trans. 220 V. 50 Cy.
	W —44085B	Dial Mask		—44694	Power Trans. 220 V. 25 Cy.
	W —44299	Dial Hand (Pointer)	48	W —41247A	4 Sect. Shunt Trimmer Assy.
	W —40486	Pointer Mtg. Screw	49	G27 —26719	Ant.-Gnd. Terminal Assy.
	C —44687A	Support—Dial Glass	50	G3 —34002	Condenser .0005 Mf. Molded
	W —44084A	Ring—Glass Support	51	G173 —36400	Socket Type 5Y3
	W —41582	Drive Cord	52	G39 —26719	Phono. Terminal Assy.
	W —43561	Tension Spring	53	G170 —32004	Wave Trap Assy.
	G1 —43564	Pulley & Hub Assy.	54	G3 —44416	Dynatrol Motor
	MG19 —44575	Shaft & Coupling Assy.		W —45218	Vibrator Drive Unit (Left or Right)
	W —44479A	Bracket—Drive Shaft		W —44317A	Pulley (Dyn. Motor)
	W —44480A	Sleeve. Drive Shaft		W —43622	Felt Washer
	B —44004	Line Cord & Plug		W —44382	Friction Spring (Shaft)
22				W —44319	Toggle Hook (Belt)
23A	—23785	Resistor 500,000 Ohm 1/3 W. Carb.		—7593	Tubing 3/8" (For Hook)
23B	—23785	Resistor 500,000 Ohm 1/3 W. Carb.		W —44701C	Grommet (Tension)
24A	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —24074	Adjusting Nut
24B	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —44384A	Rubber Pad (Rebound)
24C	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —44745	Clamp Plate (Belt)
25	—24990	Resistor 25,000 Ohm 1/3 W. Carb.		W —43552	Clamp Spk. Plug
26A	—24814	Resistor 7,000 Ohm 1/3 W. Carb.		—7N	Cabinet
26B	—24814	Resistor 7,000 Ohm 1/3 W. Carb.		W —44685A	Call Letter Clip
27	—21876	Resistor 10,000 Ohm 1/3 W. Carb.		W —44866	Call Letter Magn. Lens
28A	—26577	Resistor 3 Megohm 1/3 W. Carb.		—45264	Call Letter List
28B	—26577	Resistor 3 Megohm 1/3 W. Carb.		W —44431	Knob Local-Distance
29A	—33474	Resistor 120,000 Ohm 1/3 W. Carb.		—44387B	Knob Dynatrol Motor
				—44386	Knob Sta. Select.-Vol. Cont.
				W —44432	Knob Band Select.—T. C. & Line Switch
				B —44869A	Escutcheon
				C —44972A	Cabinet Back
				—44819	Grille Cloth

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	220	100	3.	-15	156
6U7G	I-F Amplifier	6.3	206	100	2.5	—	—
6Q7G	Det, AVC & AF Amp.	6.3	68	—	1.5	—	—
6K6G	(2) Output	6.3	216	214	18.	—	—
5W4	Rectifier	5.0	—	—	295	—	—

**Tuning I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh.
- (c) Turn the band selector switch to the Broadcast Band.
- (d) Turn the Local-Distance switch to the "Distance" position.
- (e) Set the signal generator to 455 kilocycles.
- (f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.
- (g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.
- (h) Close the middle trimmer of the 1st I-F transformer. Do not force adjustment screw.
- (i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

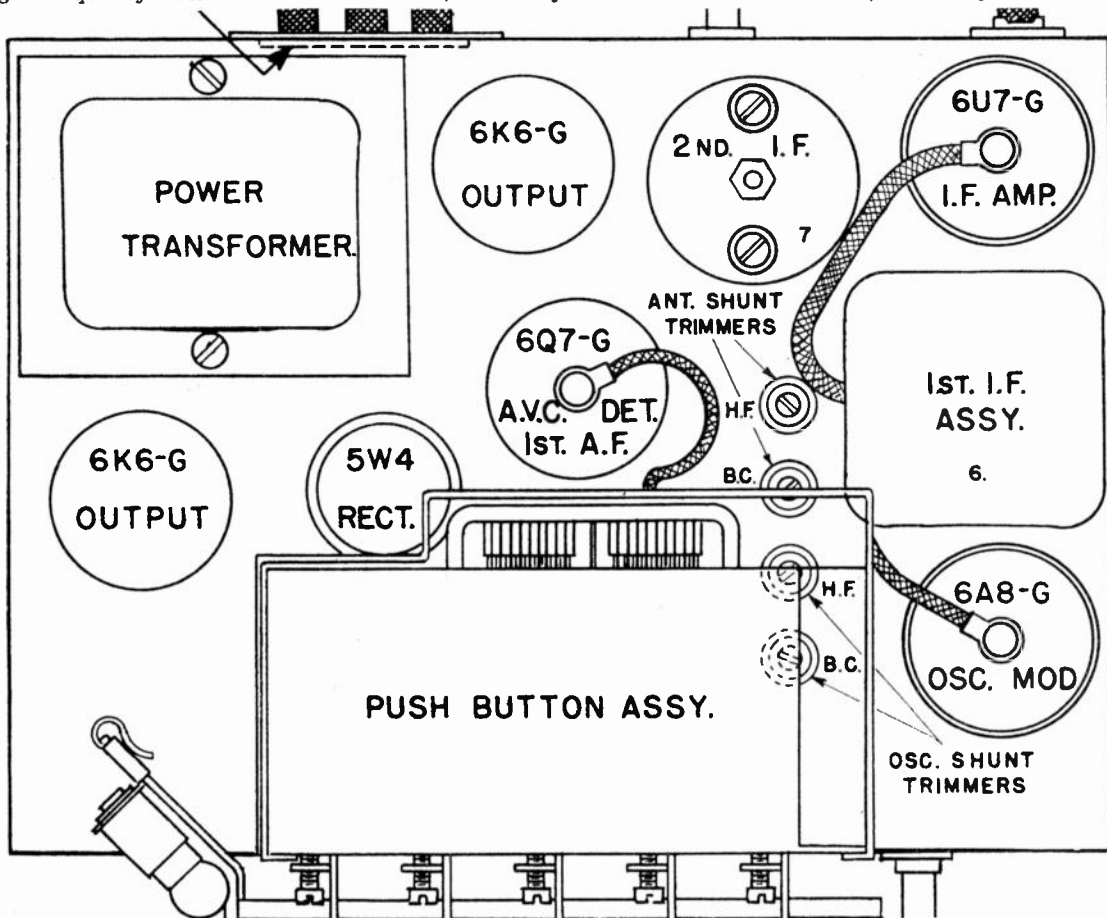
When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 250 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

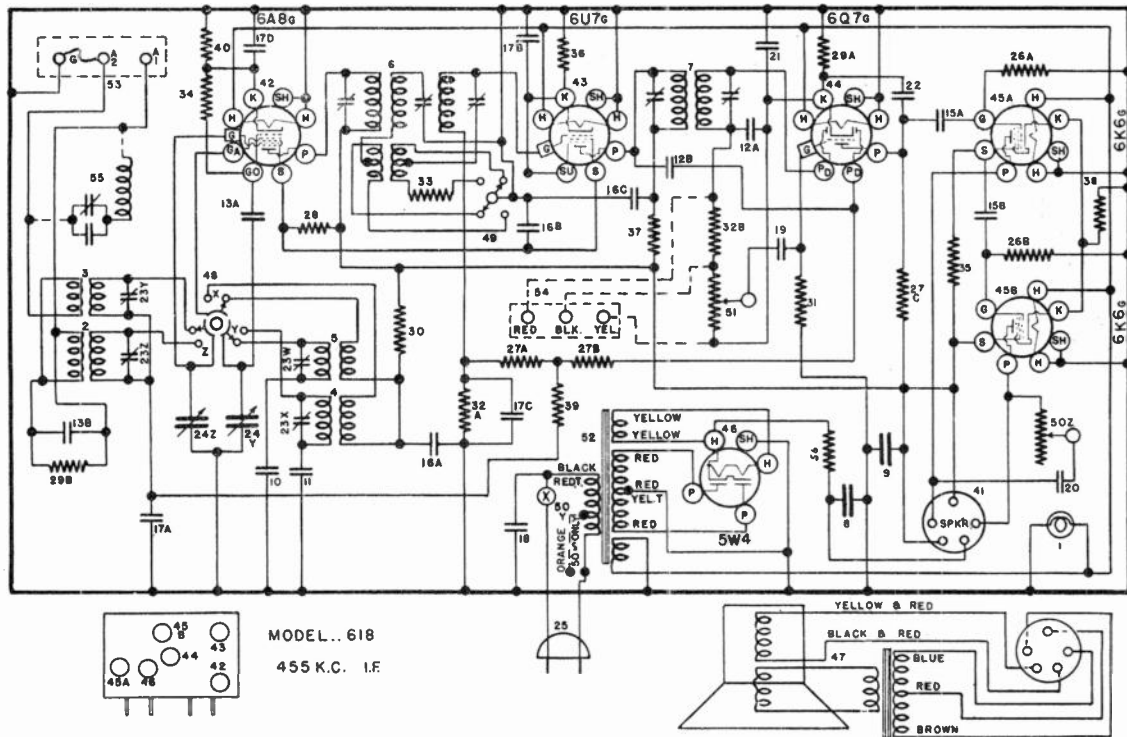
(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast Band	Minimum Capacity Signal	Shunt Alignment Signal
High Frequency Band	1,725 Kilocycles	1,400 Kilocycles
	18,300 Kilocycles	18,000 Kilocycles



MODEL 618



MODEL 618  
455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -43567	Dial Light Bulb	33	-12101B	Resistor, 90 Ohm 1/4W. Ins.
2	G2	D. L. Socket Assy.	34	-21237A	Resistor, 60,000 Ohm 1/4W. Carb.
3	G148-32000	Ant. Coil, B-C.	35	-44009	Resistor, 3,000 Ohm 1/4W. Ins.
4	G171-32000	Ant. Coil, H-F.	36	W -25937	Resistor, 275 Ohm 1/4W. Flex.
5	G145-32002	Osc. Coil, B-C.	37	W -23013	Resistor, 2,000 Ohm 1/4W. Flex.
6	G144-32002	Osc. Coil, H-F.	38	W -21965	Resistor, 375 Ohm 1W. Flex.
7	G161-32004	1st I-F. Assy.—455 Kc.	39	-21454	Resistor, 1 Megohm 1/4W. Carb.
8	G166-32004	2nd I-F. Assy.—455 Kc.	40	W -28106	Resistor, 500 Ohm 1/4W. Flex.
9	W -44438A	Condenser, 40 Mf. 300 V.	41	G103-28807	Socket Speaker
10	W -44012	Condenser, 16 Mf. 250 V.	42	G156-36100	Socket, Type 6A8
11	G16	Condenser, 3,800 Mmf. H-F. Osc. Series	43	G171-36100	Socket, Type 6U7
12A	G14	Condenser, 400 Mmf. B-C. Osc. Series	44	G160-36400	Socket, Type 6Q7
12B	G2	Condenser, .0001 Mf. Molded	45A13	G172-36400	Socket, Type 6K6
13A	G2	Condenser, .0001 Mf. Molded	46	G187-36400	Socket, Type 5W4
13B	G13	Condenser, .000035 Mf. Molded	47	W -10911	Tube Shield
14	G13	Condenser, .000035 Mf. Molded		-45186	Speaker, Mfg. Spec. 1-D-1197
15A	W -23142	Condenser, .02 Mf. 400 V. Tub.		-45187	Cone and V. C. Assy.
15B	W -23142	Condenser, .02 Mf. 400 V. Tub.		-45188	Field Coil (750 Ohm, 75 M. A.)
16A	W -28621	Condenser, .02 Mf. 200 V. Tub.		-44681	Output Transformer
16B	W -28621	Condenser, .02 Mf. 200 V. Tub.		-44681	Speaker Plug
16C	W -28621	Condenser, .02 Mf. 200 V. Tub.	48	-44355	Band Selector Switch
17A	W -36541	Condenser, .02 Mf. 160 V. Tub.	49	-44796	Local-Distance Switch
17B	W -36541	Condenser, .02 Mf. 160 V. Tub.		MG17-4575	Arm, Sleeve and Clamp Assy.
17C	W -36541	Condenser, .02 Mf. 160 V. Tub.	50	-44024B	Tone Control and Switch
17D	W -36541	Condenser, .02 Mf. 160 V. Tub.	51	-44487	Volume Control (1 Meg.)
18	W -30805	Condenser, .01 Mf. 400 V. Tub.	52	-44695	Power Trans., 60 Cy.-110 V.
19	W -30323	Condenser, .01 Mf. 200 V. Tub.		-44697	Power Trans., 50 Cy.-110 V.
20	W -23615	Condenser, .05 Mf. 400 V. Tub.		-44698	Power Trans., 50 Cy.-220 V.
21	W -34712	Condenser, .25 Mf. 160 V. Tub.		-44686	Power Trans., 25 Cy.-220 V.
22	G3	H-F. Osc. Trimmer	53	G27-41694	Ant. and Gnd. Terminal Assy.
23W	G3	B-C. Osc. Trimmer (Temp. Compensated)	54	G39-26719	Phone Terminal Assy.
23X	W -45715	H-F. Ant. Trimmer	55	G170-32004	Wave Trap (455 Kc.)
23Y	W -45715	B-C. Ant. Trimmer	56	W -45798	Resistor, 75 Ohm 1/4W. Flex.
23Z	W -45715	2 Section Gang Cond.			
24	G12-33001	Dial Face (Glass)			
	B	Dial Mask (Metal Disc)			
	W -44085B	Ring (Cardboard Support)			
	C	Bracket (Dial Mounting)			
	W -45689	Right Angle (Bracket Mtg.)			
	W -44299	Dial Hand (Pointer)			
	W -40486	Screw—Dial Hand Mtg.			
	W -2015	Int. Shakeproof Washer (Pointer)			
	W -45644	Pointer Shaft			
	W -50325A	Retaining Ring (Pointer Shaft)			
	G10-43564	Pulley and Hub Assy. (Pointer Shaft)			
	G11-43564	Pulley, Gear and Hub Assy.			
	W -45632	Spring (Double Gear Takeup)			
	MG29-45607	Brkt. and Pulley Assy. (Gang Mtg.)			
	W -44500A	Bearing Plate (Drive Shaft)			
	W -43542B	Mtg. Brkt. (Drive Shaft)			
	W -45686A	Drive Shaft			
	W -43549	Retaining Ring (Drive Shaft)			
	W -44701C	Grommet (On Drive Shaft)			
	W -41582	Drive Cord—35" Req.			
	W -50573A	Tension Spring (Drive Cord)			
	B	Power Cord			
25	-44004	Resistor, 500,000 Ohm 1/4W. Carb.			
26A	-23785	Resistor, 500,000 Ohm 1/4W. Carb.			
26B	-23785	Resistor, 500,000 Ohm 1/4W. Carb.			
27A	-33344C	Resistor, 400,000 Ohm 1/4W. Carb.			
27B	-33344C	Resistor, 400,000 Ohm 1/4W. Carb.			
27C	-33344C	Resistor, 400,000 Ohm 1/4W. Carb.			
28	-24990	Resistor, 25,000 Ohm 1/4W. Carb.			
29A	-24814	Resistor, 7,000 Ohm 1/4W. Carb.			
29B	-24814	Resistor, 7,000 Ohm 1/4W. Carb.			
30	-21876	Resistor, 10,000 Ohm 1/4W. Carb.			
31	-26577	Resistor, 3 Megohm 1/4W. Carb.			
32A	-33474	Resistor, 10,000 Ohm 1/4W. Carb.			
32B	-33474	Resistor, 10,000 Ohm 1/4W. Carb.			

PUSH BUTTON PARTS

Part No.	Description
G2	-13683 Push Button Unit Assy.
G30	-13683 Key and Toggle Assy.
W	-50542A Key Clip (Lock Clamp)
W	-45718 Screw (Lock Clamp)
W	-50607 Return Spring
G31	-45683 Rocker Plate Assy.
W	-50561 1/4" No. 40 Screw (Rear Plate Bearing)
W	-50547 Rear Guide Plate
W	-45646A Adjust. Clip (Front—5 Req.)
W	-45589A Push Button
W	-50551A Celluloid Cover
B	-44960 R. H. Mtg. Plate
B	-44961 L. H. Mtg. Plate
7NA	Cabinet
W	-44019 Extruded Rubber Spacer (Chassis Mtg.)
W	-44023 Headed Bushing (Chassis Mtg.)
W	-44387B Knob (Large—Tuning)
W	-44431 Knob (Large—Loc.—Dist.)
W	-44386B Knob (Small—Tuning and Vol. Cont.)
W	-44432 Knob (Small—Tone Cont. and Band Sw.)
W	-45614 Bushing for 44387B Knob
B	-4869A Escutcheon
B	-45626B Push Button Escutcheon
W	-50549 Call Letter Sheet
W	-45693 Bracket—P. B. Unit Support
W	-23880A Thumb Screw

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Go	Ga
6A8-G	Osc.-Modulator	6.3	265	—	100	—	0	5.0	0	140
6K7-G	I-F Amplifier	6.3	265	—	120	6.2	0	6.2	—	—
6J7-G	Det. & A-F Amplifier	6.3	0	—	75	2.6	0	2.6	—	—
6C5-G	2nd. A-F Amplifier	6.3	140	—	—	—	0	10.0	—	—
6N6-G	Output	6.3	270	255	—	—	0	2.3	—	—
5Z4-MG	Rectifier	4.9	350	—	—	—	—	—	—	—

**Tuning I-F Amplifier to 450 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.
- (b) Turn the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Set the signal generator to 450 kilocycles.
- (d) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum output (Fig. 2).
- (e) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place.
- (f) Close the middle trimmer (Tert. Fig. 4) on the 1st I-F transformer so that it is moderately tight. (Do not force adjusting screw).
- (g) Adjust the top trimmer on the 1st. I-F transformer for maximum output.
- (h) Adjust the bottom trimmer on the 1st I-F transformer for maximum output.
- (i) Transfer the signal generator output lead from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.
- (j) Check the adjustment of the bottom trimmer of the 1st I-F transformer. **DO NOT READJUST THE TOP TRIMMER.**
- (k) Adjust the middle trimmer of the 1st I-F transformer by opening condenser until maximum output is

obtained. **DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.**

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers.

(b) To align the series trimmers (29Y-29Z Fig. 4) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	2500 Kilocycles
18000 Kilocycles	.....

**SHUNT TRIMMERS**

	Ant.	Osc.	
High-Frequency	27A	27B	High-Frequency
Police	28Z	28X	Police
Broadcast	28Y	28W	Broadcast

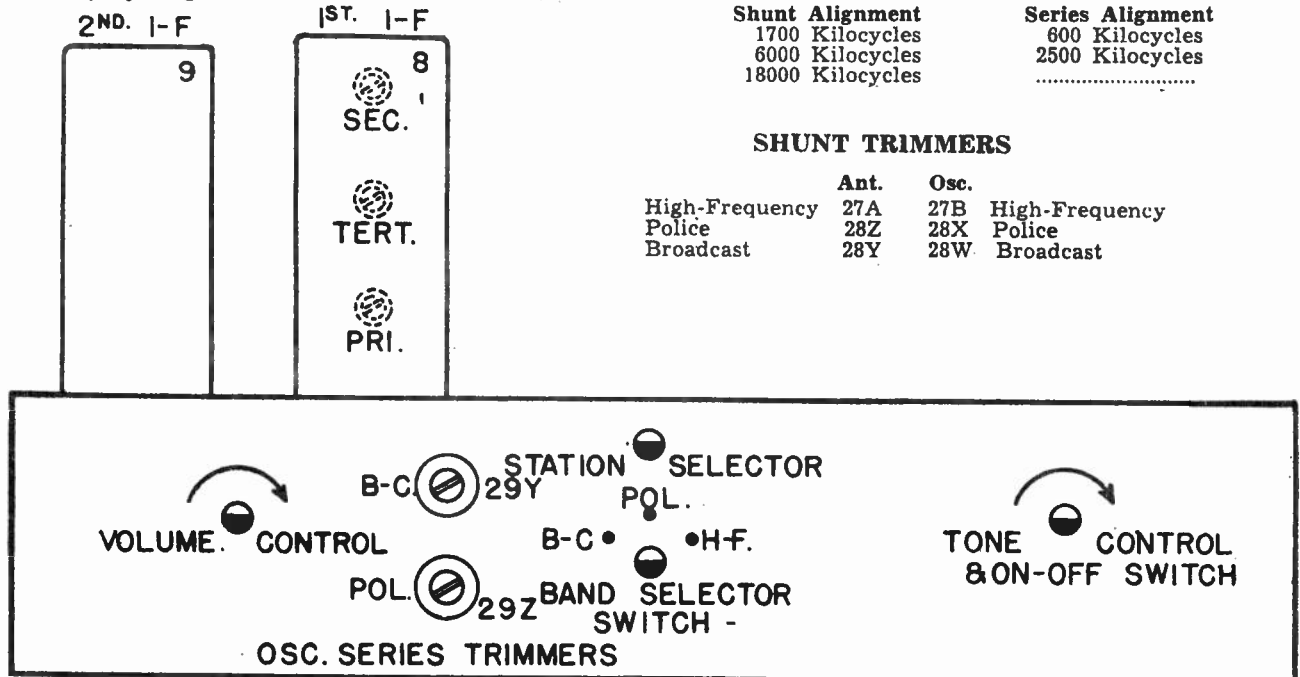


Fig. 4 • Front View 626

MODEL 626

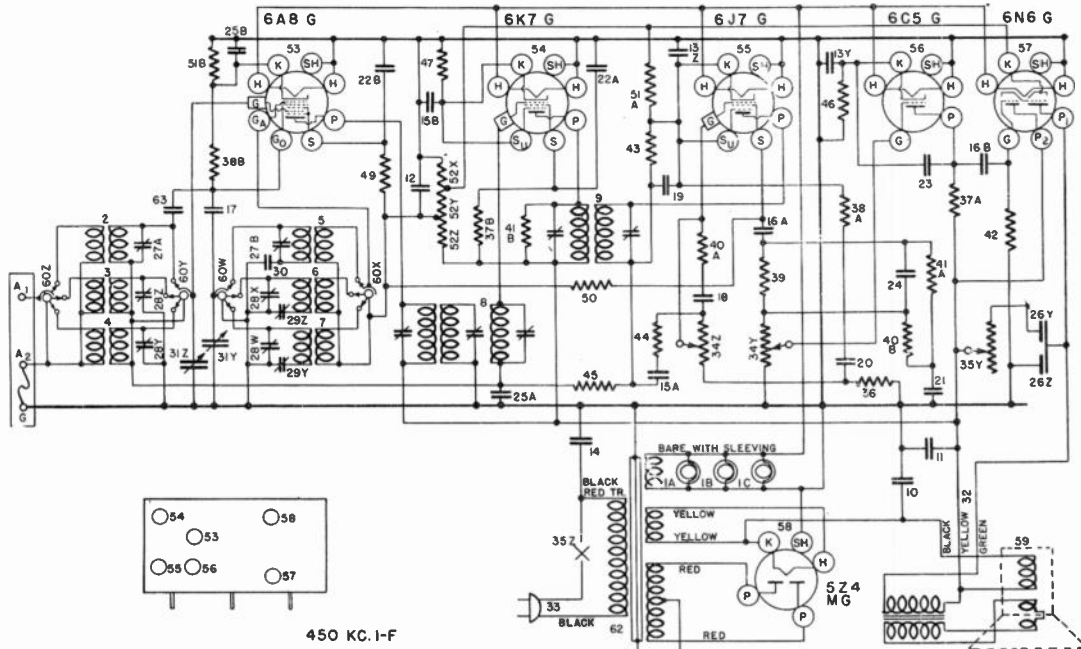
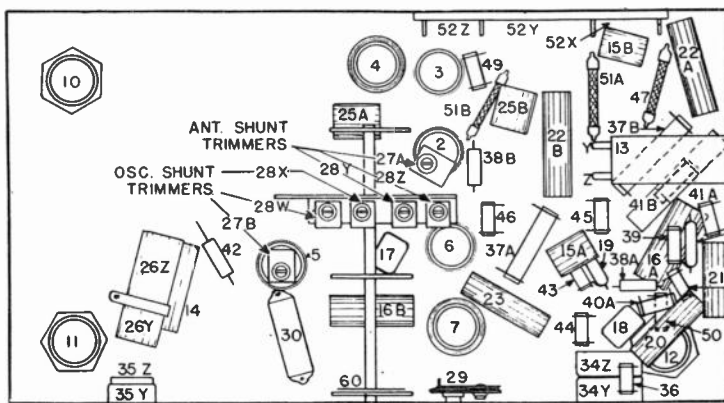


Figure in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1A	W -37922	Bulb, Dial Light	38A	-36761	Resistor, 40,000 Ohm, 1/4 W., Insul.
1B	W -37922	Bulb, Dial Light	38B	-36761	Resistor, 40,000 Ohm, 1/4 W., Insul.
1C	W -37922	Bulb, Indicator Light	39	-21754	Resistor, 1 Megohm, 1/4 W.
2	G92 -32000	Coil, Ant. 6000-18000 Kc.	40A	-34020	Resistor, 250,000 Ohm, 1/4 W.
3	G90 -32000	Coil, Ant. 1800-6000 Kc.	40B	-34020	Resistor, 250,000 Ohm, 1/4 W.
4	G91 -32000	Coil, Ant. 540-1800 Kc.	41A	-37590	Resistor, 750,000 Ohm, 1/4 W.
5	G84 -32002	Coil, Osc. 6000-18000 Kc.	41B	-37590	Resistor, 750,000 Ohm, 1/4 W.
6	G83 -32002	Coil, Osc. 1800-6000 Kc.	42	-36322	Resistor, 500,000 Ohm, 1/4 W.
7	G82 -32002	Coil, Osc. 540-1800 Kc.	43	-33344	Resistor, 400,000 Ohm, 1/4 W.
8	G101 -32004	Coil, 1st I-F Assm.	44	-23403	Resistor, 150,000 Ohm, 1/4 W.
9	G102 -32004	Coil, 2nd I-F Assm.	45	-37215	Resistor, 1.5 Megohm, 1/4 W.
10	W -36055	Condenser, .35 mfd., 400 V.	46	-21876	Resistor, 10,000 Ohm, 1/4 W.
11	W -36057	Condenser, 40 mfd., 300 V.	47	-22514	Resistor, 750 Ohm, 1/4 W., Flex.
12	W -40325	Condenser, 50 mfd., 150 V.	48	-22831	Resistor, 15,000 Ohm, 1/4 W.
13Z	W -37778	Condenser, 12 mfd., 25 V.	49	-21875	Resistor, 100,000 Ohm, 1/4 W.
13Y	W -37778	Condenser, 12 mfd., 25 V.	50	-28106	Resistor, 500 Ohm, 1/4 W., Flex.
14	W -30805	Condenser, .01 mfd., 400 V.	51A	W -28106	Resistor, 500 Ohm, 1/4 W., Flex.
15A	W -36541	Condenser, .02 mfd., 160 V.	51B	W -28106	Resistor, 500 Ohm, 1/4 W., Flex.
15B	W -36541	Condenser, .02 mfd., 160 V.	52Z	-37829A	Resistor, 10,000 Ohm
16A	W -32780H	Condenser, .05 mfd., 400 V.	52Y	-37829A	Resistor, 25,000 Ohm
16B	W -32780H	Condenser, .05 mfd., 400 V.	52X	-37829A	Resistor, 25,000 Ohm
17	G1 -34002	Condenser, .00025 mfd., (molded)	53	G156 -36400	Socket 6A8
18	G6 -34002	Condenser, .00025 mfd., (molded)	54	G151 -36400	Socket 6K7
19	G2 -34002	Condenser, .0001 mfd., (molded)	55	G157 -36400	Socket 6J7
20	W -30323	Condenser, .01 mfd., 200 V.	56	G152 -36400	Socket 6C5
21	W -37988	Condenser, .017 mfd., 200 V.	57	G165 -36400	Socket 6N6
22A	W -23142	Condenser, .02 mfd., 400 V.	58	G154 -36400	Socket 5Z4
22B	W -23142	Condenser, .02 mfd., 400 V.	59	-37916	Speaker, Spec. 532 CJ-3
23	W -27540	Condenser, .0005 mfd., 400 V.	60	-37906D	Switch, 2 Sec. Band Selector
24	G5 -34002	Condenser, .00005 mfd., (molded)	61	G27 -26719	Terminal Board, Ant. & Grd.
25A	W -35936	Condenser, .05 mfd., 200 V.	G15	-28500	Transformer, Power 110-60 Cy.
25B	W -35936	Condenser, .05 mfd., 200 V.	G16	-28500	Transformer, Power 110-25 Cy.
26Z	W -31052	Condenser, .01 mfd., 400 V.	G17	-28500	Transformer, Power 220-25 Cy.
26Y	W -31052	Condenser, .01 mfd., 400 V.	W	-27981A	Base, Tube Shield
27A	W -37954	Condenser, H-F Ant. Shunt Trim.	W	-40531	Belt, Drive
27B	W -37954	Condenser, H-F Ant. Shunt Trim.	W	-22334	Cable, Indicator Control
28Z	W -37822A	Condenser, Pol. Ant. Shunt Trim.	W	-40537	Coupling, Flexible Drive
28Y	W -37822A	Condenser, Pol. Ant. Shunt Trim.	W	-40906	Dial Assembly, Complete
28X	W -37822A	Condenser, B-C Ant. Shunt Trim.	C	-37894	Escutcheon, Cabinet
28W	W -37822A	Condenser, Pol. Osc. Shunt Trim.	C	-40929	Face, Glass Dial
29Z	G31 -33006	Condenser, B-C Osc. Shunt Trim.	W	-40365	Gasket, Escutcheon Felt
29Y	G17 -34000	Condenser, Pol. Osc. Series Trim.	W	-40185	Hand, Long
30	G17 -34000	Condenser, B-C Osc. Series Trim.	W	-41145	Hand, Short
31Z	G19 -33001	Condenser, .0053 mfd. H-F Osc.	W	-37339	Knob, 3 required
31Y	G19 -33001	Condenser, Var. Tuning Gang	W	-40192H	Knob, 1 required
32	G4 -35696	Cable, Speaker	B	-37898	Lens, Dial
33	B -33906A	Cable & Plug, Power Supply	W	-37909	Pulley, Indicator Cable
34Z	W -37907	Vol. Cont., 1st A-F Control, 3 Meg.	W	-40911	Shield, Tube
34Y	W -37907	Vol. Cont., 2nd A-F Control, 1 Meg.	W	-40570	Shield, Dial Light
35Y	W -37908	Control, Tone	G3	-37865	Socket, Indicator & Dial Light
35Z	W -37908	Control, Tone	B	-37896A	Spring, Escutcheon Retaining
36	-21455	Resistor, 300,000 Ohm, 1/4 W.	B	-37897	Spring, Dial Lens Retaining
37A	-5469A	Resistor, 100,000 Ohm, 1 W.	B	-37897	Spring, Dial Lens Retaining
37B	-5469A	Resistor, 100,000 Ohm, 1 W.	B	-40715	Mask Dial



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	175	80	—	—	175	—
6U7G	I-F Amplifier	6.3	175	80	—	—	—	—
6P5G	Detector—A. V. C.	6.3	—	—	—	—	—	—
6F5G	1st. A-F Amplifier	6.3	105	—	—	—	—	—
6K6G	Power Output	6.3	160	170	—	-14.5	—	—
2W3	Rectifier	2.2	—	—	230	—	—	—

**Tuning I-F Amplifier to 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 4, Fig. 2).

(g) Check operations (e) and (f) for more accurate adjustment.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For both bands a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast Band  
Short-Wave Band

Minimum Capacity Signal  
1,725 Kilocycles  
7,000 Kilocycles

Shunt Alignment Signal  
1,400 Kilocycles  
6,000 Kilocycles

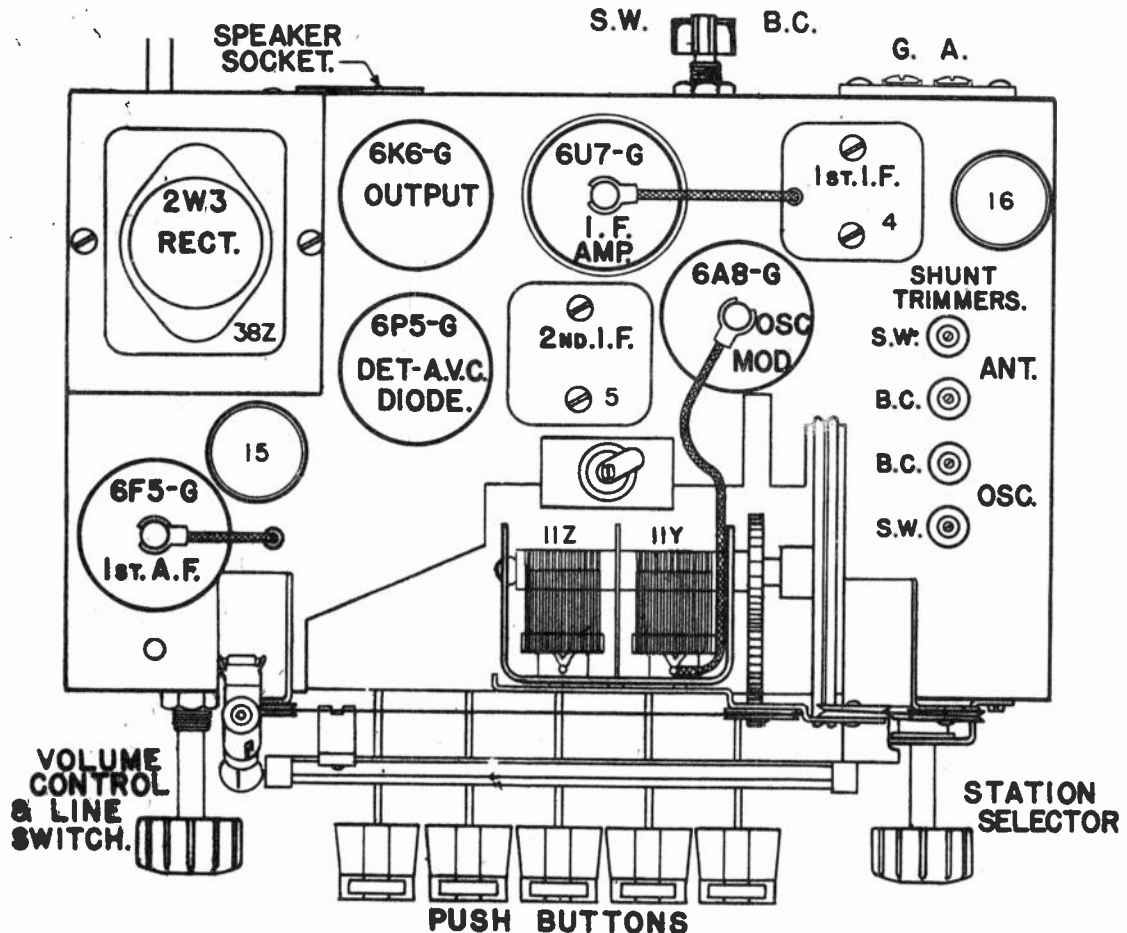
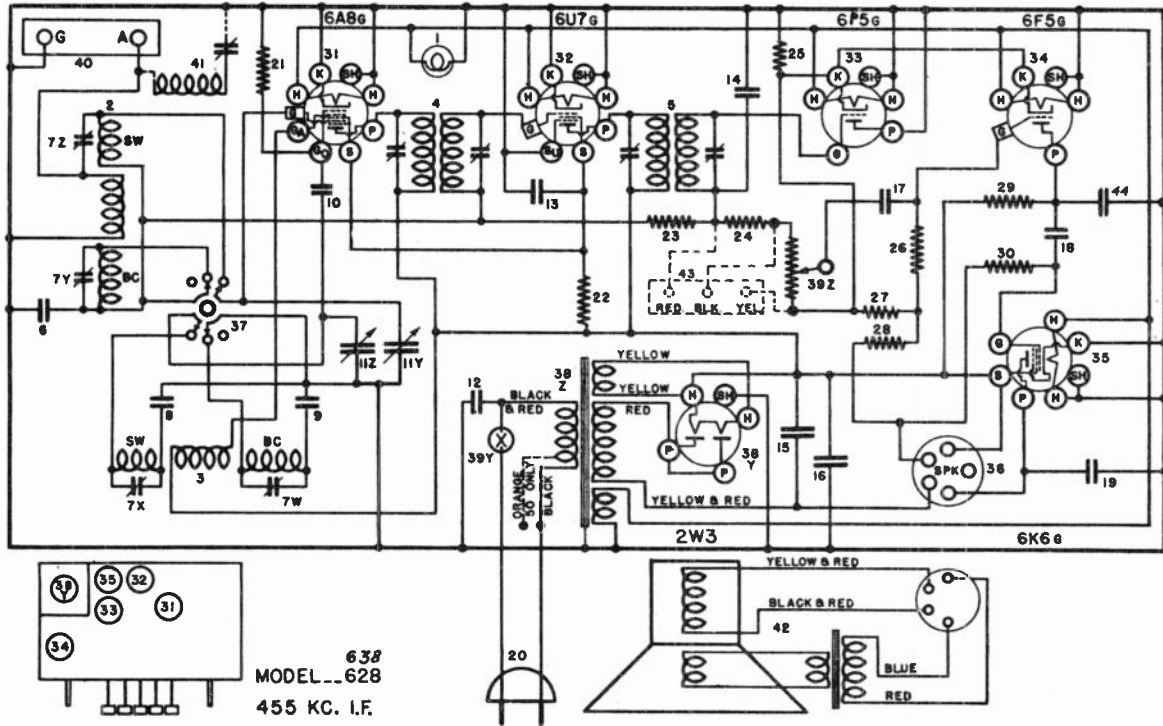


Fig. 2 Top View—Model 628-638-5628

MODELS 628, 638, 5638



MODEL 638  
455 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —37922	Dial Light 6-8 Volt		—45940	Power Trans., 50 Cycle, 220 V.
	G12 —45398	Dial Light Socket	39Z	—45864	{ Vol. Cont., 1 Meg. (628-5628)
2	G174 —32000	Antenna Coil, B-C and S-W.	39Y		{ Line Switch
3	G175 —32002	Oscillator Coil, B-C and S-W.	39Z		{ Vol. Cont., 1 Meg. (638)
4	G187 —32004	1st I-F Assy., 455 Kc.	39Y	—46314	{ Line Switch
5	G188 —32004	2nd I-F Assy., 455 Kc.	40	G1 —26719	A.-G. Terminal Assy.
6	W —36541	Condenser, .02 Mf., 160 V.	41	G193 —32004	455 Kc. Wave Trap
7	W —41247A	4 Section Trimmer Assy.	42	279-BP-12"U"	Speaker
8	G13 —34005	Condenser, .0014 Mf., Molded		—46121	Output Transformer
9	G18 —34002	Condenser, .0004 Mf., Molded	43	G41 —26719	Phono. Terminal Assy.
10	G5 —34002	Condenser, .00005 Mf., Molded	44	G7 —34002	Condenser, .0004 Mf., Molded
11	G55 —33001	2 Section G-C Condenser		G3 —45883	Push Button Unit (628-5628)
	C —45747	Glass Dial Face (628-638)		G11 —45683	Push Button Unit (638)
	W —46872	Glass Dial Face (5628)		G32 —45683	Riveted Key & Toggle
	W —46397	Dial Hand (Pointer)			(628-5628)
	B —45743B	Dial Support Bracket	G26	—45683	Riveted Key & Toggle (638)
	W —45984	L. H. Dial Mtg. Clip	W	—50542C	Key Lock Clamp
	W —45985	R. H. Dial Mtg. Clip		—45717	1 7/16 6x32 Lock Clamp Screw
	W —46037A	Dial Hand Guide	W	—50807B	Spring, Key Return
	W —45768C	Felt Strip	G22	—45683	Rocker & Gear Segment Assy.
	—45865	Manual Drive Shaft (628-5628)	W	—50561	1/8 6x40 Screw (Rocker Plate
	—46056	Manual Drive Shaft (638)			Bearing)
	W —43542B	Mounting Bracket Drive Shaft	W	—50588B	Adjusting Clip
	G12 —43564	Pulley & Hub Assy.		—46242	Rubber Foot (628-5628)
	G2 —41682	Drive Cord			
	W —50807B	Cord Tension Spring			
	W —46290	Drive Cord Clamp			
12	W —30805	Condenser, .01 Mf., 400 V.	W	—8A	Cabinet (Brown)
13	W —28621	Condenser, .02 Mf., 200 V.		—43552	Clamp, Speaker Plug
14	G1 —34002	Condenser, .00025 Mf., Molded		—45857	Knob, Band Switch
15	W —44012	Condenser 16 Mf., 250 V., Elec.		—45771	Knob, V. C. & Tuning
16	W —45968	Condenser 16 Mf., 250 V., Elec.		—50841	Station Call List
17	W —28819	Condenser, .006 Mf., 200 V.	W	—45553B	Push Button
18	W —28821	Condenser, .02 Mf., 200 V.		—50551A	Celluloid Call Letter Cover
19	W —34647	Condenser, .006 Mf., 400 V.			
20	B —45769	Power Cord and Plug			
21	—36761	Resistor, 40,000 Ohm, 1/4 W.		—8G	Cabinet (Wood Has Inlays)
22	—33390	Resistor, 30,000 Ohm, 1/3 W.		—8K	Cabinet (Wood)
23	—26577	Resistor, 3 Megohm, 1/3 W.	D	—46399C	Escutcheon
24	—21875	Resistor 100,000 Ohm, 1/3 W.		—46407	Screws, Escutcheon Mtg.
25	WAS-A	1/4 W. Resistor from 6F5 Cathode to Gnd. (Deleted)		—46408	Knob, Band Switch
26	60 Ohm	Resistor, 11 Megohm, 1/3 W.	W	—50841	Station Call List
27	WAS-A	1/4 W. Resistor from 6F5 Cathode to Junction of Items 26 and 28 (Deleted)		—50551A	Celluloid Cover
28	W —21985	Resistor, 375 Ohm, 1 W (was 275 Ohm)		—46417	Push Button
29	—21455	Resistor, 300,000 Ohm, 1/3 W.			
30	—23785	Resistor, 500,000 Ohm, 1/3 W.			
31	G178 —36400	Socket, 8 Prong			
32	G178 —36400	Socket, 8 Prong	W	—50551A	Celluloid Call Letter Cover
33	G178 —36400	Socket, 8 Prong		—50617	Push Button
34	G178 —36400	Socket, 8 Prong			
35	G178 —36400	Socket, 8 Prong			
	W —40911	Tube Shield		—45910	Instructions (628)
36	G103 —28807	Socket, Speaker Plug		—46326	Instructions (638)
37	—45901	Band Switch		—46897	Instructions (5628)
38	—45903	Power Trans., 60 Cycle, 110 V.			
	—45939	Power Trans., 50 Cycle, 110 V.			



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	G <sub>o</sub>
6A8G	Oscillator-Modulator	6.3	230	68	—	—	68	Neg.
6K7G	I-F Amplifier	6.3	230	68	—	—	—	—
6Q7G	Detector—A. V. C.—1st A-F	6.3	74	—	—	—	—	—
6P5G	Driver	6.3	230	—	+13	—	—	—
6AC5G	Power Output	6.3	225	—	—	+13	—	—
5Y3G	Rectifier	5.0	—	—	—	—	—	—

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

Aligning R-F Amplifier.

When aligning the R. F. amplifier the output lead from the signal generator is connected to the antenna lead of the receiver, a 200 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

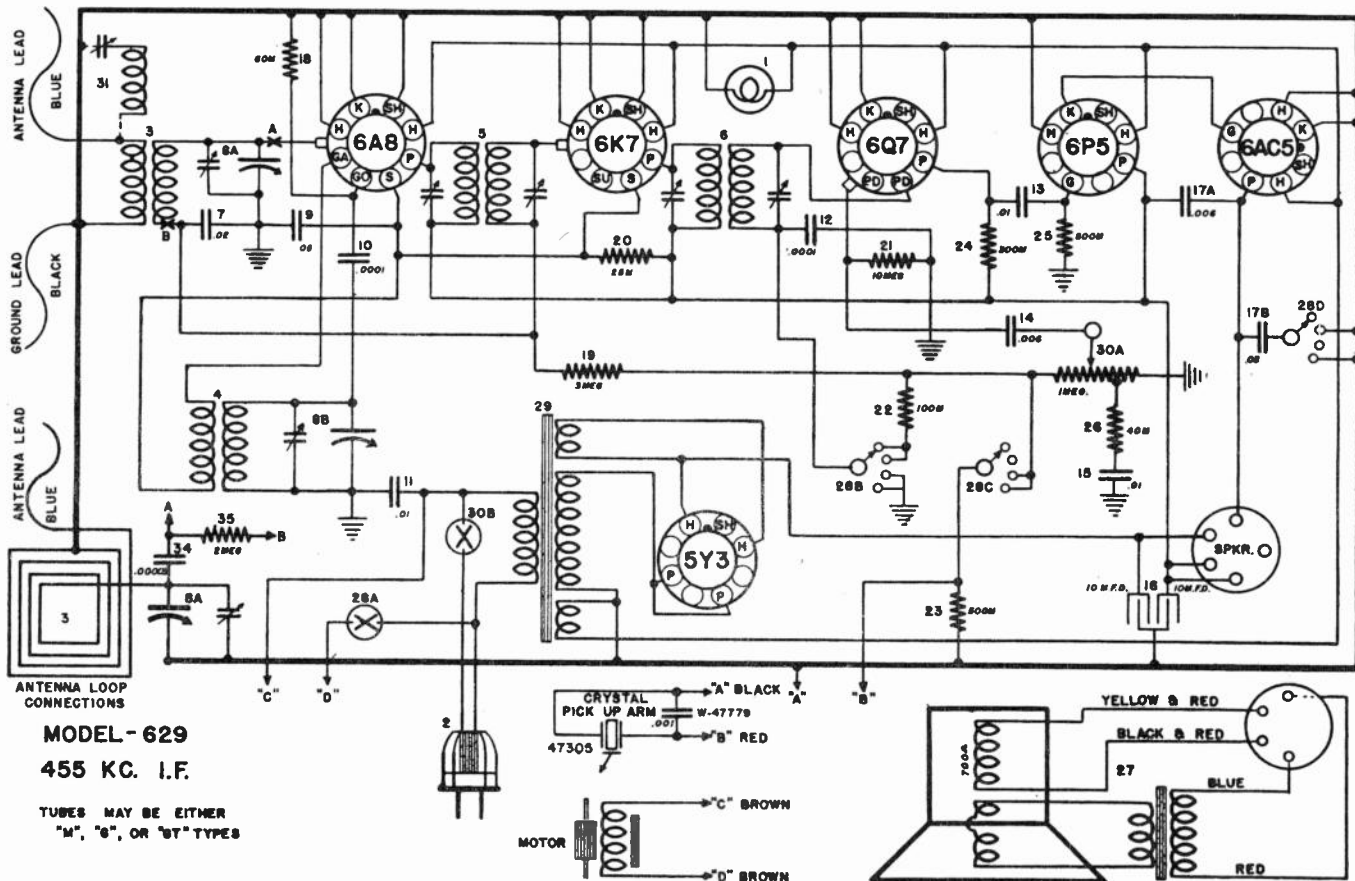
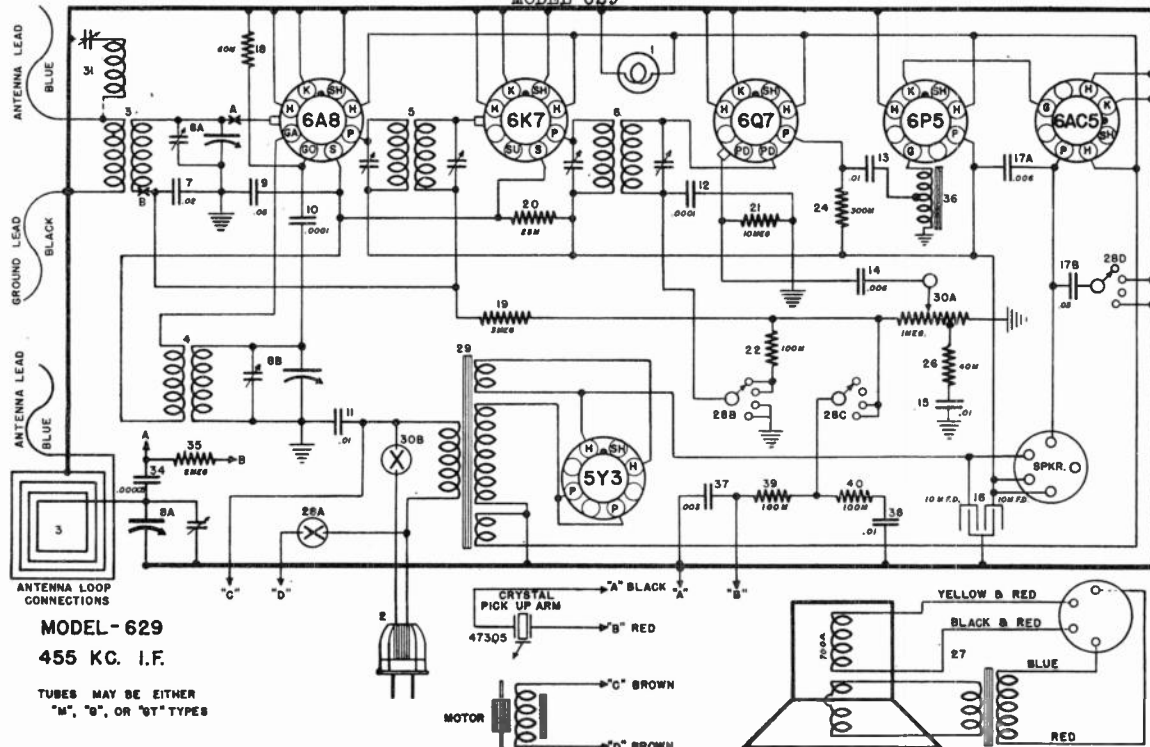


FIG. 1-A—WIRING DIAGRAM—MODEL 629—FIRST SERIES

MODEL 629



MODEL - 629  
455 KC. I.F.

TUBES MAY BE EITHER  
"M", "B", OR "GT" TYPES

ELECTRICAL PARTS		CORPORATED IN SECOND SERIES	
1	W -37922	Dial Light, 4-B Volt	
	G13 -45398	Dial Light Socket Assy.	
2	B -45769A	Power Cord and Plug	
3	G186-32000	Antenna Coil	
	G8 -48821	Loop Antenna Assy.	
	G6 -48821	Antenna Support Assy.	
	49060	Loop Support Block	
4	G184-32002	Oscillator Coil	
5	G230-32004	1st I-F. Assy. (455 Kc.)	
6	G188-32004	2nd I-F. Assy. (455 Kc.)	
7	W -28621	Condenser, .02 Mf. 200 V.	
8	G76 -33001	2 Section Gang Condenser	
9	W -27216	Condenser, .05 Mf. 200 V.	
10	G2 -34002	Condenser, .0001 Mf. Molded	
11	W -30805	Condenser, .01 Mf. 400 V.	
12	G2 -34002	Condenser, .0001 Mf. Molded	
13	W -23191A	Condenser, .01 Mf. 400 V.	
14	W -34713	Condenser, .006 Mf. 160 V.	
15	W -23191A	Condenser, .01 Mf. 400 V.	
16	W -47256	Condenser, 10-10 Mf. 400 V.	
17A	W -35011	Condenser, .006 Mf. 160 V.	
17B	W -35011	Condenser, .03 Mf. 160 V.	
18	W -35928	Resistor, 60,000 Ohms 1/4W.	
19	W -36688	Resistor, 3 Megohms 1/4W.	
20	W -6706	Resistor, 25,000 Ohms 1W.	
21	W -23490	Resistor, 10 Megohms 1/4W.	
22	W -35600	Resistor, 100,000 Ohms 1/4W.	
23	W -36322	Resistor, 500,000 Ohms 1/4W.	
24	W -35601	Resistor, 300,000 Ohms 1/4W.	
25	W -36322	Resistor, 500,000 Ohms 1/4W.	
26	W -36761	Resistor, 40,000 Ohms 1/4W.	
27	480-BP-15-"Z"	Speaker, Mfg. Spec. No. E61327	
	480-BP-15-"M"	Speaker, Mfg. Spec. No. 1-D-1549	
	480-BP-15-"R"	Speaker, Mfg. Spec. No. F-5739	
	480-BP-15-"B"	Speaker, Mfg. Spec. No. 801Q3	
	462-CP-11-"M"	Speaker, Mfg. Spec. No. 1-D-971	
28	B -47745	Tone-Phono-Radio Switch	
29	W -47823	Power Trans., 110 V. 60 Cycle	
	W -48518	Power Trans., 110 V. 50-50 Cycle	
	W -48519	Power Trans., 220 V. 50-60 Cycle	
	W -47019	Power Trans. Support Strip	
30	W -47783A	Vol. Cont. (1 Meg.) and Line Switch	
31	G193-32004	455 Kc. Wave Trap (Not on Loop Models)	
32	None		
33	None		
34	G5 -34002	Condenser, .00005 Mf. Mica	
35	W -35927	Resistor, 2 Megohms 1/4W.	
		<b>DIAL PARTS</b>	
	W -47807	Dial Glass (1725-540 Kc.)	
	D -48976	Dial Glass (Loop 535-1620 Kc.)	
	W -45875A	Dial Glass Cushion (2)	
	W -46661	Dial Glass Support Bracket	
	W -46020	Dial Glass L. H. Mtg. Clip	
	W -48187	Dial Glass R. H. Mtg. Clip	
	W -45890A	Dial Hand (Pointer)	
	W -46035	Dial Hand Guide	
	W -48381A	Drive Shaft	
	W -45878A	Shaft Mtg. Bracket	
	G29 -41582	Drive Cord (40.5 Inches)	
	G12 -43564	Pulley and Hub Assy.	
	W -46087	Spring—Drive Cord Tension	
	W -48294	Pulley (Drive Shaft)	
	W -47265	Washer (Drive Shaft)	
	W -48382	Spring (Pulley Friction)	
		<b>PUSH BUTTON TUNING PARTS</b>	
	G39 -45683	Push Button Unit	
	W -50542E	Lock Clamp	
	W -50561	Rocker Plate Bearing Screw	
	W -50567	Key Setting Screw	
	G57 -45683	Key and Toggle Assy.	
	G22 -45683	Rocker Plate and Gear Assy.	
	W -50607C	Spring—Key Return	
	W -46841A	Push Button	
	W -46065	Rubber Grommet (Brkt. Front Mtg.)	
	W -44023	Headed Bushing (Brkt. Front Mtg.)	
	W -45580	Rubber Grommet (Brkt. Rear Mtg.)	
	W -45620	Headed Bushing (Brkt. Rear Mtg.)	
	W -47822	Station Call Letter Tabs	
	W -50551B	Call Letter Cover (Celluloid)	
		<b>RECEIVER MOUNTING PARTS</b>	
	W -45764D	Chassis Bottom Strap	
	C -47758B	Chassis Bottom Cover	
	B -47706A	R. H. Receiver Mtg. Bracket	
	R -47707A	L. H. Receiver Mtg. Bracket	
	W -47728	Decorative Washer (Receiver Mtg.)	
	W -47761	Phillips Oval Hd. Screw (Receiver Mtg.)	
	W -46953	Knob (1) (Tuning)	
	W -47927	Knob (2) (V. C. and Phono-Radio Sw.)	
	MC31-47771	Instruction Envelope Assy.	
	W -49135	Instruction Booklet	
		<b>SPEAKER MOUNTING PARTS</b>	
	W -47721	No. 8—32 x 1" Sw. Hd. Sokr. Mtg. Screw	
	N -8	No. 8—32 Nut (Spkr. Mtg.)	
	W -2046	No. 8 Lockwasher (Spkr. Mtg.)	
	W -47741	Speaker Plate	
	W -47217	Grommet (Plate Mtg.) (3)	
	W -46461	Headed Bushing (Plate Mtg.)	
	W -47740A	Speaker Dust Cloth	
	W -47710	Plate Shock Pad	
		<b>RECORD PLAYER PARTS</b>	
	W -47787	Phono Motor, 110 V. 60 Cy. (Alliance)	
	W -46172	Turntable—For 47787 Motor only	
	W -48415	Turntable Rubber Drive Pulley (47787 Motor only)	
	W -48455	Phono Motor—110 V. 50-60 Cycle (Webster) Assy.	
	W -49596	Phono Motor—110 V. 50-60 Cycle only (Webster)	
	W -49597	Phono Motor—220 V. 50-60 Cycle only (Webster)	
	W -49539	Turntable—For 49596 and 49597 only	
	W -49542	Turntable Rubber Drive Pulley (Webster)	
	W -49346	Stud and Link—Drive Pulley Mtg.	
	W -49543	Mtg. Pin Spr.—Drive Pulley Retainer	
	W -48458	Motor Shaft Pulley (60 Cy. Operation)	
	W -48459	Motor Shaft Pulley (50 Cy. Operation)	
	W -47755	Phono Mounting Plate	
	W -46065	Rubber Grommet—Mtg. Plate	
	W -46461	Headed Bushing—Mtg. Plate	
	W -37953	Flat Washer—Motor Mtg.	
	W -48364	Screw—Phono Plate Mtg.	
	W -48980	Pickup (Tone Arm)	
	W -47328	Shakeproof Washer—Pickup Mtg.	
	W -47329	Nut—1/4"-32—Pickup Mtg.	
	W -48977	Crystal Cartridge only	
	W -47322	Needle Screw	
	W -49647	Tone Arm—Casting only	
	W -49646	Mtg. Stud and Pivot Bracket only	
	W -49645	Pivot Spring Assy. only	
	W -47335	Pickup (Tone Arm)	
	W -47327	Flat Washer—Pickup Mtg.	
	W -47328	Shakeproof Washer—Pickup Mtg.	
	W -47329	Nut—1/4"-32—Pickup Mtg.	
	W -47325	Crystal Cartridge only	
	W -47324	Needle Screw	
	W -47326	Arm and Pivot—Assy. only	
	W -47333	Pickup Rest Bracket	
	W -47788	Rest Bracket Spacer Block	
	W -7662	Screw (No. 8—1/4") Bracket Mtg.	
	W -47724	Rubber Rest (Tone Arm)	
	W -47335	Rubber Locking Ring (Tone Arm Rest)	
	W -47791	Needle Cups	
	W -47790	Cup Cover	
	W -46364	Chrome Tip Needle	
	W -9FM	Cabinet	
	W -47772	Shipping Carton (9FP Cab.)	
	W -47773	Cabinet Back	
	W -46464	Thumb Screw—Back Mtg.	
	W -49415	Lid (Finished Cabinet)	
	W -49606	Handle—For Cabinet Lid	
	W -130043	Hinge—For Cabinet Lid	
	W -130042	Support Bracket—Cabinet Lid	
		<b>CHANGES INCORPORATED IN SECOND SERIES</b>	
		(Compare Wiring Diagrams Fig. 1A and Fig. 1B)	
	W -36322	500,000 Ohm Resistor, Deleted	
	W -36322	500,000 Ohm Resistor, Deleted, Replace by Item 36	
	W -47779	Cond., .001 Mf. Across Pickup, Deleted	
	W -51374	Input Choke (Audio)	
	W -25435	Condenser, .003 Mf. 400 V.	
	W -23191	Condenser, .01 Mf. 400 V.	
	W -35600	Resistor, 100,000 Ohms 1/4W.	
	W -35600	Resistor, 100,000 Ohms 1/4W.	

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	G <sub>1</sub>	G <sub>2</sub>	G <sub>3</sub>	K
6A7	Osc-Mod	6.3	220	80	—	0	-4 to -10	—	105	2.5
6D6	I. F. Amplifier	6.3	220	105	3.3	0	—	—	—	3.3
76	Diode Detector	6.3	—	—	—	—	—	—	—	0
6D6	A. F. Amplifier	6.3	20	20	0	1.0	—	—	—	0
42	Output	6.3	210	220	—	8.0	—	—	—	0
80	Rectifier	4.9	220	—	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

Power Consumption Approximately 60 Watts.

1. Peaking I. F. Stages at 450 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.
- (b) Turn the tuning condenser rotor plates until they are completely meshed.
- (c) Turn the band selector switch to the short wave band (extreme left hand position).
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output.
- (f) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

2. Peaking R. F. Circuits—Broadcast Band (540 to 1700 K. C.)

- (a) Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.
- (b) Turn the tuning condenser rotor plates until they are COMPLETELY OUT OF MESH.
- (c) Turn the band selector switch to the broadcast band (extreme right hand position).
- (d) Set the signal generator at 1720 kilocycles.
- (e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output.
- (f) Set the signal generator at 1400 kilocycles.
- (g) Tune-in the 1400 kilocycles signal with the station selector.
- (h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.
- (i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.
- (j) Set the signal generator to 600 kilocycles.
- (k) Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output dial.

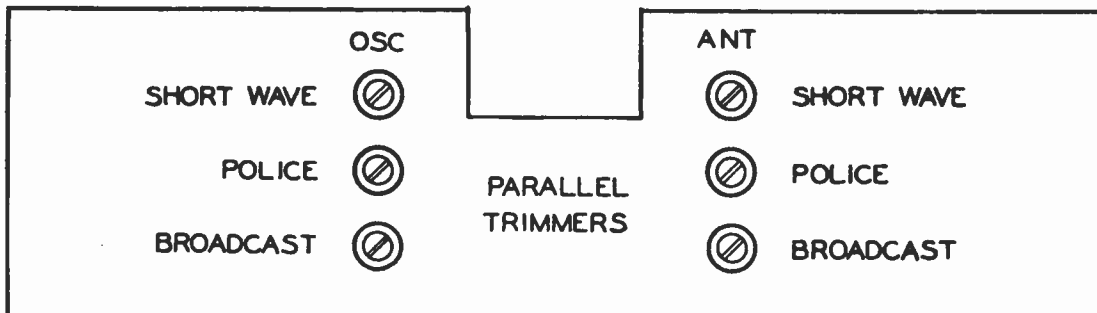
- (l) Adjust the oscillator series trimmer, while rocking the condenser gang plates back and forth slightly, until no further increase in output can be obtained.

3. Peaking R. F. Circuits—Police Band (1700 to 5000 K. C.)

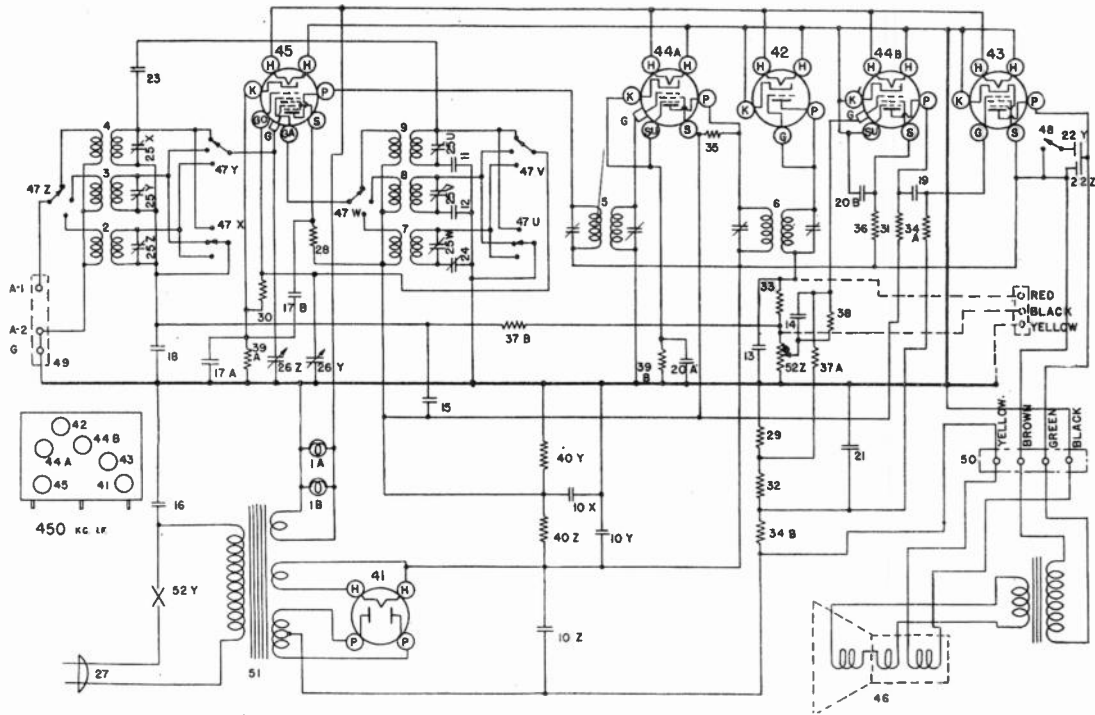
- (a) Turn the band selector switch to the police band (middle position).
- (b) Set the signal generator to 5000 kilocycles. (5.0 megacycles).
- (c) Turn the station selector to 5 on the police band.
- (d) Adjust the oscillator parallel trimmer (P. Band) for maximum output.
- (e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

4. Peaking R. F. Circuits—Short Wave Band (5.4 to 15 Meg.)

- (a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.
- (b) Turn the band selector switch to the short wave band (left hand position).
- (c) Set the signal generator to 15 megacycles.
- (d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.
- (e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.
- (f) Turn the station selector to 15 on the dial (S-W Band.)
- (g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency.
- (h) Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.
- (i) Adjust the antenna parallel trimmer (S-W Band) for maximum output, then re-tune the station selector for maximum output.



MODEL 635



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4-27134	Dial Light Bracket Assembly.	32	-34018	Resistor, 200,000 Ohms.
1B	G4-27134	Dial Light Bracket Assembly.	33	-21455	Resistor, 300,000 Ohms.
2	G39-32000	Coil, Ant. Trans. 540-1725 Kc.	34A	-23785	Resistor, 500,000 Ohms.
3	G43-32000	Coil, Ant. Trans. 1.7-5.2 Mc.	34B	-23785	Resistor, 500,000 Ohms.
4	G40-32000	Coil, Ant. Trans. 5.3-15.5 Mc.	35	-21454	Resistor, 1 Megohm.
5	G39-32004	Coil, 1st. I. F. Trans.	36	-34883	Resistor, 2 Megohm.
6	G4-31927	Coil Shield Assembly.	37A	-26577	Resistor, 3 Megohm.
	G38-32004	Coil 2nd. I. F. Trans.	37B	-26577	Resistor, 3 Megohm.
7	G4-31927	Coil Shield Assembly.	38	-26577	Resistor, 5 Megohm.
8	G34-32002	Coil, Osc. 540-1725 Kc.	39A	-25937	Resistor, 275 Ohm, 1/4 Watt.
9	G35-32002	Coil, Osc. 1.7-5.2 Mc.	39B	-25937	Resistor, 275 Ohm, 1/4 Watt.
10Z	G32-32002	Coil, Osc. 5.3-15.5 Mc.	40Z	W-35963	Resistor, 8,500 Ohm, 3 Watt.
10Y	B-30059-C	Condenser, 8 Mfd. 450 Volts.	40Y	W-35963	Resistor, 25,000 Ohm, 3 Watt.
10X	B-30059-C	Condenser, 8 Mfd. 450 Volts.	41	G6-28807	Socket, 80.
11	G12-34000	Condenser, 4725 Mmf.	42	G80-28807	Socket, 76.
12	G7-34000	Condenser, 1450 Mmf.		W-35774	Shield Base.
13	G2-34002	Condenser, 0.0001 Mfd. 200 Volt.		W-35772	Shield Half (2 used).
14	W-28619	Condenser, 0.006 Mfd. 200 Volt.		W-36280	Shield Cap.
15	W-32378	Condenser, 0.01 Mfd. 400 Volt.	43	G25-28807	Socket, 42.
16	W-30805	Condenser, 0.02 Mfd. 200 Volt.	44A	G75-28807	Socket, 6D6.
17A	W-28621	Condenser, 0.02 Mfd. 200 Volt.	44B	G75-28807	Socket, 6D6.
17B	W-28621	Condenser, 0.02 Mfd. 200 Volt.		W-35774	Shield Base.
18	W-32380	Condenser, 0.05 Mfd. 200 Volt.		W-35772	Shield Half (2 used)
19	W-27216	Condenser, 0.05 Mfd. 200 Volt.		W-35773	Shield Cap.
20A	W-24049B	Condenser, 0.1 Mfd. 200 Volt.	45	G47-28807	Socket, 6A7
20B	W-24049B	Condenser, 0.1 Mfd. 200 Volt.		W-35774	Shield Base.
21	W-30321A	Condenser, 1.0 Mfd. 180 Volt.		W-35772	Shield Half (2 used).
22Z	W-35011	Condenser, 0.006 Mfd. 400 Volt.	46	W-35773	Shield Cap.
22Y	W-35011	Condenser, 0.03 Mfd. 400 Volt.	46	-318BL	Speaker.
23	G49-34403	Condenser, 1.0 Mmf.	47	B-35935	Switch, Band Change.
24	G10-33005	Condenser, Var. 540-1725 Kc.	48	W-35937	Switch, Tone Control.
25Z	W-35951	Trimmer Condenser Assembly.	49	G16-26719	Terminal, Speaker.
25X	W-35951	Trimmer Condenser Assembly.	G5	-31128	Transformer, Power, 60 Cy., 110 Volt.
25W	W-35951	Trimmer Condenser Assembly.	G8	-28500	Transformer, Power, 25 Cy., 110 Volt.
25V	W-35951	Trimmer Condenser Assembly.	G9	-28500	Transformer, Power, 25 Cy., 220 Volt.
25U	W-35951	Trimmer Condenser Assembly.	G10	-28500	Transformer, Power, 25 Cy., 220 Volt.
26Z	B-35025	Condenser, Variable Tuning Gang.	52Z	-35938	Volume Control, 1 Megohm.
26Y	B-35025	Condenser, Variable Tuning Gang.	52Y	-35938	Volume Control, 1 Megohm.
27	G29-32086	Dial Drive Assembly.		W-36492	On-Off Switch.
28	B-33905	Cord, Power Supply.		W-36531A	Knobs.
29	-35934	Resistor, 6,500 Ohms.		B-36560	Knob (Tail).
30	-22831	Resistor, 15,000 Ohms.		W-36563	Eucutcheon.
31	-21875	Resistor, 100,000 Ohms.		C-35946	Glass.
				W-37198	Dial only.
				W-32293	Dial Hand.
					Dial Hand Nut.

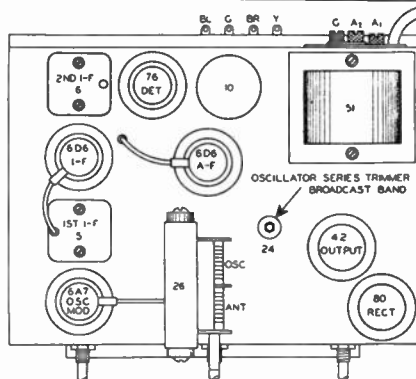


Fig. 2. Top View 635

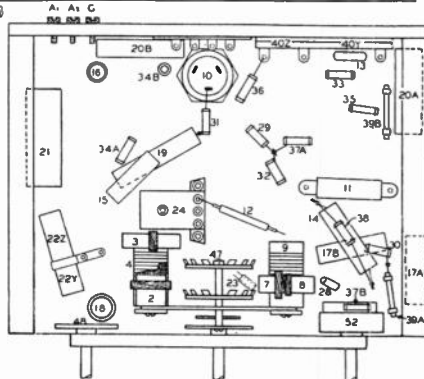


Fig. 3. Bottom View 635

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	180	105	—	1.5	—	—
6A7	Oscillator-Mod.	6.0	180	95	—	3.5	120	-8. Q
6B7	I-F Amp.-Diode Det.	6.0	180	95	—	3.0	—	—
15	A-F Amplifier	2.0	130	80	—	—	—	—
15	Audio Driver	2.0	180	—	—	—	—	—
19	Twin Output	2.0	180	—	—	—	—	—

"A" Battery Drain Approximately 2.8 Amperes at 6.0 Volts.  
Power Output Approximately 2 Watts.

1. Tuning I-F Amplifier To 450 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the right (High Frequency Band).
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.
- (f) Adjust the trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal at both the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers (Illus. Nos. 68, 28Z and 28Y top view, Fig. 2) set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kc.	600 Kc.
6.0 Mc.	2.0 Mc.
18.0 Mc.	6.0 Mc.

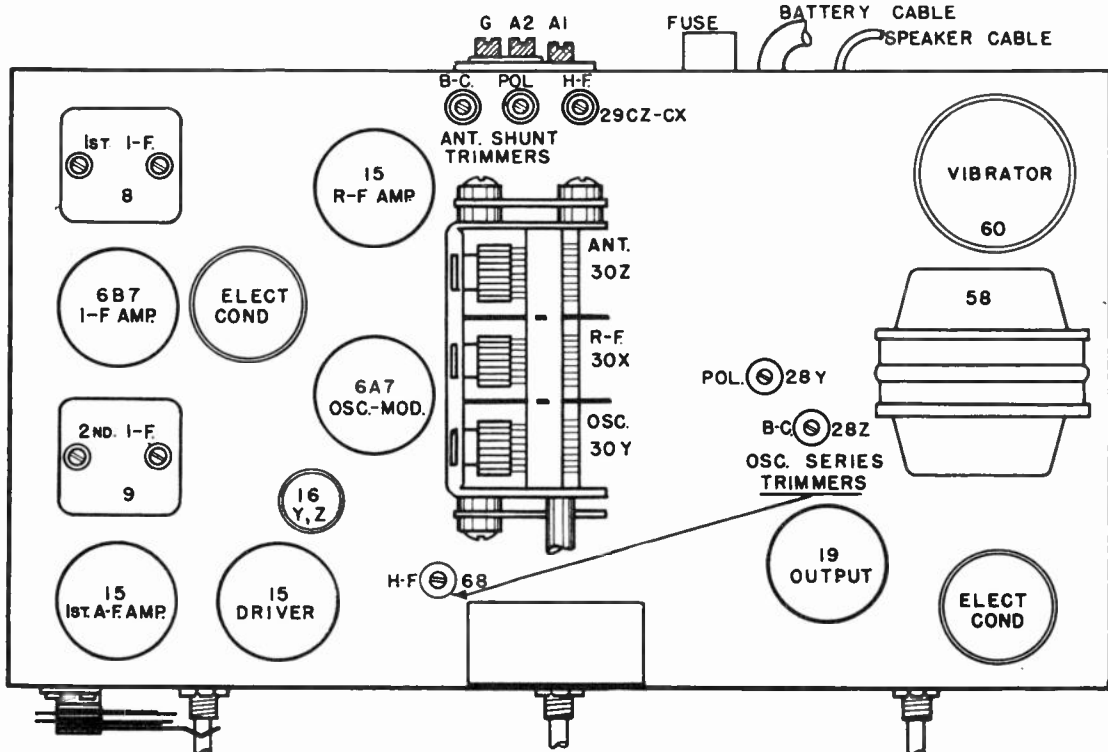


Fig. 2. Top View 636

MODEL 636

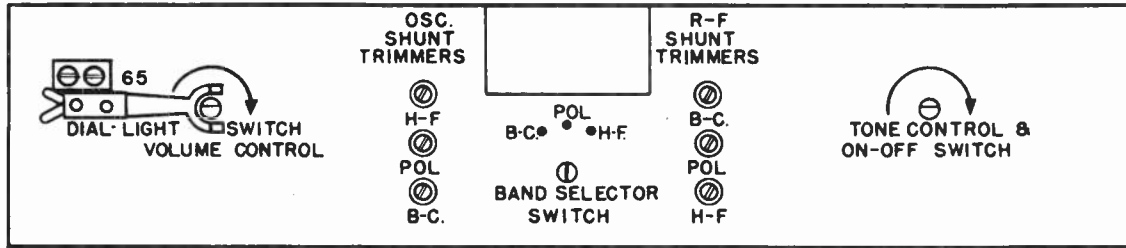


Fig. 4. Front View 636

PARTS LIST—MODEL 636

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Dial Light	39	—34020	Resistor 250,000 Ohm 1/4 W. Ins.
	G3 —37965	Dial Light Bracket Assembly	40	—36321	Resistor 400,000 Ohm 1/4 W. Ins.
2	G18 —28067	Choke—L-F. "A" Filter	41A	—36322	Resistor 500,000 Ohm 1/4 W. Ins.
3	G1 —24234	Choke—H-F. "B" Filter	41B	—36322	Resistor 500,000 Ohm 1/4 W. Ins.
4	G44 —24628	Choke—L-F. "B" Filter	42	—36688	Resistor 3 Megohm 1/4 W. Ins.
5	G110—32000	Ant. Coil B-C-B.	43	—26578	Resistor 5 Megohm 1/4 W. Car.
6	G111—32000	Ant. Coil Pol.-B.	44	W —41202	Resistor 15 Ohm 1. W. Flexible
7	G112—32000	Ant. Coil H-F-B.	45	W —21965	Resistor 375 Ohm 1. W. Flexible
8	G106—32004	1st. I-F Assembly	46	W —36176	Resistor 1.3 Megohm 1/4 W. Ins.
9	G105—32001	2nd I-F Assembly	47	W —35581	Resistor 1000 Ohm 3/4 W. Flexible
10	G98 —32002	Osc. Coil B-C-B.	48A	G88 —28807	Socket Type 15
11	G99 —32002	Osc. Coil Pol.-B.	48B	G88 —28807	Socket Type 15
12	G107—32002	Osc. Coil H-F-B.	48C	G88 —28807	Socket Type 15
13	G76 —32001	R-F. Coil B-C-B.	49	G44 —28807	Socket Type 19
14	G77 —32001	R-F. Coil Pol.-B.	50	G92 —28807	Socket Type V1B
15	G78 —32001	R-F. Coil H-F-B.	51	G47 —28807	Socket Type 6A7
16Z	W —37778	Condenser 12. Mf. 25 V. } Electrolytic	52	G48 —28807	Socket Type 6B7
16Y		12. Mf. 25 V. }	W —37981A		Tube Shield Base
17A	W —36057	Condenser 40. Mf. 300 V. Electrolytic	W —40911		Tube Shield
17B	W —36057	Condenser 40. Mf. 300 V. Electrolytic	53	—42PJ-4	Speaker Spec. R-8000 B1
18A	W —38433	Condenser .5 Mf. 160 V. Tubular		—41452	Speaker Cone Assy. (Mtg. Ring 41459)
18B	W —38433	Condenser .5 Mf. 160 V. Tubular		—41455	Speaker Output Transformer for
19	W —37173	Condenser .25 Mf. 300 V. Tubular			Above Speaker
20	G3 —34000	Condenser .002200 Mica.	54	C —40910	Band Selector Switch
21	G2 —34002	Condenser .0001 Molded	55	G27 —26719	Ant. & Gnd. Terminal Assembly
22A	G1 —34002	Condenser .00025 Molded	56Z		Tone Control
22B	G1 —34002	Condenser .00025 Molded	56Y		On-off Switch
23	W —37214	Condenser .001 Mf. 1000 V. Oil Sealed	57	G47 —24628	Audio Transformer
24A	W —36541	Condenser .02 Mf. 160 V.	58	G4 —31618	Power Transformer
To			59	W —28621	Condenser .02 Mf. 200 V.
24G	W —36541	Condenser .02 Mf. 160 V.	60	W —37216	Vibrator
25	W —35139	Condenser .004 Mf. 400 V.		W —37225	Vibrator Cover
26	W —22688	Condenser .1 Mf. 400 V.		W —33312A	Vibrator Sleeve
27	W —32780	Condenser .05 Mf. 400 V.	61	—37967	Volume Control 1 Megohm.
28	—37874	Double Osc. Series Trimmer	62	W —28621	Condenser .02 Mf. 200 V.
29	W —35951A	3 Section Shunt Trimmer Cond. Assy.	64	W —25435	Condenser .003 Mf. 400 V.
30	G50 —33002	3 Section Var. Tuning Condenser	65	W —41068A	Dial Light Switch
	MG43—41118	Dial Assembly Complete	66	G8 —34000	Condenser .0015 Mf. Mica
	D —41629	Dial	67	W —24049B	Condenser .1 Mf. 200 V.
	—41135	Mask	68	W —41369	H-F. Osc. Series Trimmer
	—40485	Long Hand	69A	—35602	Resistor 1. Megohm Ins.
	—41145	Short Hand	69B	—35602	Resistor 1. Megohm Ins.
	—41157	Drive Belt	70	W —31103	10 Amp. Fuse
	—40537	Coupling Unit	W —33310A		Fuse Cover
	—40486	Pointer Screw	W —34223		Cover Insulator
	—40638	Indicator Control Cable	G2 —33339		Fuse Panel Assembly
31	MG21—41118	Battery Cable & Clips	W —4072		Thumb Screw
	—34903	Pos. (+) Clip	C —37894		Escutcheon Ring
	—34904	Neg. (-) Clip	B —37896A		Escutcheon Retaining Ring
32	G8 —35696	Speaker Cable	W —40365		Escutcheon Felt
33	—38428	Resistor 4500 Ohm 1/4 W. Ins.	B —37898		Escutcheon Glass
34	—36317	Resistor 10,000 Ohm 1/4 W. Ins.	B —41659		Escutcheon Glass Retaining Ring
35A	—37485	Resistor 15,000 Ohm 1/2 W. Car.	W —40192B		Tail Knob (1)
35B	—37485	Resistor 15,000 Ohm 1/2 W. Car.	W —41605		Knob (2)
36	—33390	Resistor 30,000 Ohm 1/4 W. Car.	W —41221		Upper } V. C. & Dial Light Switch
37	—40757	Resistor 50,000 Ohm 1/4 W. Ins.	W —41222		Lower }
38	—35929	Resistor 150,000 Ohm 1/4 W. Ins.			

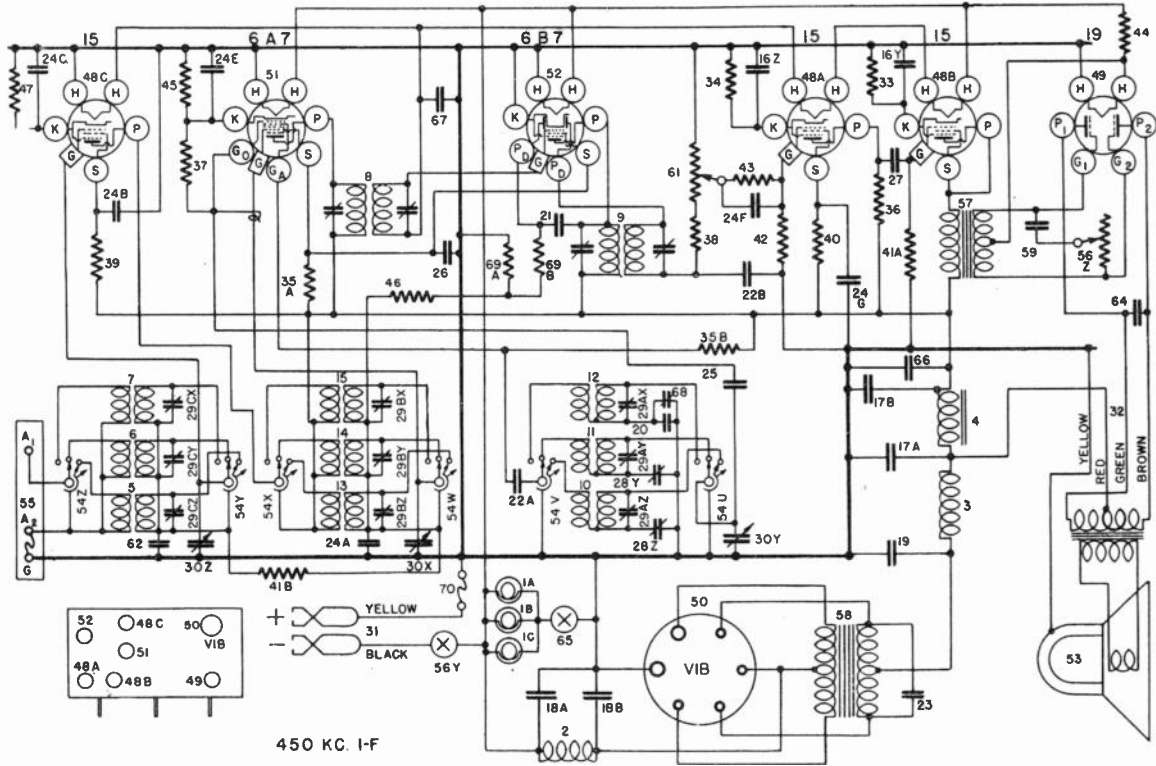


FIG. 1—WIRING DIAGRAM—MODEL 636

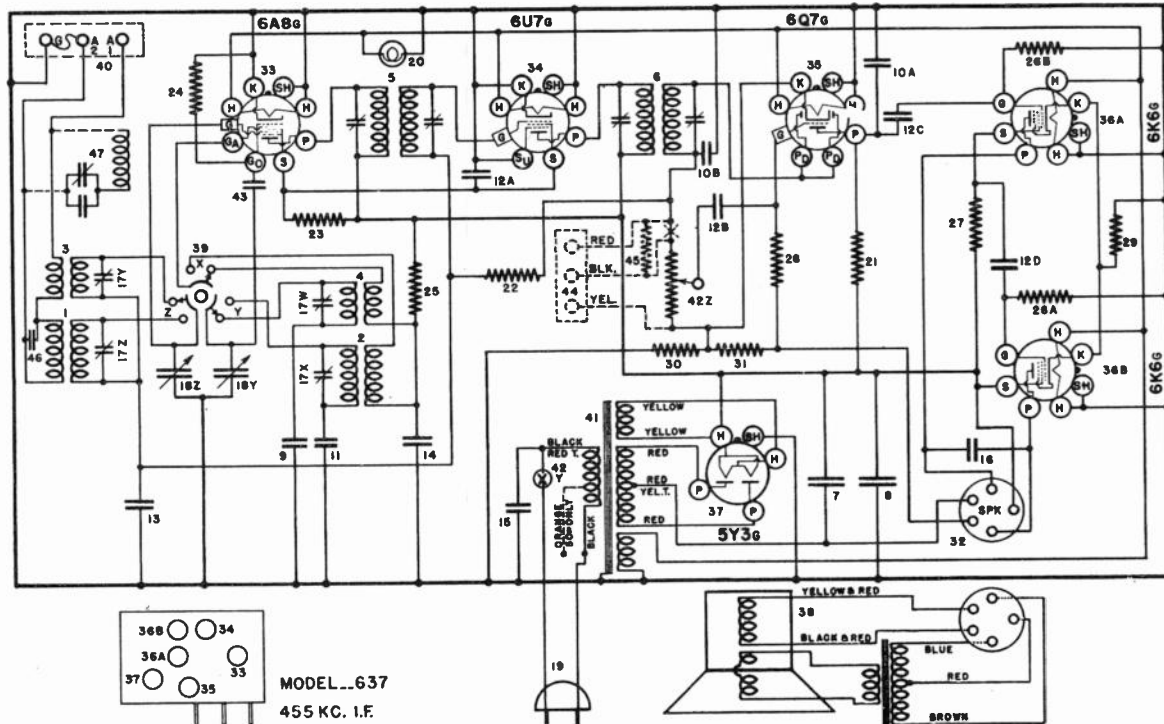


FIG. 1—WIRING DIAGRAM—MODEL 637

## CHASSIS MODEL 637

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	210	120	0	-15	190
6U7G	I-F Amplifier	6.3	210	120	0	—	—
6Q7G	Det, AVC & A-F Amp.	6.3	90	—	-3	—	—
6K6G	(2) Output	6.3	205	210	20	—	—
5Y3G	Rectifier	5.0	—	—	215	—	—

Power output approximately 4.5 watts.

Power consumption approximately 60 watts at 11.5 volts.

Voltage drop across speaker field 60 volts.

#### Tuning I-F Amplifier to 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

#### Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL ¶ (C)** is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer.

#### (C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
High Frequency Band

**Minimum Capacity Signal**  
1,725 Kilocycles  
18,300 Kilocycles

**Shunt Alignment Signal**  
1,400 Kilocycles  
18,000 Kilocycles

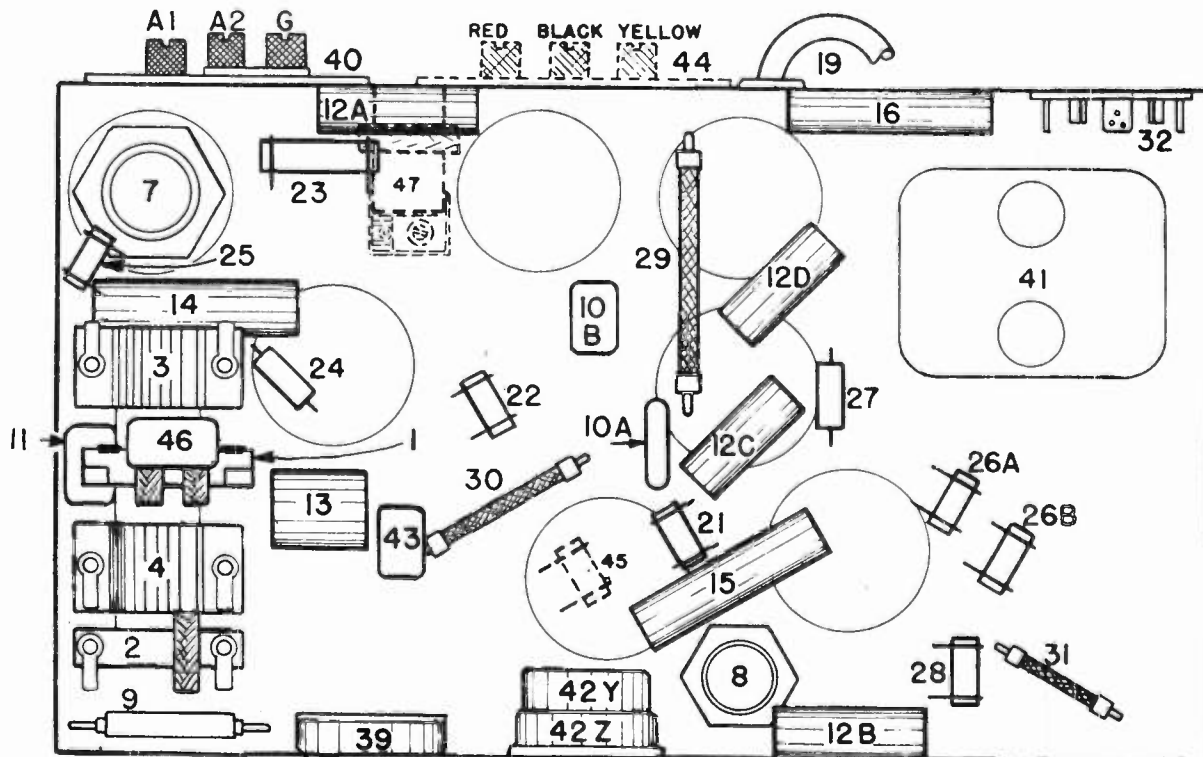


Fig. 3 Bottom View—Model 637



PARTS LIST—MODEL 637

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G143-32000	Ant. Coil, B-C.	25	-30137	Resistor, 3,500 Ohm 1/8W. Carbon
2	G145-32002	Osc. Coil, B-C.	26A	-33344	Resistor, 400,000 Ohm 1/4W. Carbon
3	G142-32000	Ant. Coil, H-F.	26B	-33344	Resistor, 400,000 Ohm 1/4W. Carbon
4	G144-32002	Osc. Coil, H-F.	27	-44009	Resistor, 3,000 Ohm 1/4W. Ins.
5	G156-32004	1st I-F. Assy.	28	-34883	Resistor, 2 Megohm 1/8W. Carbon
6	G157-32004	2nd I-F. Assy.	29	W -43462	Resistor, 375 Ohm 2 1/2W. Flex.
7	W -36057B	Condenser, 40 Mf. 300 V.	30	W -23012A	Resistor, 40 Ohm 3/4W. Flex.
8	W -41081	Condenser, 16 Mf. 250 V.	31	W -37631	Resistor, 32 Ohm 1/2W. Flex.
9	G16 -34000	Condenser, 3,800 Mmf. (H-F. Osc. Series)	32	G103-28807	Socket-Speaker
10A	G1 -34002	Condenser, .00025 Mf. Molded	33	G156-36400	Socket, Type 6A8
10B	G1 -34002	Condenser, .00025 Mf. Molded	34	G171-36400	Socket, Type 6U7
11	G14 -34002	Condenser, .0004 Mf. (B-C. Osc. Series)	35	G160-36400	Socket, Type 6Q7
12A	W -28621	Condenser, .02 Mf. 200 V.	36AB	G172-36400	Socket, Type 6K6
12B	W -28621	Condenser, .02 Mf. 200 V.	37	G173-36400	Socket, Type 5Y3
12C	W -28621	Condenser, .02 Mf. 200 V.		W -40911	Tube Shield
12D	W -28621	Condenser, .02 Mf. 200 V.		W -43552	Spk. Plug Clamp
13	W -36541	Condenser, .02 Mf. 160 V.	38	365BP12"M"	Speaker—Spec. 1-D-1089
14	W -23615	Condenser, .05 Mf. 400 V.		-44542	V. C. and Cone Assy. } Used on
15	W -30805	Condenser, .01 Mf. 400 V.		-44273	Field Coil } 365BP12"M"
16	W -28619	Condenser, .006 Mf. 200 V.		-44274	Output Trans. } Spk.
17	W -41247A	4 Sect. Shunt Trimmer Assy.	39	W -43448A	Band Switch
18	G42 -33001	2 Sect. Gang. Cond.	40	G27 -26719	Ant. and Gnd. Terminal
	-44343D	Dial Face (Glass)	41	-44356	Pwr. Trans., 60 Cy.—110 V.
	W -44085B	Dial Mask		-44359	Pwr. Trans., 50 Cy.—110 V.
	C -44379A	Support Brkt. (Dial Glass)		-44360	Pwr. Trans., 50 Cy.—220 V.
	W -44084A	Support Ring (Dial Glass)		-44357	Pwr. Trans., 25 Cy.—110 V.
	W -43542B	Drive Shaft Bracket		-44358	Pwr. Trans., 25 Cy.—220 V.
	W -44134	Drive Shaft	42	-43449A	Vol. Cont. (1/2 Meg.) and Switch
	W -43549	Retaining Ring (Shaft)	43	G13 -34002	Cond., .000035 Mf. Molded
	G1 -43564	Pulley and Hub Assy.	44	G37 -26719	Phono-Terminal Board
	W -44299	Pointer	45	-21875	Res., 100,000 Ohm 1/8W. Used only on Sets with Phono-Terminals
	W -40486	Screw FS 20 (Pointer Mtg.)	46	G5 -34002	Cond., .00005 Mf. Molded
	W -43561	Tension Spring	47	G165-32004	Wave Trap Assy. (460 Kc.)
	-41582	Drive Cord (18 1/4")		7E	Cabinet
19	B -44004	Pwr. Cord and Plug		B -44226B	Escutcheon
20	W -43567	Dial Light, 6-8 V.		W -44381B	Knob (3 Req.)
	G5 -44363	Light Socket Assy.		W -43553	Rubber Mtg. Foot
21	-21455	Resistor, 300,000 Ohm 1/4W. Carbon			
22	-26577	Resistor, 3 Megohm 1/4W. Carbon			
23	-37485	Resistor, 15,000 Ohm 1/2W. Carbon			
24	-35928	Resistor, 60,000 Ohm 1/4W. Ins.			

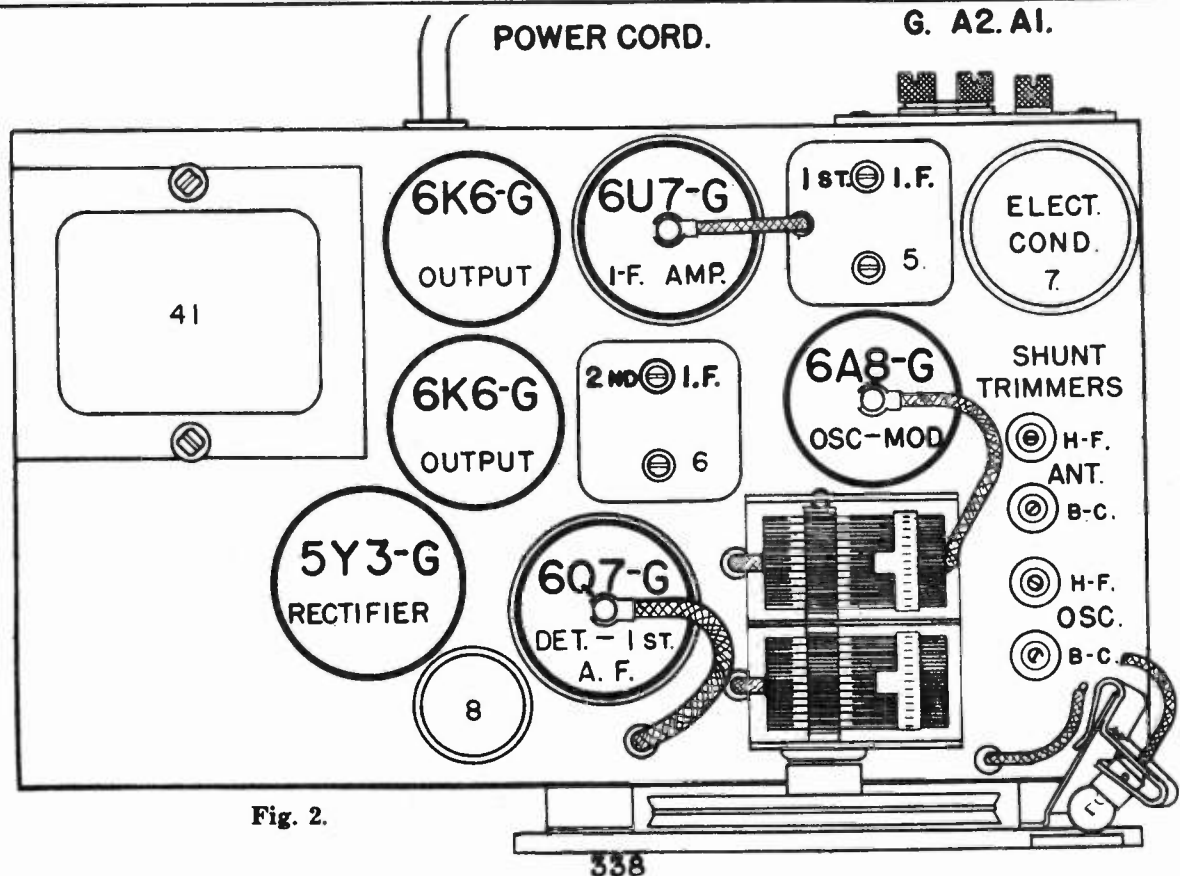


Fig. 2.

## CHASSIS MODEL 639

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	G <sub>a</sub>	G <sub>o</sub>
6A8G	Oscillator-Modulator	6.3	230	68	—	—	68	Neg.
6K7G	I-F Amplifier	6.3	230	68	—	—	—	—
6Q7G	Detector—A. V. C.—1st A-F	6.3	74	—	—	—	—	—
6P5G	Driver	6.3	230	—	+13	—	—	—
6AC5G	Power Output	6.3	225	—	—	+13	—	—
5Y3G	Rectifier	5.0	—	—	—	—	—	—

Voltage drop across speaker field 44 volts.

Maximum power output approximately 5 watts.

Power consumption at 117.5 volts approximately 85 watts with phono operating.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect one side of the output meter to the plate of the 6AC5G Output tube and the other to the plate of the 6P5G. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Check operations (d) and (e) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

#### Aligning R. F. Amplifier.

When aligning the R. F. amplifier the output lead from the signal generator is connected to the antenna lead of the receiver, a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

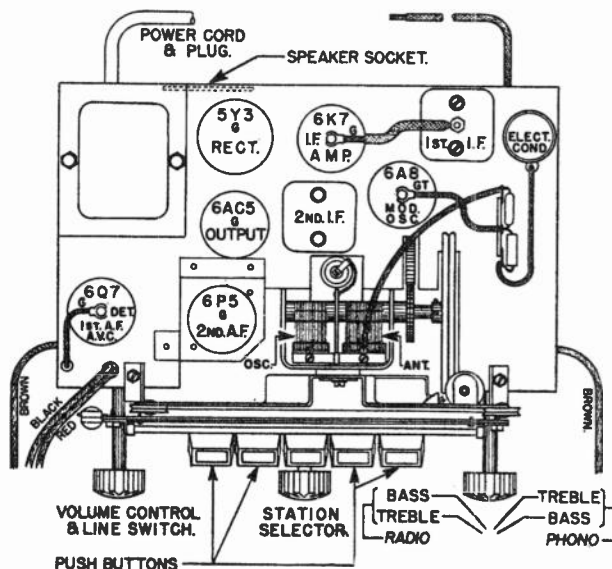
(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL ¶ (C)** is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

If any of the circuits have been re-adjusted it may be necessary to reset the push buttons.

### (C) SIGNAL INPUT FREQUENCIES

Minimum Capacity Signal  
1,725 Kilocycles



**Fig. 2—Top View Model 639**  
**339**

MODEL 639

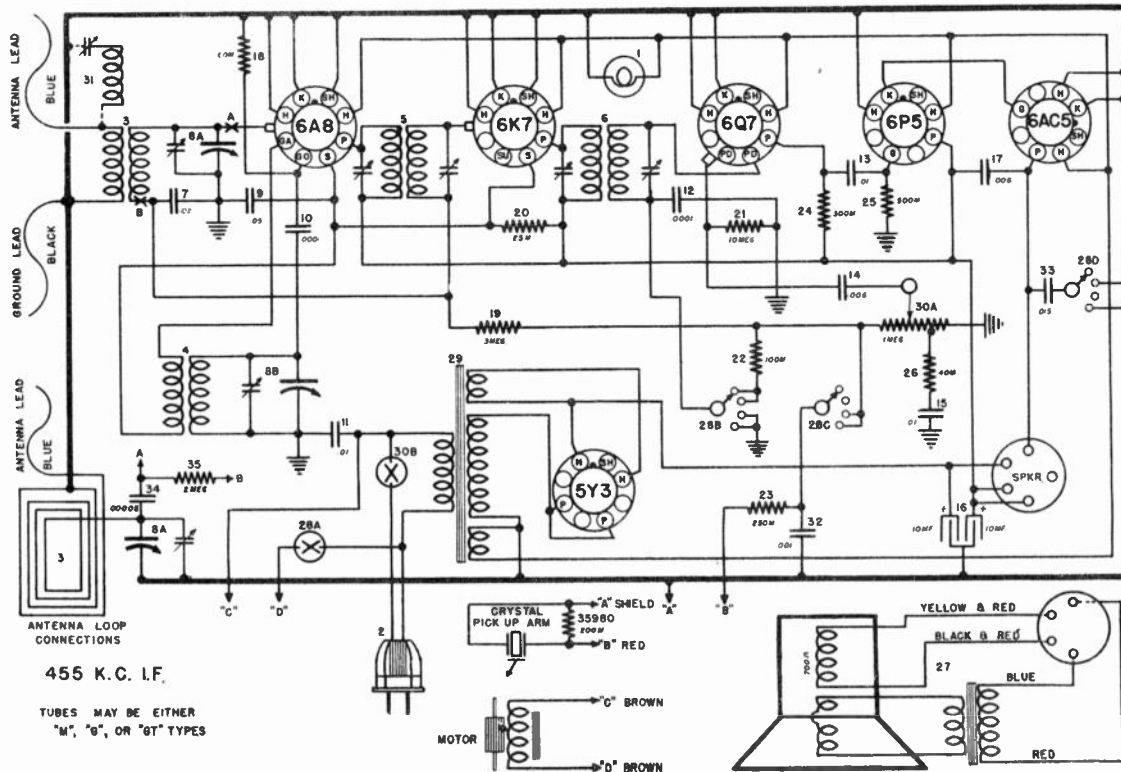


FIG. 1—WIRING DIAGRAM—MODEL 639

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -47922	Dial Light, 6-8 Volt	G57	-45683	Key and Toggle Assy.
2	G13	-45769A Dial Light Socket Assy.	G22	-45683	Rocker Plate and Gear Assy.
3	B	-15769A Power Cord and Plug	W	-50607C	Spring—Key Return
3	G186	-32000 Antenna Coil	W	-46841A	Push Button
4	G184	-32002 Oscillator Coil	W	-46065	Rubber Grommet (Brkt. Front Mtg.)
5	G230	-32004 1st I. F. Assy. (455 Kc.)	W	-44023	Headed Bushing (Brkt. Front Mtg.)
6	G188	-32004 2nd I. F. Assy. (455 Kc.)	W	-45580	Rubber Grommet (Brkt. Rear Mtg.)
7	W	-28621 Condenser, .02 Mf. 200 V.	W	-45630	Headed Bushing (Brkt. Rear Mtg.)
8	G76	-33001 2 Section Game Condenser	W	-47822	Station Call Letter Tabs
9	W	-27216 Condenser, .05 Mf. 200 V.	W	-50551B	Call Letter Cover (Celluloid)
10	G2	-34002 Condenser, .0001 Mf. Molded			<b>RECEIVER MOUNTING PARTS</b>
11	W	-30805 Condenser, .01 Mf. 400 V.	W	-45764D	Chassis Bottom Strap
12	G2	-34002 Condenser, .0001 Mf. Molded	C	-47758B	Chassis Bottom Cover
13	W	-23191A Condenser, .01 Mf. 400 V.	B	-47706A	R. H. Receiver Mtg. Bracket
14	W	-34713 Condenser, .006 Mf. 160 V.	B	-47707A	L. H. Receiver Mtg. Bracket
15	W	-23191A Condenser, .01 Mf. 400 V.	W	-47728	Decorative Washer (Receiver Mtg.)
16	W	-47256 Condenser, 10-10 Mf. 400 V.	W	-47761	Phillips Oval Hd. Screw (Receiver Mtg.)
17	W	-28619 Condenser, .006 Mf. 200 V.			Knob (1) (Tuning)
18	W	-35928 Resistor, 60,000 Ohms 1/2 W.			Knob (2) (V. C. and Phono-Radio Sw.)
19	W	-36688 Resistor, 3 Megohms 1/2 W.	MIG23	-48001	Instruction, Env. Assy.
20	W	-6706 Resistor, 25,000 Ohms 1W.			<b>SPEAKER MOUNTING PARTS</b>
21	W	-33490 Resistor, 10 Megohms 1/2 W.	W	-47721	No. 8—32 x 1" Sw. Hd. Spkr. Mtg. Screw
22	W	-35600 Resistor, 100,000 Ohms 1/2 W.	N	-8	No. 8—32 Nut (Spkr. Mtg.)
23	W	-38976 Resistor, 250,000 Ohms 1/2 W.	W	-3046	No. 8 Lockwasher (Spkr. Mtg.)
24	W	-35601 Resistor, 300,000 Ohms 1/2 W.	W	-47741	Speaker Plate
25	W	-36322 Resistor, 500,000 Ohms 1/2 W.	W	-47217	Grommet (Plate Mtg.) (3)
26	W	-36761 Resistor, 40,000 Ohms 1/2 W.	W	-46461	Headed Bushing (Plate Mtg.)
27	480-HP-15-"Z"	Speaker, Mfg. Spec. No. E8L327	W	-47740A	Speaker Dust Cloth
	480-BP-15-"M"	Speaker, Mfg. Spec. No. 1-D-1549	W	-47710	Plate Shock Pad
	480-BP-15-"B"	Speaker, Mfg. Spec. No. F-5739			<b>RECORD CHANGER PARTS LIST</b>
	480-BP-15-"R"	Speaker, Mfg. Spec. No. 801Q3			-48453A Record Changer, 110 V. 60 Cycle
	462-CP-11-"M"	Speaker, Mfg. Spec. No. 1-D-971			-48331A Record Changer, 220 V. 50 Cycle
28	B	-47745 Tone-Phono-Radio Switch			-48545 Motor, 110 V. 60 Cycle
	W	-48518 Power Trans., 110 V. 50-60 Cycle			-48546 Motor, 220 V. 50 Cycle
	W	-48519 Power Trans., 220 V. 50-60 Cycle			-48543 Tone Arm Assy.
29	W	-4780C Power Trans., 110 V. 60 Cycle			-48542 Crystal Unit
	W	-46019 Power Trans. Support Strip			-48550 Needle Screw
30	W	-47783A Vol. Cont. (1 Meg.) and Line Switch			-48549 Record Brush
31	G193	-32004 455 Kc. Wave Trap (Not on Loop Models)			-48537 60 Cycle Motor Drive Pulley
32	W	-47779 Condenser, .001 Mf. 160 V.			-48536 50 Cycle Motor Drive Pulley
33	W	-30251 Condenser, .015 Mf. 400 V.			-48548 Intermediate Pulley
		<b>DIAL PARTS</b>			<b>MOUNTING PARTS</b>
	D	-48976 Dial Glass	W	-47728	Dec. Hd. Washer (1)
	W	-45875A Dial Glass Cushion (2)	W	-48449	Headed Bushing (Base Mtg.)
	C	-46661 Dial Glass Support Bracket	W	-48736	Rubber Grommet (Base Mtg.)
	W	-48020 Dial Glass L. H. Mtg. Clip	W	-48460	Phillips Hd. Screw (Base Mtg.)
	W	-48187 Dial Glass R. H. Mtg. Clip	W	-44725	Flat Washer (Base Mtg.)
	W	-45890A Dial Hand (Pointer)	N	-10	No. 10 Nut (Base Mtg.)
	W	-46035 Dial Hand Guide	W	-48770	Motor Cover
	W	-48381A Drive Shaft	W	-47791	Needle Cups
	W	-45878A Shaft Mtg. Bracket	W	-47790	Cup Cover
	G29	-41582 Drive Cord (40.5 Inches)	W	-46364	Chrome Tip Needle
	G12	-43564 Pulley and Hub Assy.			-9FP Cabinet
	W	-46087 Spring—Drive Cord Tension			-48370 Shipping Carton (9FP Cab.)
	W	-48294 Pulley (Drive Shaft)			
	W	-47265 Washer (Drive Shaft)			
	W	-48382 Spring (Pulley Friction)			
		<b>PUSH BUTTON TUNING PARTS</b>			
	G30	-45683 Push Button Unit			
	W	-50542E Lock Clamp			
	W	-50561 Rocker Plate Bearing Screw			
	W	-50567 Key Setting Screw			

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	Go	Ga	K
6D6	R-F Amp.	6.3	31.5	32	0	0	—	—	0
6A7	Osc.-Mod.	6.3	32.0	20	—	0	2	32	0
6D6	I-F Amp.	6.3	32.0	32	0	0	—	—	0
85	Det. & A-F Amp.	6.3	32.0	—	—	0	—	—	0
48	Output	25.0	31.5	32	—	0	—	—	5.7
48	Output	25.0	31.5	32	—	0	—	—	5.7

Measured on 32 Volt D-C Line.

Current Drain Approximately 1.35 Amperes at 32 Volts.

## SENSITIVITY CONTROL

The sensitivity control, Illus. No. 35, is a low resistance potentiometer. One end is connected through a condenser to the antenna lead and the other end is connected to the cathodes of the R-F and Osc-Mod tubes. The moving arm is connected to the chassis. When the knob is turned toward the left it simultaneously decreases the resistance across the primary of the antenna coil and increases the grid bias on the R-F and Osc-Mod tubes. This has the effect of decreasing the sensitivity of the receiver and increasing the selectivity. Since the sensitivity of the R-F and I-F amplifiers is simultaneously decreased, it serves as a control of overall oscillations which sometimes develop with abnormally high line voltage.

## GROUND CIRCUIT

DO NOT ground the chassis except through the use of the "Gnd" terminal. This terminal is separated from the chassis by a series condenser in order to prevent a short circuit when operating the receiver on a 32 volt line with the positive side grounded.

## ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if an adjustment is found necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

## CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of one of the type 48 output tubes and connect the other terminal to the plate of the other 48 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first prong to the left of the filament prongs. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

## 1. Peaking I-F Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. **KEEP THE OUTPUT LEAD FROM THE SIGNAL GENERATOR AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.**

(b) Connect the ground terminal of the signal generator to the ground terminal of the receiver.

(c) Set the signal generator to exactly 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely meshed.

(e) Turn the band selector switch to the left. (Short Wave).

(f) Adjust the line voltage to 32 volts.

(g) Turn the volume control and the sensitivity control all the way to the right.

(h) With the signal generator set to the lowest usable output level adjust the I-F trimmer condensers for maximum signal output.

NOTE: The I-F trimmers are located on top of the I-F transformers, Fig. 2, and may be adjusted with an insulated screw driver. Always make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency.

## 2. Aligning R-F Circuits—Broadcast Band (540-1570 K. C.)

(a) Turn the band selector switch to the right hand position. (Broadcast Band).

(b) Rotate the tuning condenser until the rotor plates are completely out of mesh.

(c) Connect the antenna terminal of the signal generator to the receiver antenna terminal through a .00025 mfd., mica. series condenser.

(d) Connect the ground terminal of the signal generator to the ground terminal of the receiver.

(e) Set the signal generator to approximately 1575 kilocycles.

(f) Adjust the "Osc." section (rear section) of the tuning condenser gang for maximum signal output. (Fig. 2.)

(g) Set the signal generator to 1400 kilocycles.

NOTE: If electrical interference causes an excessive reading on the output meter, making alignment difficult, it can be reduced by connecting a 5 to 10 mfd., paper, condenser between the ground terminal of the receiver and the chassis frame.

(h) Tune in the 1400 kilocycle signal with station selector for maximum output.

NOTE: Do not disturb the setting of the oscillator trimmer (rear section) as this is adjusted at 1575 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(i) Adjust the "R-F" parallel trimmer of the condenser gang for maximum output.

(j) Adjust the "Ant." parallel trimmer of the condenser gang for maximum output.

(k) Repeat operations (h), (i) and (j) until no further improvement in output can be made.

## 3. Aligning R-F Circuits—Short Wave (1570-4000 K. C.)

(a) Set the signal generator to 2500 kilocycles.

(b) Turn the band selector switch to the left. (Short Wave).

(c) Tune in the 2500 kilocycle signal with the tuning condenser for maximum output.

(d) Adjust the R-F short wave padding condenser, Illus. No. 15Y for maximum output.

(e) Adjust the Ant. short wave padding condenser, Illus. No. 15Z for maximum output.

MODEL 645

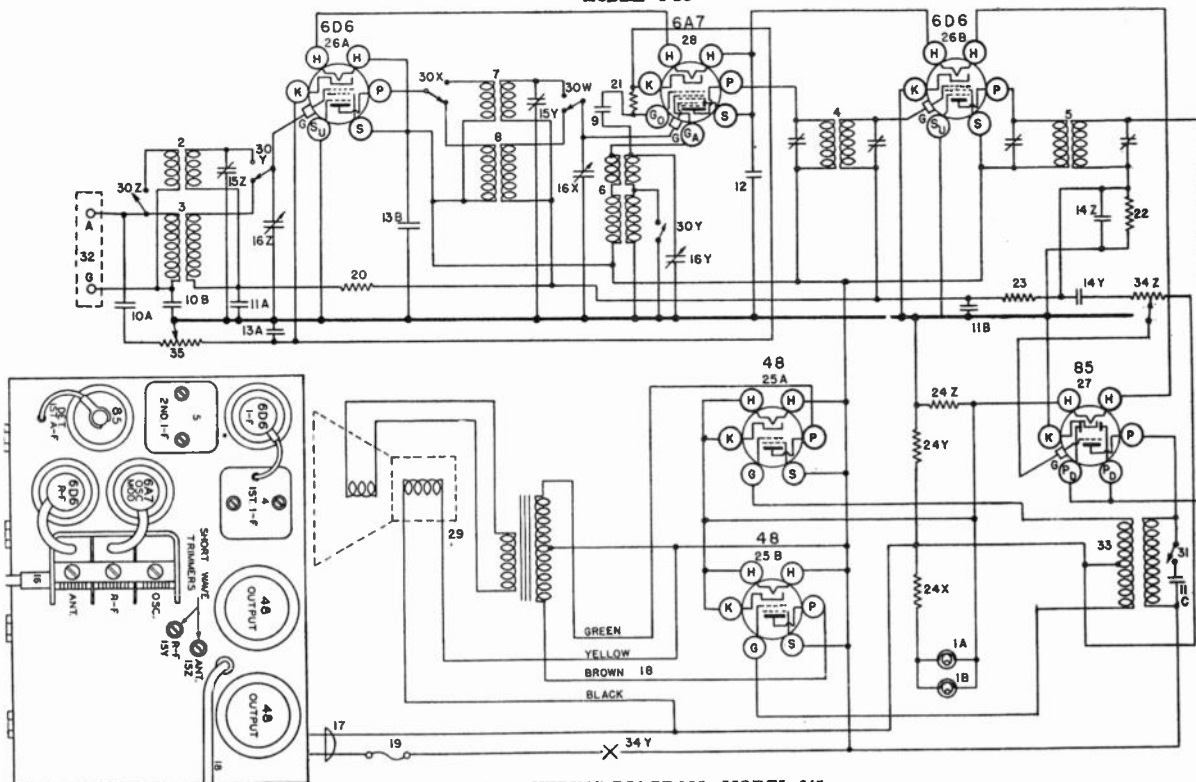


FIG. 1. WIRING DIAGRAM—MODEL 645

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 - 27134	Dial Light Bracket Assm.	MG21-36630	Dial Drive Assm.	
1B	G54 - 32000	Dial Light Bracket Assm.	C - 36629	Dial Face	
2	W - 25200	Ant. Coil H-F (only)	W - 37198	Dial Hand	
	W - 25025B	Coil Shield	W - 32293	Dial Hand Nut (2)	
	W - 25200	Coil Socket	W - 34332	Power Supply Cord	
	W - 28891	Insulating Washer	G2 - 35695	Speaker Cable	
	W - 21541C	Retaining Ring	W - 1983A	Fuse, (3 Amp Cart)	
3	G55 - 32000	Ant. Coil L-F (only)	G1 - 33339	Fuse, Panel Assm.	
	W - 30802A	Coil Shield	W - 33310A	Fuse Cover	
	W - 30026	Retaining Ring	W - 34223	Cover Insulator	
4	G62 - 32004	1st I. F. Trans. Assm.	-35600	Resistor, 100,000 Ohms ¼ W.	
5	G63 - 32004	2nd I. F. Trans. Assm.	21 - 21453	Resistor, 40,000 Ohms ¼ W.	
6	G43 - 32002	Osc. Coil H. F. & L. F. (only)	22 - 21454	Resistor, 1 Megohm ¼ W.	
	W - 25025B	Coil Shield	23 - 26577	Resistor, 3 Megohm ¼ W.	
	W - 25200	Coil Socket	24Z	Resistor, 7.3 Ohm 4.25 W.	
	W - 28891	Insulating Washer	24Y	Resistor, 1.8 Ohm 1.10 W.	
	W - 21541C	Retaining Ring	24X	Resistor, 7.3 Ohm 0.75 W.	
7	G32 - 32001	R. F. Coil H. F. (only)	25A	Socket, 48	
	W - 25024B	Coil Shield	25B	Socket, 48	
	W - 25200	Coil Socket	26A	Socket, 6D6	
	W - 28891	Insulating Washer	26B	Socket, 6D6	
	W - 21541C	Retaining Ring	27	Socket, 85	
8	G52 - 32001	R. F. Coil L. F. (only)	G47 - 28807	Socket, 6A7	
	W - 30802A	Coil Shield	W - 35772	Tube Shield (half) (6)	
	W - 30877B	Insulating Washer	W - 35773	Tube Shield Cap (3)	
	W - 30026	Retaining Ring	W - 35774	Tube Shield Base (3)	
9	G1 - 34002	Condenser, 0.00025 mfd.	29	328CJ-4M	
10A	W - 30323	Condenser, 0.01 mfd. 200 V.		428CJ-4M	
10B	W - 30323	Condenser, 0.01 mfd. 200 V.	30Z	W - 36753 } Band Change Switch	
11A	W - 28621	Condenser, 0.02 mfd. 200 V.	To		
11B	W - 28621	Condenser, 0.02 mfd. 200 V.	30V		
11C	W - 28621	Condenser, 0.02 mfd. 200 V.	W - 36755A	Tone Control Switch	
12	W - 27318	Condenser, 0.05 mfd. 200 V.	31	Terminal Board Ant. & Grd.	
13A	W - 24049A	Condenser, 0.1 mfd. 200 V.	32	G26-26719	
13B	W - 24049A	Condenser, 0.1 mfd. 200 V.	33	MG14-36630	
14Z	W - 30322A	Condenser, 0.00017 mfd. 200 V.	34Z	A. F. Transformer	
14Y		Condenser, 0.006 mfd. 200 V.	34Y	Volume Control	
15Z	G5 - 33008	2 Section R. F. & Ant. H. F. Trim.	34Y	On-Off Switch	
15Y			35	Sensitivity Control	
16Z			B - 33528C	Escutcheon	
16Y	G39 - 33002	3 Section Gang Condenser	W - 33984	Escutcheon Gasket	
16X			D - 28	Escutcheon Screws (4)	
			W - 37339	Knob (3)	
			W - 37341	Knob (2) Small	

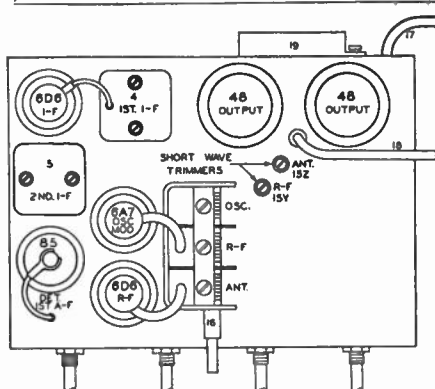


Fig. 2. Top View 645

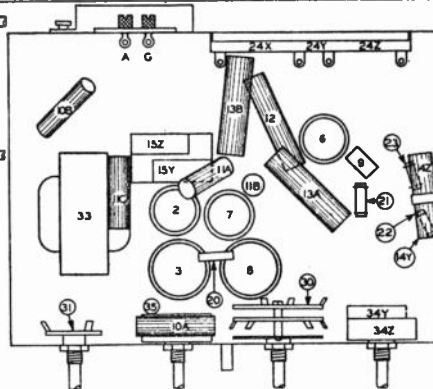


Fig. 3. Bottom View 645

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	65	0	—	—
1C6	Osc-Modulator	2.0	135	65	0	70	-2 to -10
34	I-F Amplifier	2.0	135	65	0	—	—
1B5	Diode & A-F Amp.	2.0	90	—	0	—	—
30	Driver	2.0	132	—	-9	—	—
19	Output	2.0	130	—	-4.5	—	—

Power output approximately 1.6 watts.

"A" battery drain approximately .62 amperes at 2 Volts.

"B" battery drain approximately 12 to 30 milliamperes depending on setting of Volume Control.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the two terminals of the output meter to the two plates of the 19 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1C6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the "H-F" position.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" (A1) terminal of the receiver through a .00025 mfd. condenser.

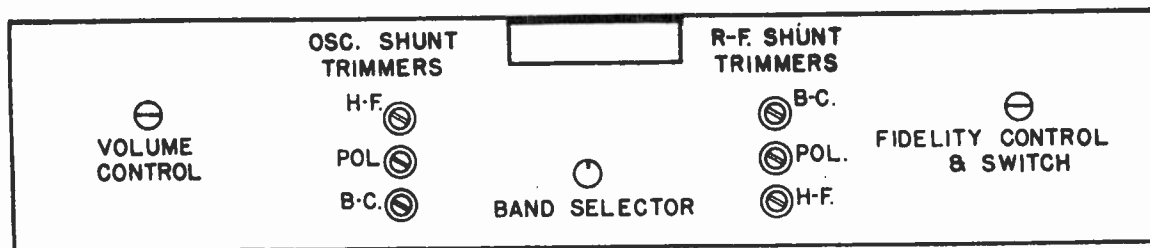
Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC," "R-F" and "ANT"

tune trimmers in the order given, for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency.

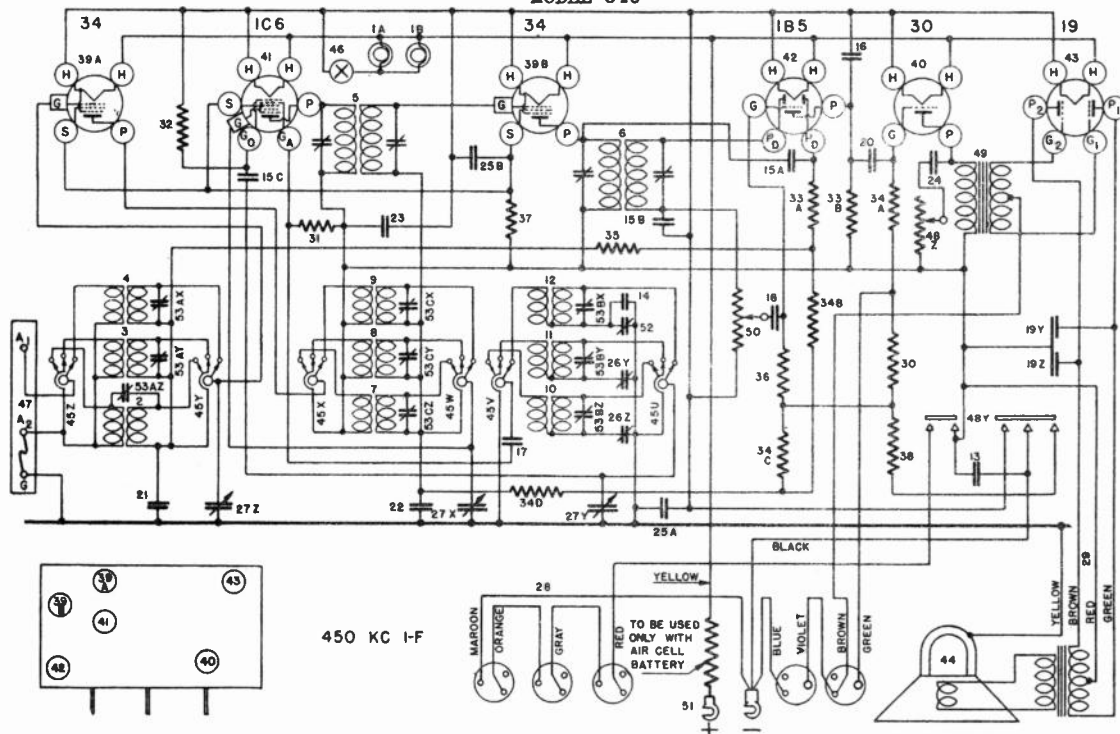
To adjust the "series" trimmers, Illus. Nos. 52, 26Z and 26Y, set the signal generator to the frequency indicated and then tune-in the signal with the station selector for maximum output. While adjusting each "series" trimmer rock the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

Shunt Alignment	Series Alignment
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	2000 Kilocycles
18 Megacycles	6 Megacycles



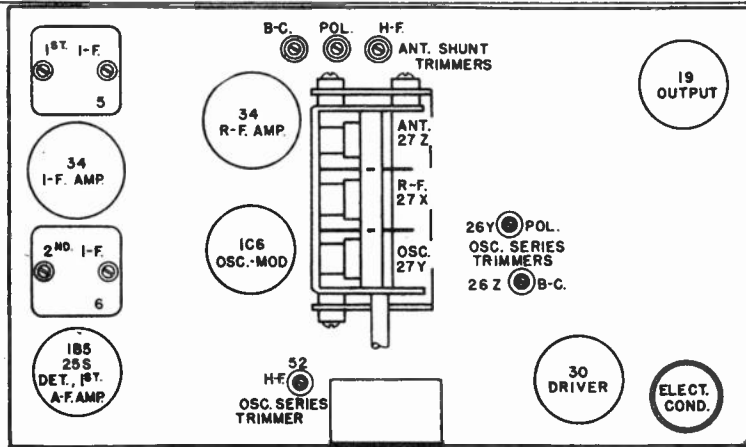
Front View 646

MODEL 646



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	W -37188	Dial Light	31	W -21876	Resistor 10000 Ohm 1/4 W.
1B	W -37188	Dial Light	32	W -36761	Resistor 40000 Ohm 1/4 W.
	G6 -27134	Light Bracket Assembly	33A	W -35928	Resistor 60000 Ohm 1/4 W.
2	G110-32000	Ant. Coil-B-C-B.	33B	W -35928	Resistor 60000 Ohm 1/4 W.
3	G111-32000	Ant. Coil-Pol-B.	31A	W -36322	Resistor 500000 Ohm 1/4 W.
4	G126-32000	Ant. Coil-H-F-B.	31B	W -36322	Resistor 500000 Ohm 1/4 W.
5	G111-32004	1st I-F Assembly	31C	W -36322	Resistor 500000 Ohm 1/4 W.
6	G46 -32004	2nd I-F Assembly	34D	W -36322	Resistor 500000 Ohm 1/4 W.
7	G88 -32002	Osc. Coil-H-C-B.	35	W -35927	Resistor 2 Megohm 1/4 W.
8	G109-32002	Osc. Coil-Pol-B.	36	W -36688	Resistor 3 Megohm 1/4 W.
9	G100-32002	Osc. Coil-H-F-B.	37	W -37377	Resistor 20000 Ohm 1/4 W.
10	G76 -32001	R-F Coil-B-C-B.	38	W -22180	Resistor 16500 Ohm 1 1/4 W. Flex.
11	G89 -32001	R-F Coil-H-F-B.	39A	G31 -28807	Socket Type 34
12	G91 -32001	R-F Coil-H-F-B.	39B	G31 -28807	Socket Type 34
13	W -37628	Condenser 30 Mfd. 200 V. Electrolytic	40	G41 -28807	Socket Type 30
14	G7 -34007	Condenser 1750 Mmfld. Mica.	41	G84 -28807	Socket Type 1C6
15A	G2 -34002	Condenser Molded .0001 Mfd.	42	G91 -28807	Socket Type 11A5
15B	G3 -34002	Condenser Molded .0005 Mfd.	43	G44 -28807	Socket Type 19
15C	W -35139	Condenser Tubular .004 Mfd. 400 V.	W -2697413	Tube Shield	
17	W -28619	Condenser Tubular .006 Mfd. 400 V.	W -2697313	Tube Shield Base	
18	W -31158	Condenser Tubular .006 Mfd. 400 V.	44	W -42P14	Speaker R-8000 B-1
19Z	W -28621	Condenser Tubular .02 Mfd. 200 V.		W -41452	Cone Assembly
19Y	W -32379	Condenser Tubular .02 Mfd. 200 V.		W -41455	Output Trans.
20	W -36541	Condenser Tubular .02 Mfd. 160 V.		41459	Cone Mtg. Ring
21	W -30488	Condenser Tubular .05 Mfd. 400 V.	45Z	C -10910	Band Selector Switch
22	W -2910A	Condenser Tubular .25 Mfd. 200 V.	46	W -41068A	Switch, Dial Light
23	W -2910A	Condenser Tubular .25 Mfd. 200 V.	47	G27 -26719	Ant. & Grd. Terminal Assembly
24	W -37874	B-C Osc. Series Trimmer	48Y	W -41368	Battery Switch
25A	G50-33002	Pol. Osc. Series Trimmer	49	G19 -24628	Tone Control
25B	W -42429	3 Section Var. Tuning Condenser	49	G19 -24628	Audio Transformer
26Z	W -41220	Dial Drive Unit	50	W -37967	Volume Control
27	C -41220	Dial Glass	51	G3 -23300	Resistor .372 Ohm (Air Cell)
	W -42680	Pointer	52	W -41369	Condenser H-F-Osc. Series Trimmer
	W -41582	Drive Cable	53	W -33951	3 Section Shunt Trimmer Assembly
	W -41584	Coupling Unit	G95	W -28807	Ballast Tube Socket
	W -41587	Pointer Screw	W -29591	W -40839	Cond. .0005 Mfd. 400 V
28	B -42338	Dial Mask	W -40839	W -40839	Escutcheon
29	B -41762	Battery Supply Cable Assembly	W -28760A	W -28760A	Escutcheon Pin
30	C -41972	Harness for B-41762	W -41221	W -41221	Knob, Station Selector
	G8 -35696	Speaker Cable	W -41222	W -41222	Knob, Dial Light
	W -27121	Resistor 5000 Ohm 1/4 W.	W -40192B	W -40192B	Knob, Band Selector Sw.
			W -41224	W -41224	Knob, V. C. & T. C.
			W -43282	W -43282	Ballast Tube



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	145	85	0	-10	135
6U7G	I-F Amplifier	6.3	145	85	0	—	—
6Q7G	AVC, Detector & A. F. Amplifier	6.3	70	—	-2	—	—
25A6G	Output	25.0	130	145	0	—	—
25Z6G	Rectifier	25.0	110 (P1)	—	145 (K1)	—	—
W-44338	Ballast			Variable			

Power output approximately 2.5 watts.

Power consumption approximately 55 watts at 117.5 volts AC or 45 watts at 117.5 volts DC.

Voltage drop across speaker field 50 volts.

All voltage readings given above except filaments will be approximately 40% less if set is measured on 117.5 volt DC power supply.

**Tuning I-F Amplifier to 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the antenna terminal "A1" on the rear of the chassis. Connect the ground lead from the signal generator to the GROUND TERMINAL "G" on the receiver chassis. DO NOT CONNECT THE GROUND LEAD FROM THE SIGNAL GENERATOR DIRECTLY TO THE RECEIVER CHASSIS. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the left (American Broadcast Band) and turn the volume control to the right "ON."

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmer condensers located on top of the 2nd I-F transformer (Fig. 2) for maximum reading on the output meter.

(e) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERA-

TOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

**Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch is set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

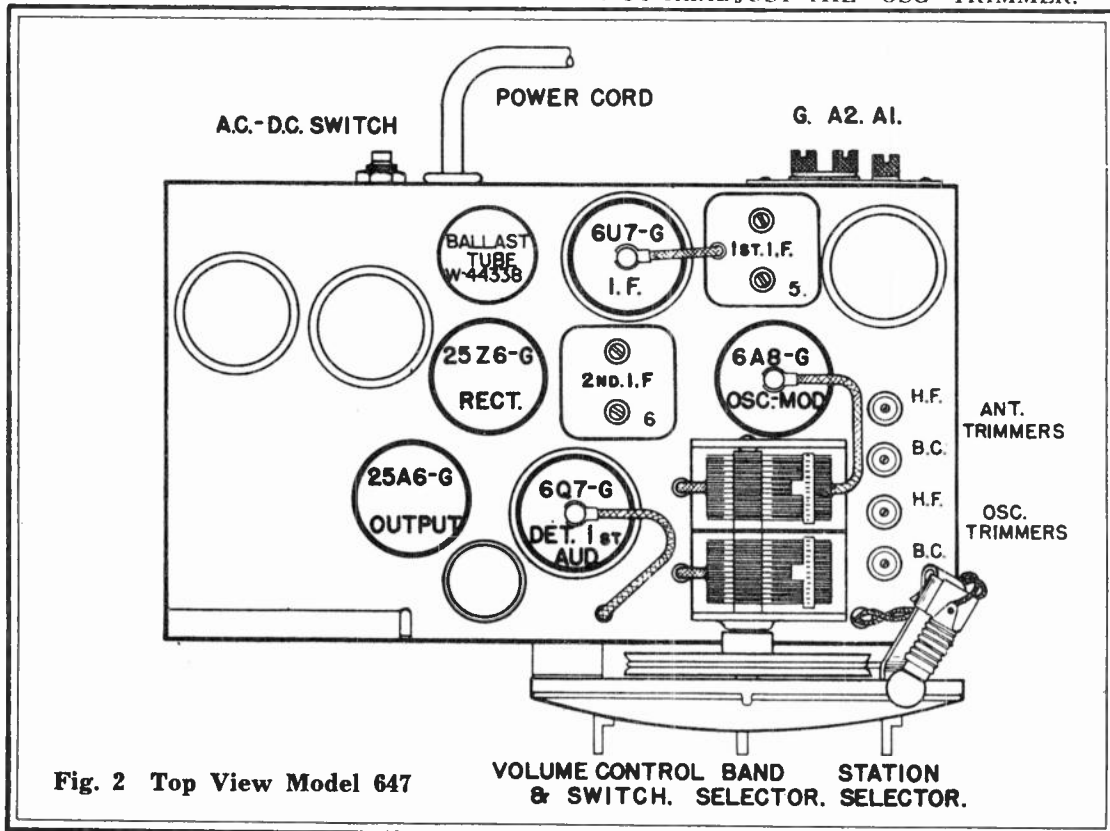


Fig. 2 Top View Model 647



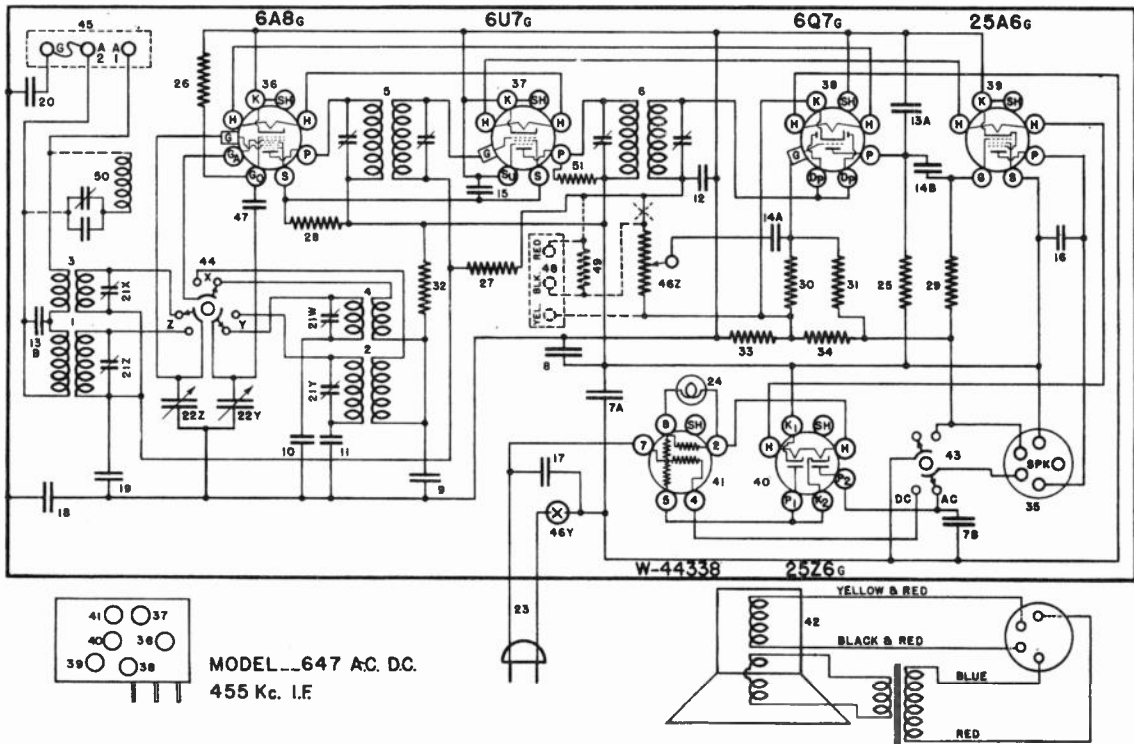


FIG. 1—WIRING DIAGRAM—MODEL 647

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	G143-32000	Ant. Coil B. C.	29	-33344	Resistor 400,000 Ohm
2	G143-32002	Osc. Coil B. C.	30	-37590	1/3 W. Carb.
3	G142-32000	Ant. Coil H. B.	31	-37584	Resistor 750,000 Ohm
4	G144-32002	Osc. Coil H. F.	32	-31093	1/3 W. Carb.
5	G156-32004	1st I-F Assy.	33	W -37287	Resistor 20 Ohm 1/2 W. Flex.
6	G157-32004	2nd I-F Assy.	34	W -43462	Resistor 375 Ohm
7A	W -40325	Condenser 50 Mf. 150 V.	35	G103-28807	2 1/2 W. Flex.
7B	W -40325	Condenser 50 Mf. 150 V.	36	G156-36400	Socket Speaker
8	W -36057B	Condenser 40 Mf. 300 V.	37	G171-36400	Socket Type 6A8
9	W -41061	Condenser 16 Mf. 250V.	38	G160-36400	Socket Type 6U7
10	G18 -34000	Condenser 3800 Mmf.	39	G161-36400	Socket Type 6Q7
11	G14 -34002	Condenser .0004 Mf.	40	G162-36400	Socket Type 25A6
12	G1 -34002	Condenser .00025 Mf.	41	G180-36400	Socket W-44338 Ballast
13A	G2 -34002	Condenser .0001 Mf.	42	W -40911	Tube Shield
13B	G2 -34002	Condenser .0001 Mf.	43	346BP12"M"	Speaker Spec. No. 1-D-1088
14A	W -28621	Condenser .02 Mf. 200 V.		-44543	V. C. & Lone Assy.
14B	W -28621	Condenser .02 Mf. 200 V.		-44544	Field Coil } Used
15	W -35936	Condenser .05 Mf. 200 V.		-44545	Output } on
16	W -30323	Condenser .01 Mf. 200 V.		-43672	Trans. } 346BP12"M"
17	W -23191A	Condenser .01 Mf. 400 V.			Cone Mtg. } Spk.
18	W -24049C	Condenser .1 Mf. 200 V.			Ring
19	W -36541	Condenser .02 Mf. 160 V.			Spk. Plug Clamp
20	G3 -34002	Condenser .0005 Mf.			A.C.-D.C. Switch
21	W -41247A	4 Sect. Shunt Trim. Assy			Lock Brkt (AC-DC Switch)
22	G42 -33001	2 Sect. Var. Tuning Cond.			Band Switch
	-44679A	Dial Face (Glass)			Ant. & Gnd. Term. Assy.
	C -44293	Support Brkt. (Dial Glass)			Volume Cont. 500,000 Ohm
	W -44084A	Support Ring (Dial)			Line Switch
	W -43542B	Bracket—Drive Shaft			G13 -34002
	W -43649	Retaining Ring (Dr. Shaft)			G37 -26719
	W -44134A	Drive Shaft			-21875
	G1 -43564	Pulley & Hub. Assy.			B -44228B
	W -44299	Pointer			W -44381B
	W -40498	Screw FS20 (Pointer Mtg.)			W -43563
	W -43561	Tension Spring			7EA
	W -44085B	Dial Mask			B -44976B
	W -41582	Drive Cord			G165-32004
	W -42866	Insulating Bushing (Shaft)			-23785
	B -44004	Cord & Plug			
23	W -44637	Dial Light 4-8 V.			
24	G6 -27134	Dial Light Socket			
25	-34018	Resistor 200,000 Ohm			
26	-35928	1/3 W. Carb.			
27	-26577	Resistor 80,000 Ohm			
28	-22831	1/2 W. Ina.			
		Resistor 3 Megohm			
		1/3 W. Carb.			
		Resistor 15,000 Ohm			
		1/3 W. Carb.			

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band	Minimum Capacity	Shunt Alignment
High Frequency Band	1,725 Kilocycles	1,400 Kilocycles
	18,300 Kilocycles	18,000 Kilocycles

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	105	70	—	—	-10	105
6U7G	I-F Amplifier	6.3	105	70	—	—	—	—
6Q7G	Det, AVC, A-F Amplifier	6.3	35	—	—	—	—	—
25A6G	Output	25.1	100	105	—	6	—	—
25Z6G	Rectifier	25.1	117.5 A.C.	—	—	132	—	—
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop		—	—	—	—	—

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

Tuning The I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8-G, leaving grid cap in place.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

Aligning The R-F Amplifier.

Connect output of signal generator through a .0001 condenser to the antenna lead of receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —4099B	Dial Light, 6-8 Volt	W	—46967A	Speaker Support Bracket
	G6 —27134	Dial Light Bracket Assembly		—6876	No. 6—32 x 1/4" Washer H. M. Screw
2	B —45784	Power Cable and Plug	N	—5062	No. 6—32 H. H. Nut
3	G185—32000	Antenna Coil	W	—20800	No. 6 Shakeproof Washer
4	G182—32002	Oscillator Coil	L	—10	Lock Washer
5	G208—32004	1st I.F. Transformer	R	—181	No. 10—32 x 1/8" Ro. H. M. Screw
6	G209—32004	2nd I.F. Transformer	W	—4318B	Spacer
7	G3 —34002	Condenser, .0005 Mf. Molded	27A	}	Volume Control (1 Meg.)
8	W —45780B	Condenser, .02 Mf. 160 V. Paper	27B		Power Switch
9A	} G66 —33001	2 Section Gang { Antenna Section	W	—46668	3/8" Palnut
9B			W —46753	Var. Con. Mtg. Plate	G178—36400
	W —6416	No. 8—32 x 1/8" W. H. M. Screw	W	—46773	Ballast Tube
	C —46815A	Dial Glass	W	—40911	Tube Shield
	W —46921	Speed Nut (2 Req.)	G184—32004	Wave Trap	
	MG12—46750	Dial Back Plate Assembly	C6	—34002	Condenser, .000025 Mf. 200 V. Molded
	W —46831A	Dial Pointer		—46894	8AK Cabinet (Brown)
	G13 —41582	Drive Cord (30 Inches)		—46909	8AH Cabinet (Ivory)
	G4 —41582	Guide Cord (9 Inches)		—47081	8AG Cabinet (Red)
	W —46848	Guide Cord Spring		—46842A	8AK Cabinet Back
	W —46087	Drive Cord Spring		—46876A	8AH Cabinet Back
	G15 —43564	Pulley and Hub Assembly		—46990A	8AG Cabinet Back
	W —23877	Set Screw for Drive Pulley (2 Req.)	B	—128	Screws for Mounting Back (4 Req.)
	W —46290	Cord Clamp		—46816	Rubber Bottom Mtg. Screw (4 Req.)
	W —43542B	Drive Shaft Bracket	<b>PUSH BUTTON PARTS</b>		
	—45746	Drive Shaft	G33 —45683	Push Button Unit Complete	
	—45808	P. K. Screw for Bracket (2 Req.)	G26 —45683	Key Assembly	
	O-8	Flat Washer	W —50542C	Key Clip (Lock Clamp)	
10	G2 —34002	Condenser, .0001 Mf. Molded	W —45646B	Adjusting Clip (3 Req.)	
11	W —45780B	Condenser, .02 Mf. 160 V. Paper	W —50547	Key Plate	
12	W —45782B	Condenser, .05 Mf. 120 V. Paper	W —50588B	Adjusting Clip (1 Req.)	
13	W —45810B	Condenser, .006 Mf. 160 V. Paper	W —50607C	Spring (Key Return)	
14	G2 —34002	Condenser, .0001 Mf. Molded	W —50561	No. 6—40 x 1/8" Bearing Screw (Rocker Plate)	
15A	} W —46398	Condenser, 16 Mf. 125 V. Elect.		—2016	No. 8 Shakeproof Washer
15B			W —45780B	Condenser, .02 Mf. 160 V. Paper	G62 —45683
16	W —45780B	Condenser, .02 Mf. 160 V. Paper		—46841A	Push Button (8AK) (Brown)
17	W —45817B	Condenser, .05 Mf. 160 V. Paper		—46879A	Push Button (8AH and 8AG) (Black)
18	—21237A	Resistor, 60,000 Ohm 1/2 W. Carbon		—46887	Call Letter Sheet (8AH and 8AG)
19	—36688	Resistor, 3 Megohm 1/2 W. Carbon		—50841	Call Letter Sheet (8AK)
20	—21876	Resistor, 10,000 Ohm 1/2 W. Carbon	W	—50551	Call Letter Cover (5 in Envelope)
21	—21237A	Resistor, 60,000 Ohm 1/2 W. Carbon		—46840A	Instructions
22	—46497	Resistor, 11 Megohm 1/2 W. Carbon		—46953	Knob (8AK) (Brown)
23	—23785	Resistor, 500,000 Ohm 1/2 W. Carbon		—44552	Knob (8AH and 8AG) (Black)
24	—21455	Resistor, 300,000 Ohm 1/2 W. Carbon			
25	W —41759	Resistor, 140 Ohm 1/2 W. Flex.			
26	281-BL-7-"B"	Speaker, Spec. 55WA43 (450 Ohm)			
	—47290	Speaker Cone and V. C. Assembly			
	—46686	Field Coil (450 Ohm 60 M. A.)			
	—46687	Output Transformer			
	—46685	Cardboard Ring, Cone Mtg.			

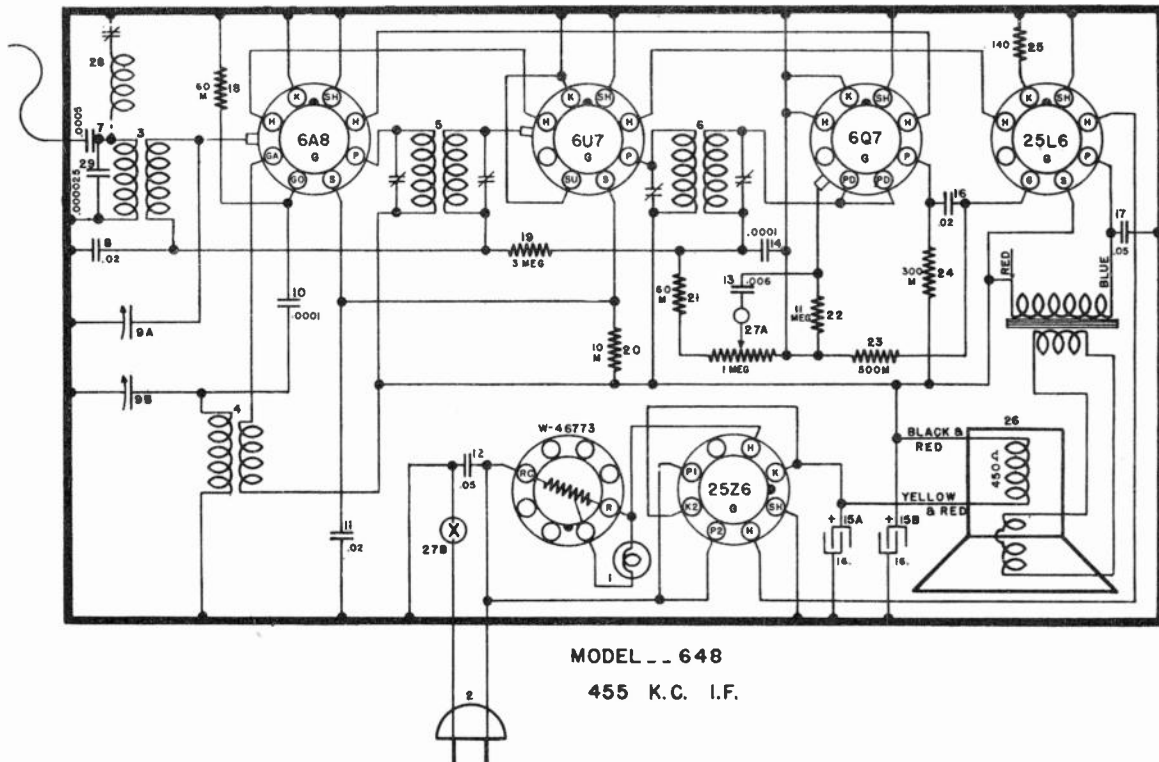


FIG. 1—WIRING DIAGRAM—MODEL 648

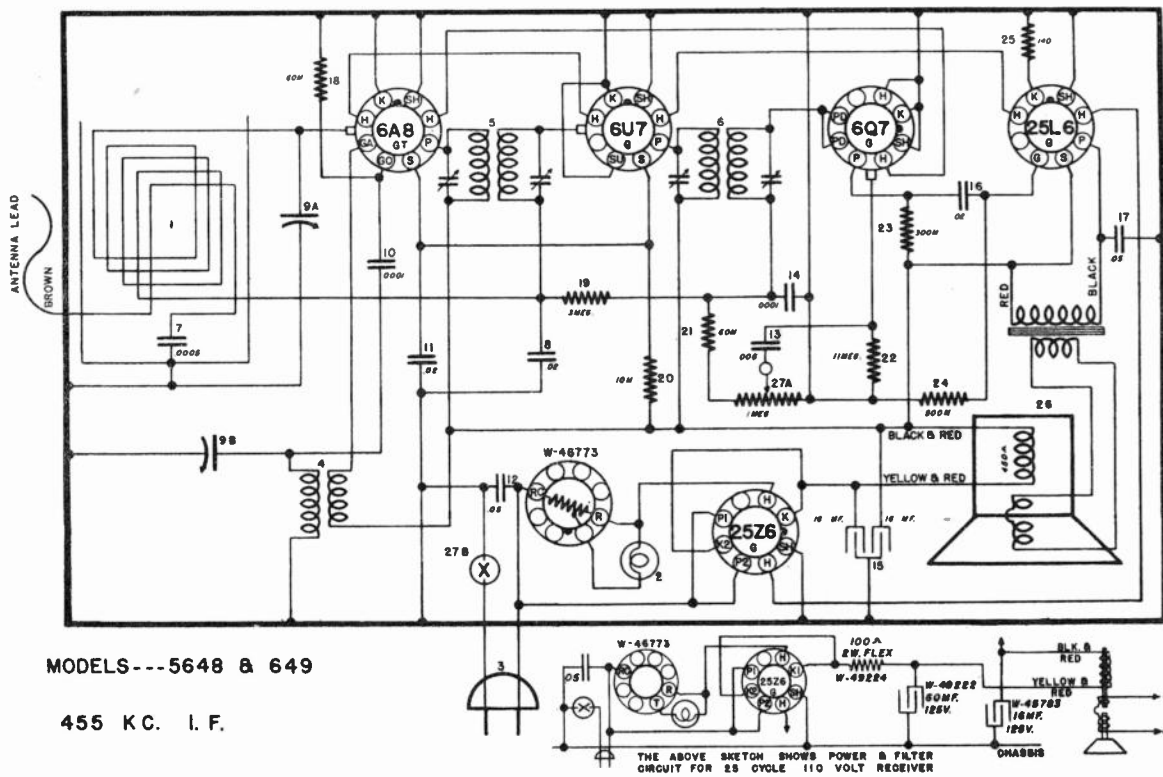


FIG. 1—WIRING DIAGRAM—MODEL 5648—649

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8GT	Oscillator-Modulator	6.3	105	70	—	—	-10	105
6U7G	I-F Amplifier	6.3	105	70	—	—	—	—
6Q7G	Det, AVC, A-F Amplifier	6.3	35	—	—	—	—	—
25L6G	Output	25.1	100	105	—	6	—	—
25Z6G	Rectifier	25.1	117	5 A.C.	—	132	—	—
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop						

Tuning the I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT, leaving grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, located on chassis between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

Aligning the R-F Amplifier Model 5648

Connect output lead of signal generator through a .0001 mf. condenser to the antenna lead of the receiver.

- (a) Set signal generator to 1550 kilocycles.
- (b) With the condenser gang open all the way, adjust the "OSC" section of the gang for maximum signal.
- (c) Set the signal generator to 1400 kilocycles.
- (d) Tune in the 1400 kc. signal with the manual tuning knob.
- (e) Adjust the trimmer condenser on the "ANT" section of the gang for maximum signal.

Aligning the R-F Amplifier Model 649

Connect output of signal generator through a .0001 mf. condenser to the antenna lead of receiver.

- (a) Set the signal generator to 1725 kilocycles.
- (b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.
- (c) Set the generator to 1400 kilocycles.
- (d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.
- (e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1 —47539	Loop Antenna (5648 only)	W	—46662	3/8" Pal Nut
1	G2 —47673	Loop Antenna (649 only)	G33	—45683	Push Button Unit Assembly
2	W —4099B	Dial Light Bulb, 6-8 Volt	G26	—45683	Riveted Key Assembly (4 Req.)
	G6 —27134	Dial Light Bracket Assembly	G62	—45683	Rocker Plate Assembly
4	G194—32002	Oscillator Coil (5648 only)	W	—50542E	Key Clip (4 Req.)
4	G182—32002	Oscillator Coil (649 only)	W	—45646B	Adjusting Clip (1 Req.)
5	G208—32004	1st I-F. Transformer	W	—50547	Key Plate
6	G209—32004	2nd I-F. Transformer	W	—31388	Key Plate Holding Screw (2 Req.)
7	G3 —34002	Condenser, .0005 Mf. Molded	W	—45717	No. 6—32 x 1 1/4" Fil. Hd. Adjusting Screw
8A	G66 —33001	2 Section Var. Tun. Cond. { Antenna Section Oscillator Section	W	—50588B	Adjusting Clip (4 Req.)
8B			W	—50607C	Key Return Spring
	W —46738	2 Section Trimmer Condenser	W	—50561	No. 6—40 x 3/8" Fil. Hd. Screw (Rocker Plate Bearing)
	MG12—46750	Riveted Dial Back Plate Assembly	—2046		No. 8 Shakeproof Washer (Key Plate)
	G15 —43564	Pulley and Hub Assembly	MG31—48658		Instruction Envelope Assy. (Models 649A and 649D)
	W —23877	No. 8—32 x 3/8" Set Screw (2 Req.)	MG32—48656		Instruction Envelope Assy. (Models 649B, 649C, 649E and 649F)
	W —45746	Drive Shaft	MG31—47362		Instruction Envelope Assy. (Models C-5648A and C-5648D)
	W —43542B	Drive Shaft Bracket	MG32—47362		Instruction Envelope Assy. (Models C-5648B and C-5648C)
	W —45808	No. 8 x 3/4" H. H. P. K. Screw (Drive Shaft Brkt.)	—8AK		Cabinet
	W —46831A	Dial Pointer	—8AH		Cabinet, Ivory
	G13 —41582	Drive Cord, 30"	—8AG		Cabinet, Red
	G4 —41582	Guide Cord, 9"	—9FA		Cabinet
	W —46087	Drive Cord Spring	—9FB		Cabinet, Blue
	W —46848	Guide Cord Spring	—9FC		Cabinet, Tan
	W —46290	Drive Cord Clamp	—47583		Carton (8AK, 8AH, 8AG, 9FB, 9FC) (5648 only)
	C —47547	Dial Glass	—47584		Carton (8FA) (5648 only)
	W —46921	Speed Nut (Dial Glass)	—46841A		Push Buttons (8AK, 9FA) (4 Req.)
	W —48741	Dial Glass Clip (Lower) (9FA only)	—46879A		Push Buttons (8AH, 8AG, 9FB, 9FC) (4 Req.)
	W —48742	Dial Glass Clip (Upper) (9FA only)	—46953		Knob (8AK) (2 Req.)
	W —48743	No. 3 x 3/4" Rd. Hd. Machine Screw (3 Req.) (Dial Glass Clip)	—44552		Knob (8AH, 8AG, 9FB, 9FC) (2 Req.)
	W —40911	Tube Shield	W	—47483	Knob (9FA) (2 Req.)
	W —46773	Ballast Tube	—47545		Instructions
	W —36639	Grid Clip	—47863		Call Letters (8AK, 9FA)
	W —27981A	Tube Shield Base	—47859		Call Letters (8AH, 8AG, 9FB, 9FC)
	W —30175	Trimmer Condenser Spacer	W	—50551B	Call Letter Covers
	G178—36400	8 Prong Socket (No Marking)	MG19—47410		Cabinet Back Assembly (8AK)
	G2 —34002	Condenser, .0001 Mf. Molded	MG20—47410		Cabinet Back Assembly (8AH, 8AG, 9FB, 9FC)
9	W —45780B	Condenser, .02 Mf. 160 Volts Paper	MG22—47410		Cabinet Back Assembly (9FA)
10	W —45782B	Condenser, .05 Mf. 120 Volts Paper	G1	—47539	Antenna Loop Assembly
11	W —45780B	Condenser, .02 Mf. 160 Volts Paper	—46880		Resistance Cord for 220 Volt Operation
12	W —45810B	Condenser, .006 Mf. 200 Volts Paper	—6889		No. 8—32 x 3/4" W. H. Mach. Screw (Chassis Mtg.) (4 Req.) (9FA Cab.)
13	G2 —34002	Condenser, .0001 Mf. Molded	—20881		No. 6 x 3/8" Rd. Hd. Wood Screw (Cabinet Back) (4 Req.) (9FA Cab.)
14	W —46398	Condenser, 16 Mf. Elect. } 60 Cycle only	—46816		No. 8 x 3/8" Rubber Bott. Mach. Screw (Chassis Mtg.) (4 Req.) (8AK, 8AH, 8AG, 9FB, 9FC)
15	W —49222	Condenser, 16 Mf. Elect. } 25 Cycle only	B	—128	No. 6—32 x 1/4" Binding Hd. Mach. Screw (Cabinet Back) (4 Req.) (8AK)
	W —45783	Condenser 60 Mf. Elect. }	W	—48758	Trimont Stud (4 Req.) (Cabinet Back)
16	W —45780B	Condenser .02 Mf. 160 Volts Paper	—46838		Carton (8AK, 8AG, 8AH, 9FB, 9FC) (649 only)
17	W —45817B	Condenser, .05 Mf. 160 Volts Paper	—47412		Carton (9FA) (649 only)
18	W —21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.	—49414		Instructions (649 only)
19	—36688	Resistor, 3 Megohms 1/4 Watt Carb.	B	—47418	Cabinet Back (9FA) (649 only)
20	—21876	Resistor, 10,000 Ohms 1/4 Watt Carb.	—46842B		Cabinet Back (8AK) (649 only)
21	—21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.	—46990A		Cabinet Back (8AH, 8AG, 9FB, 9FC) (649 only)
22	—46497	Resistor, 11 Megohms 1/4 Watt Carb.	—46815A		Dial Glass (649 only)
23	—21455	Resistor, 300,000 Ohms 1/4 Watt Carb.	W	—30409	Flat Washer (Chassis Mt.) (649 only)
24	—23785	Resistor, 500,000 Ohms 1/4 Watt Carb.			
25	—41759	Resistor, 140 Ohms 1/4 Watt Flex.			
	W —49224	Resistor, 100 Ohms 2 Watt Flex. (25 Cycle only)			
26	281-BL-7-"B"	Speaker, Spec. 55-WA-43			
	—47290	V. C. and Cone Assembly			
	—46586	Field Coil, 450 Ohms 60 M. A.			
	—46687	Output Transformer			
	—46685	Cardboard Ring			
26	281-BL-7-"K"	Speaker, Spec. 5-IV-2			
	—47166	V. C. and Cone Assembly			
	—47170	Field Coil, 450 Ohms 60 M. A.			
	—47171	Output Transformer			
	—47169	Cardboard Ring			
27A	—46847	Volume Control, 1 Megohm			
27B			Line Switch		

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	Go	Ga	K
6A8	Osc-Mod	6.3	220	80	—	0	-4 to -10	105	2.5
6K7	I. F. Amplifier	6.3	220	105	3.3	0	—	—	3.3
6H6	Diode Detector	6.3	—	—	—	—	—	—	0
6K7	A. F. Amplifier	6.3	20	20	0	1.0	—	—	0
6F6	Output	6.3	210	220	—	8.0	—	—	0
5Z4	Rectifier	4.9	220	—	—	—	—	—	—

1. Tuning I. F. Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Turn the tuning condenser rotor plates until they are completely meshed.

(c) Turn the band selector switch to the short wave band (extreme left hand position).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output. (Fig 2).

(f) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

2. Aligning R. F. Amplifier—Broadcast Band (540 to 1700 Kc.)

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.

(b) Turn the tuning condenser rotor plates until they are COMPLETELY OUT OF MESH.

(c) Turn the band selector switch to the broadcast band (extreme right hand position).

(d) Set the signal generator at 1720 kilocycles.

(e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output.

(f) Set the signal generator at 1400 kilocycles.

(g) Tune-in the 1400 kilocycle signal with the station selector.

(h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.

(i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.

(j) Set the signal generator to 600 kilocycles.

(k) Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

3. Aligning R. F. Amplifier—Police Band 1700 to 5200 Kc.)

(a) Turn the band selector switch to the police band (middle position).

(b) Set the signal generator to 5000 kilocycles. (5.0 megacycles).

(c) Turn the station selector to 5 on the police band.

(d) Adjust the oscillator parallel trimmer (P. Band) for maximum output. (Fig. 4).

(e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

4. Aligning R. F. Amplifier—Short Wave Band 5.4 to 15 Meg.)

(a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.

(b) Turn the band selector switch to the short wave band (left hand position).

(c) Set the signal generator to 15 megacycles.

(d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.

(e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.

(f) Turn the station selector to 15 on the dial (S-W Band.)

(g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid

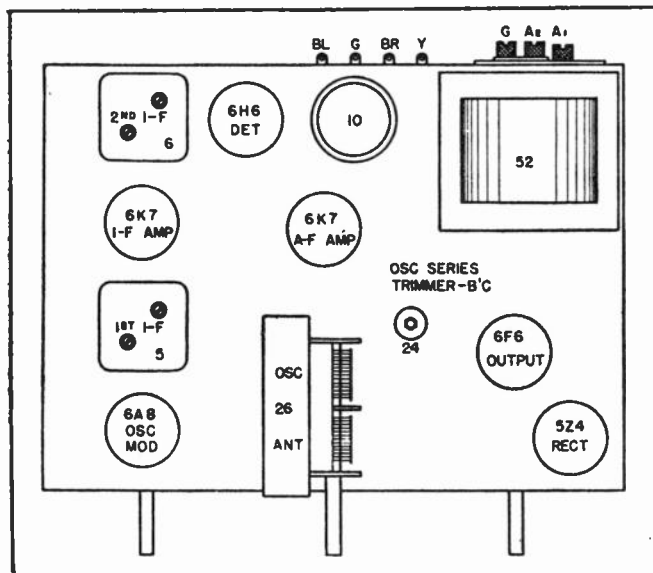


Fig. 2. Top View 655

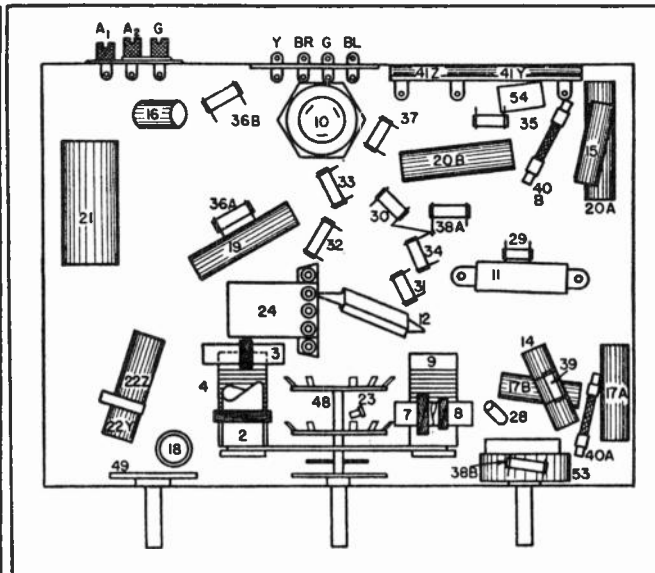
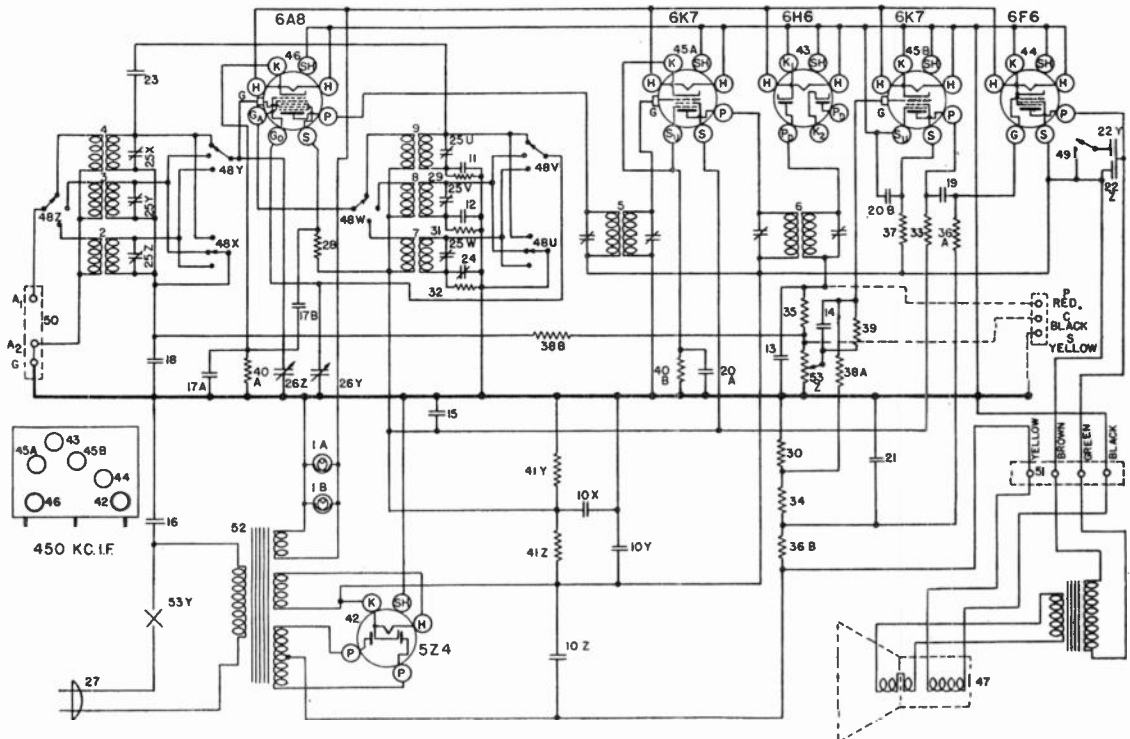


Fig. 3. Bottom View 655

MODEL 655



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1A	G4 -27134	Dial Light Assm.	31	-24990	Resistor, 25,000 Ohm	
1B	G4 -27134	Dial Light Assm.	32	-21453	Resistor, 40,000 Ohm	
2	G39 -32000	Ant. Coil only 540-1725 Kc.	33	-21875	Resistor, 100,000 Ohm	
3	G43 -32000	Ant. Coil only 1.7-5.2 Mc.	34	-34918	Resistor, 200,000 Ohm	
4	G40 -32000	Ant. Coil only 5.3-15.5 Mc.	35	-21455	Resistor, 300,000 Ohm	
5	G59 -32004	1st I. F. Trans. Assm.	36A	-23785	Resistor, 500,000 Ohm	
6	G38 -32004	2nd I. F. Trans. Assm.	36B	-23785	Resistor, 500,000 Ohm	
7	G34 -32002	Osc. Coil only 540-1725 Kc.	37	-34883	Resistor, 2.0 Megohm	
8	G35 -32002	Osc. Coil only 1.7-5.2 Mc.	38A	-28577	Resistor, 3.0 Megohm	
9	G48 -32002	Osc. Coil only 5.3-15.5 Mc.	38B	-28577	Resistor, 3.0 Megohm	
10Z	B -30059C	Condenser, 8 mfd. 450 V.	39	-28578	Resistor, 5.0 Megohm	
10Y		Condenser, 8 mfd. 450 V.	40A	-25937	Resistor, 275 Ohms (Flex)	
11	G12 -34000	Condenser, 4725 mmf.	40B	-25937	Resistor, 275 Ohms (Flex)	
12	G7 -34000	Condenser, 1450 mmf.	41Z	W -35963	Resistor, 8,500 Ohms	
13	G2 -34002	Condenser, 0.0001 mfd. 200 V.	41Y		Resistor, 25,000 Ohms	
14	W -28819	Condenser, 0.006 mfd. 200 V.	42	G154 -36400	Socket, 5Z4	
15	W -32378	Condenser, 0.01 mfd. 400 V.	43	G155 -36400	Socket, 6H6	
16	W -30805	Condenser, 0.01 mfd. 400 V.	44	G152 -36400	Socket, 6F6	
17A	W -28821	Condenser, 0.02 mfd. 200 V.	45A	G151 -36400	Socket, 6K7	
17B	W -28621	Condenser, 0.02 mfd. 200 V.	45B	G151 -36400	Socket, 6K7	
18	W -32380	Condenser, 0.05 mfd. 200 V.	46	G156 -36400	Socket, 6A8	
19	W -27216	Condenser, 0.05 mfd. 200 V.	47	318BL -18M	Speaker, (Table Model)	
20A	W -24049B	Condenser, 0.1 mfd. 200 V.	48U	418CL -22M	Speaker, (Console Model)	
20B	W -24049B	Condenser, 0.1 mfd. 200 V.	To	B -35935	Band Change Switch	
21	W -30321A	Condenser, 1.0 mfd. 180 V.	48Z		W -35937	Switch Tone Control
22Z	W -35011	Condenser, 0.006 mfd. 400 V.	49	G27 -28713		Terminal Board Ant.—Grd.
22Y	W -35011	Condenser, 0.03 mfd. 400 V.	50	G5 -31128	Terminal Board Speaker	
23	G49 -34403	Condenser, 1.0 mmf.	51	W -34828	Term. Board Cover (Speaker)	
24	G10 -33005	Condenser, B. C. Series Padder	52	W -34827	Term. Board Cover Insulator	
25Z	W -35951	3 Section Ant. Trimmer Cond.	53Z	-35938	Volume Control & On-Off Switch	
25X			W -35951			3 Section Osc. Trimmer Cond.
25Y				G1 -34002	Condenser, 0.00025 mfd.	
25W						
25V			W -33984	Escutcheon Gasket		
26Z	W -37198	Dial Assm. Complete	D -28	Escutcheon Screw (4)		
26Y	W -32293	Dial Hand Nut (2)	W -38312	Band Change Plate		
27	B -33905A	A. C. Cord & Plug	W -38309	Band Change Indicator		
28	-38318	Resistor, 15,000 Ohm (Insul.)	W -28780B	Escutcheon Pins		
29	-38318	Resistor, 15,000 Ohm (Insul.)	W -37340	Knob, Band Change		
30	-38318	Resistor, 15,000 Ohm (Insul.)	W -37339	Knob (3)		

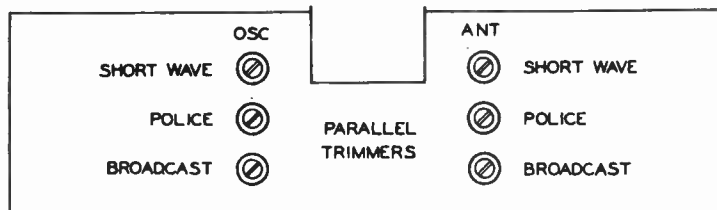


FIG. 4

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	P2	S	Su	K	Ga	Go
6A8	Osc-Mod	6.3	275	—	120	—	5	170	—5 to —20
6K7	I. F. Amp.	6.3	275	—	120	—	4	—	—
6H6	Det. & AVC	6.3	0	—	—	—	0	—	—
6F5	A. F. Amp.	6.3	160	—	—	—	2	—	—
6N6	Output	6.3	275	260	—	—	0	—	—
5Z4MG	Rectifier	5.0	—	—	—	—	360	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band

selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (Shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. NOTE: When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Generator Frequencies.

Broadcast Band	Shunt Alignment	Series Alignment
High Frequency Band	1400 Kc.	600 Kc.
	18000 Kc.	6000 Kc.

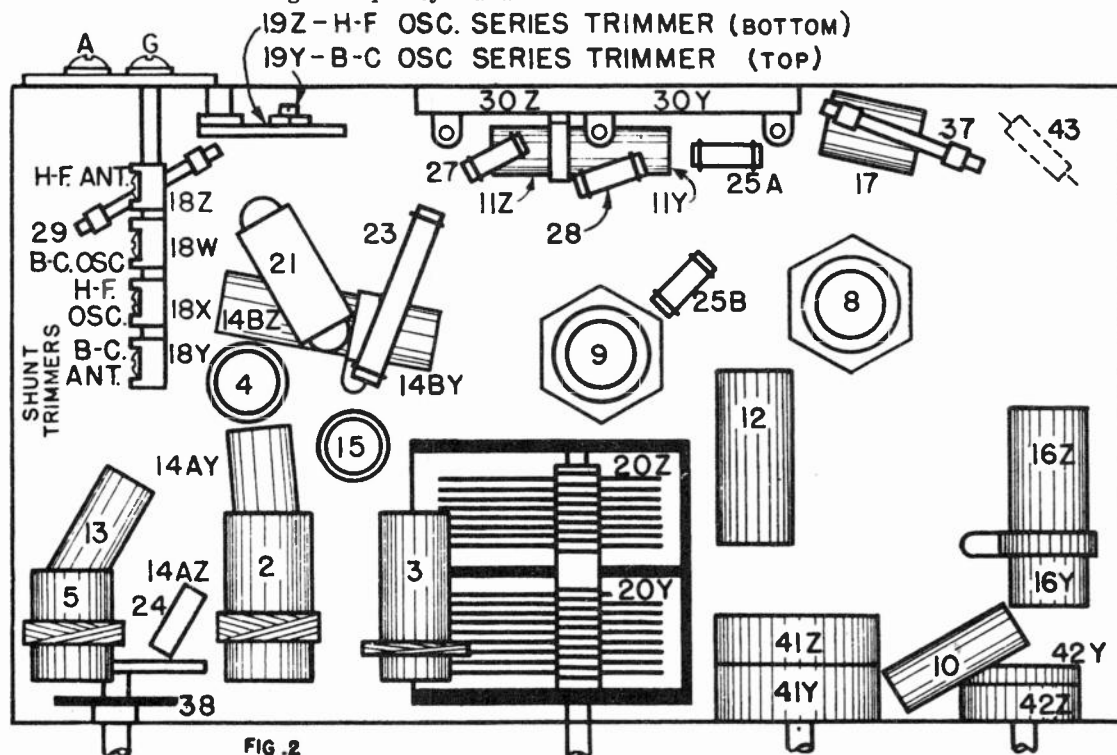


FIG. 2

MODELS 656, 5656

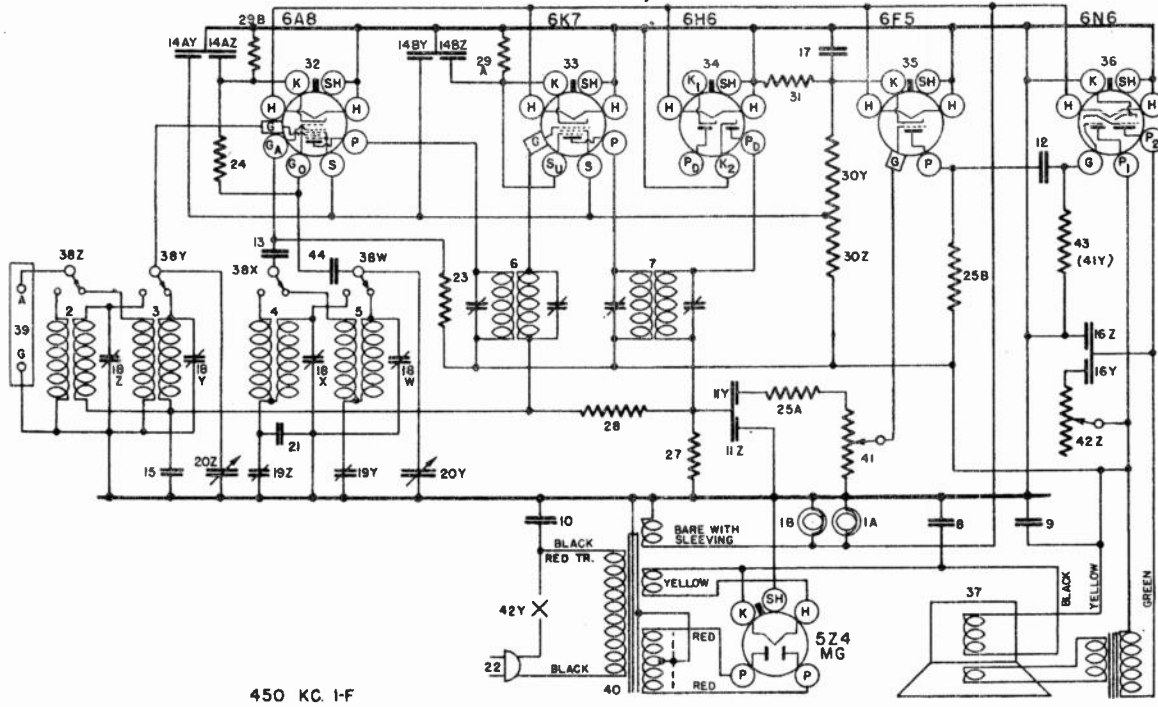


FIG. 1.—WIRING DIAGRAM—MODELS 656 AND 5656

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Item No.	Part No.	Name
1-AB	W -37922	Bulb, Dial Light	23	-5370-A	Resistor, 20,000 Ohm 1W.
	G3 -37965	Socket Assy., Dial Light	24	-35928	Resistor, 60,000 Ohm 1/2W.
	W -40570	Shield, Dial Light	25A	-23403	Resistor, 150,000 Ohm 1/2W.
2	G118 -32000	Coil, Antenna (5800-18100 Kc.)	25B	-35928	Resistor, 150,000 Ohm 1/2W.
3	G81 -32000	Coil, Antenna (540-1725 Kc.)	27	-33344	Resistor, 400,000 Ohm 1/2W.
4	G108 -32002	Coil, Osc. (5800-18100 Kc.)	28	-37245	Resistor, 1.5 Megohm 1/2W.
5	G66 -32002	Coil, Osc. (540-1725 Kc.)	29	W -28589	Resistor, 350 Ohm 1/2W. Flex.
6	G71 -32004	Coil Assy., 1st I-F. (450 Kc.)	30Z	W -32301	Resistor, 10,000 Ohm Candohm
7	G72 -32004	Coil Assy., 2nd I-F. (450 Kc.)	30Y		Resistor, 15,000 Ohm Candohm
8	W -36055	Cond., 35 Mf. 400V.	31		Resistor, 165 Ohm 1/2W. Flex.
9	W -36057	Cond., 40 Mf. 300V.	32	G156 -36400	Socket, Type 6A8
10	W -30805	Cond., .01 Mf. 400V.	33	G151 -36400	Socket, Type 6K7
11Z	W -30322-A	(Cond., .00017 Mf. 200V	34	G155 -36400	Socket, Type 6H6
11Y	W -30322-B	(Cond., .006 Mf. 200V.	35	G158 -36400	Socket, Type 6F5
12	W -32780-B	Cond., .05 Mf. 400V.	36	G165 -36400	Socket, Type 6N6
13	W -32191-A	Cond., .01 Mf. 400V.	37	331BL9	Speaker ("M"-1-D 116)
14AZ	W -28623	(Cond., .02 Mf. 200V.			(Model 656 only)
14AY	W -28623	Cond., .02 Mf. 200V.		-37039	Cone Assy.
14BZ	W -28623	Cond., .02 Mf. 200V.		-40275	Field Coil } For above
14BY	W -28623	Cond., .02 Mf. 200V.		-40276	Speaker } Speaker
15	W -27216	Cond., .05 Mf. 200V.			Output Transformer } For above
15B	W -36541	Cond., .02 Mf. 160V.		632CJ3	Speaker ("M"-1-D-610)
16Y	W -31052	(Cond., .05 Mf. 400V.			(Model 5656 only)
16Z	W -31052	Cond., .04 Mf. 400V.		-42879	Cone Assy.
17	See 15B			-42880	Field Coil } For above
18	W -37241	Cond., 4 Section Trimmer		-42881	Output Trans. } Speaker
19	G31 -33006	Condenser, 2 Section	38	G3 -35696	Speaker Cable, (Model 5656 only)
20	G17 -33001	Condenser, Var. Tuning	39	-37247	Switch, Band Selector
	Mg35-40765	Bracket Assy., Dial Support & Spk. Mtg. (656)	40	-26719	Terminal Board, Antenna & Grd. Transformer, 110V. 60 Cy. Power
	W -40798	Bracket, L.H., Dial Sup.		-41978-A	
	W -40799	Bracket, R.H., Dial Sup.		-41027	Volume Control, (3 Meg.) See Note
	W -40797	Bracket, (2 Req.), Dial Mtg.	41Z		Volume Control, (1 Meg.)
	B -41979	Dial, Calibrated Glass	42Z		Tone Control, (80,000 Ohm)
	W -41739	Drive Unit, Dial	42Y		Line Switch
	W -40795-B	Shaft, Hand	W -42345		Eacutcheon
	W -40794	Bracket, Hand Shaft Bearing	D -28		Eacutcheon Screws
	W -42629	Pointer (Hand), Dial	W -37339		Knob, V.C.&S.S.
	W -40909	Washer (Spring), Hand Shaft	W -37341		Knob, T.C.&B. Sw.
	W -41611	Ring, Shaft Retaining		-42006	Volume Control, (3 Meg.)*
	B -42374	Mask, Metal (Bronze)		-21455	Resistor, 300,000 Ohm 1/2W. *(See Note
	W -40486	Screw, Pointer Mtg.	43	BE	Cabinet, (Model 656)
	G7 -34000	Condenser, 1750 Mmf.		MA	Cabinet, (Model 5656)
21	B -33906-A	Cord and Plug, Power			
22					

\*May be used in place of Dual Volume Control.



**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .0002 mf. condenser to the antenna lead. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B. C.)

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig. 2, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

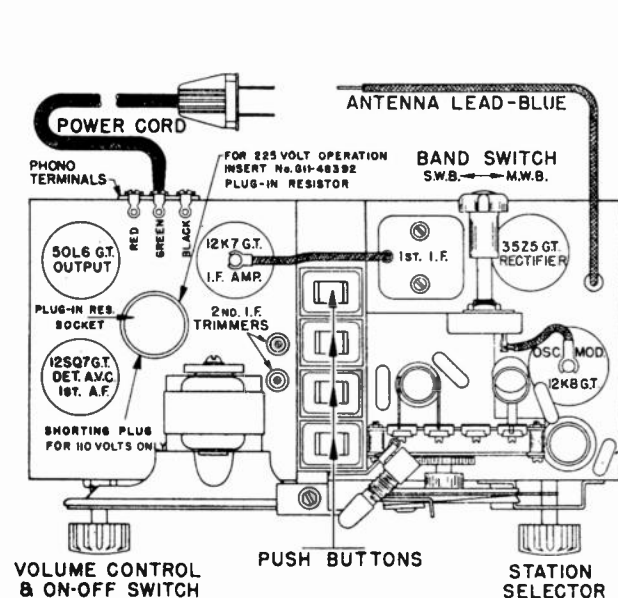


Fig. 2—Top View Model 659

**Aligning the R-F Amplifier.**

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the Medium Wave Band use a .0002 mf. condenser and for the Short Wave Band a 250 ohm carbon resistor instead of the condenser.

The location of the trimmer condensers when viewed from the front of the chassis are, M. W. Osc.—S. W. Osc.—M. W. Ant., and S. W. Ant.. (left to right).

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to the Medium Wave Band, adjust the M. W. "OSC" trimmer condenser of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser M. W. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 18.3 megacycles, turn band switch to S. W. position and open gang all the way.

(h) Adjust S. W. "OSC" trimmer condenser for maximum output.

(i) Set signal generator to 18 megacycles.

(j) Tune in 18 mc. signal on receiver, then adjust the S. W. "ANT" trimmer condenser for maximum output.

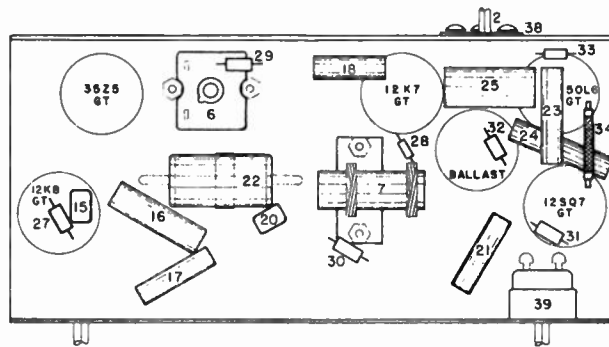


Fig. 3—Bottom View Model 659

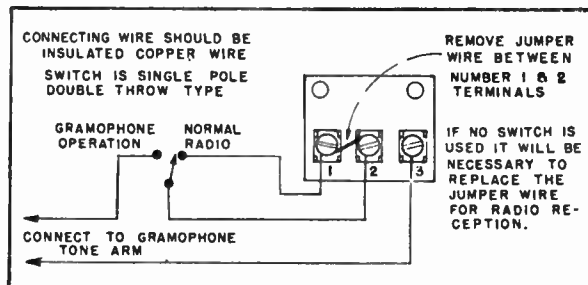
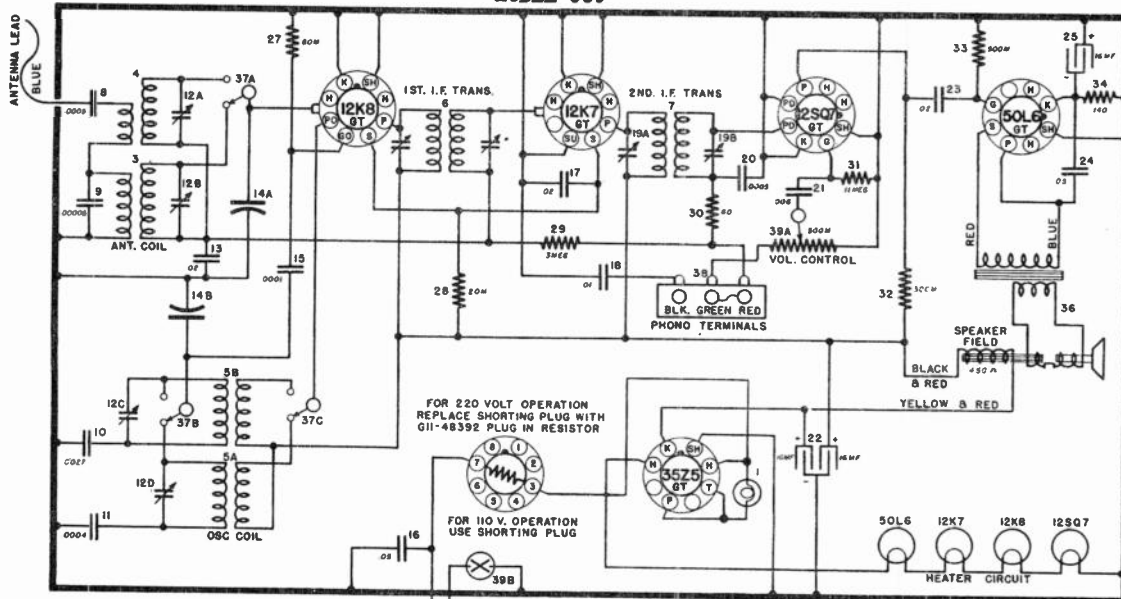


Fig. 4—Gramophone Connections

MODEL 659

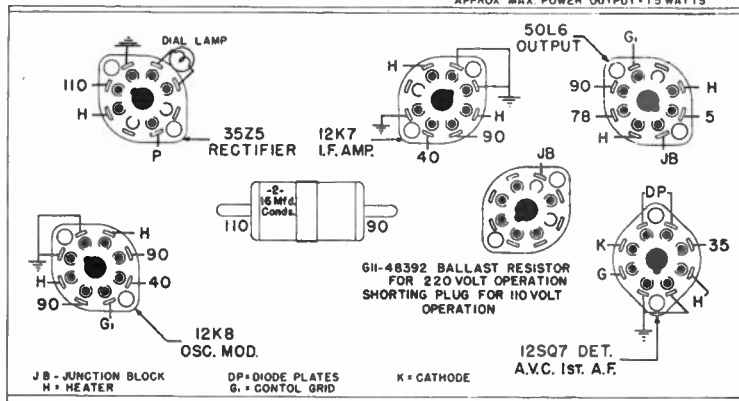


MODEL --- 659

455 KC. I. F.

VOLTAGE READINGS TAKEN BETWEEN SOCKET CONTACT AND CHASSIS, USING A HIGH RESISTANCE VOLTMETER 250V.-1000Ω PER VOLT, METER

POWER CONSUMPTION @ 110V = 25 WATTS  
220V = 50 WATTS  
DROP ACROSS SPK. FIELD = 20V  
APPROX. MAX. POWER OUTPUT = 15 WATTS



Item No.	Part No.	Description	Item No.	Part No.	Description
1	44337	Dial Lamp	39	G52	Phono Terminal Board (1-2-3)
2	G6	Dial Light Socket and Bracket		48975	Line Sw. and Vol. Control (1½ Mex.)
3	45784	Power Cord and Plug		G11	220 Volt Ballast Resistor
4	G213	Antenna Coil, 174-567 Meters		48947	Shorting Plug (110 Volt Operation)
5	G207	Antenna Coil, 16.3-52.6 Meters		G12	P. B. Tuning Unit Assy.
	G214	Oscillator Coils Assy.		G26	Riveted Key Assy.
		A—174-567 Meter Coil			Toggle Lock Clamp
		B—16.3-52.6 Meter Coil			Screw—Station Setting
6	G237	1st I-F. Assy.—455 Kc.		50007	Spring—Key Return
7	G238	2nd I-F. Coil only—455 Kc.		G62	Rocker Plate and Gear Assy.
8	G3	Condenser, .0005 Mf. Mica		50561	Screw—Rocker Plate Bearing
9	G5	Condenser, .00027 Mf. Mica		51146	Anti-Rattle Clip
10	G11	Condenser, .0027 Mf. Mica		46753	Mounting Plate—Tuning Condenser
11	G14	Condenser, .0004 Mf. Mica		MG12	Dial Back Plate (FS71) Assy.
12	45920	4 Section Shunt Trimmer Assy.		16831	Pointer (Dial Hand)
13	36541	Condenser, .02 Mf. 200 V.		G15	Pulley and Hub Assy.
14	G86	Condenser, 2 Section Variable Tuning		MG13	Guide Cord and Spring Assy.
15	G2	Condenser, .0001 Mf. Mica		G13	Drive Cord (30" or 76.2 Cm.)
16	45783	Condenser, .05 Mf. 120 V.		46087	Spring—Drive Cord Tension
17	45780	Condenser, .02 Mf. 160 V.		46290	Clamp—Drive Cord
18	23191	Condenser, .01 Mf. 100 V.		43542	Drive Shaft
19	46738	Condenser, 2 Section—2nd I-F Trimmer		45746	Drive Shaft Mtg. Bracket
20	G3	Condenser, .0005 Mf. Mica		48582	Glass Dial
21	45810	Condenser, .006 Mf. 160 V.		46921	Dial Mounting Speed Nut
22	46398	Condenser, 16-16 Mf. 125 V.		8AK	Cabinet—Mottled Brown
23	45780	Condenser, .02 Mf. 160 V.		8AH	Cabinet—Ivory
24	45817	Condenser, .05 Mf. 160 V.		8AG	Cabinet—Red
25	45783	Condenser, 16 Mf. 160 V.		9F13	Cabinet—Blue
26	None			9FC	Cabinet—Tan
27	35928	Resistor, 60,000 Ohms ¼W.		48944	Cabinet Back—Brown
28	22196	Resistor, 20,000 Ohms ¼W.		48945	Cabinet Back—Black
29	36688	Resistor, 3 Megohms ¼W.		48758	Trimount Stud—Back Mounting
30	35928	Resistor, 60,000 Ohms ¼W.		16838	Shipping Carton
31	46497	Resistor, 11 Megohms ¼W.		46816	Rubber Foot with Screw
32	35601	Resistor, 300,000 Ohms ¼W.		51221	Band Switch Knob—Mottled
33	23785	Resistor, 500,000 Ohms ¼W.		48936	Band Switch Knob—Black
34	41759	Resistor, 140 Ohms ¼W.		46240	Station Call Sheet (European)
35	None			17301	Blank Call Tabs
36	281-BL-W-7	Speaker		50551	Celluloid Call Cover
37	47497	Bracket—Speaker Mounting		46841	Push Button—Brown
	48540	Band Change Switch		16879	Push Button—Black
	49010	Bracket Assy.—Switch Mtg.		48929	Instruction Booklet
38	G49	Phono Terminal Board (Red-Green-Black)			

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	P2	S	Su	K	Ga	Go
6A7	Osc-Mod	6.3	235	---	128	---	6.2	154	-5 to -20
6D6	I. F. Amp.	6.3	235	---	128	5.2	5.2	---	---
76	Detector	6.3	0	---	---	---	0	---	---
75	A.F. Amp. & AVC	6.3	110	---	---	---	2	---	---
6B5	Output	6.3	235	222	---	---	0	---	---
5Y3	Rectifier	5.0	---	---	---	---	335	---	---

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned and

then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (Shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. NOTE: When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Generator Frequencies.

	Shunt Alignment	Series Alignment
Broadcast Band	1400 Kc.	600 Kc.
High Frequency Band	6000 Kc.	1500 Kc.

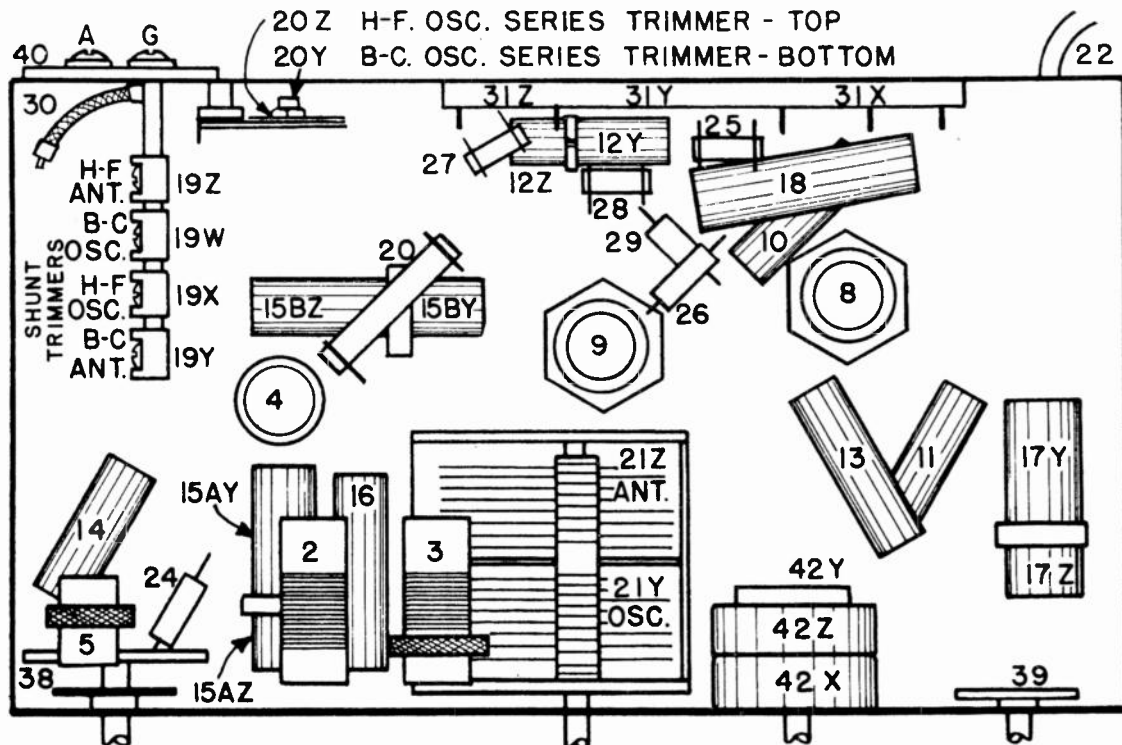


Fig. 3. Bottom View 666

MODELS 666, 5666

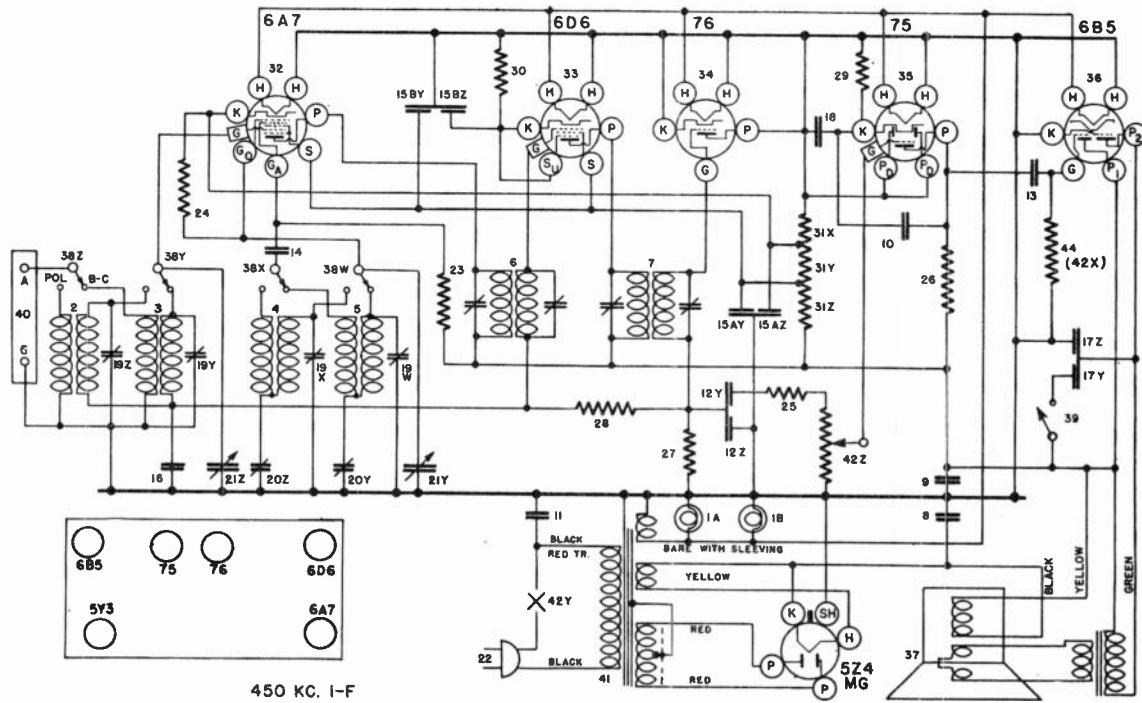


FIG. 1.—WIRING DIAGRAM—MODELS 666 AND 5666

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Item No.	Part No.	Name
1	W -37922	6-8 V. Bulb, Dial Light	25	-21875	Resistor, 100,000 Ohm. 1/4 W.
2	G3 -37965	Socket Assy., Dial Light	26	-35929-C	Resistor, 150,000 Ohm. 1/4 W.
3	G82 -32000	Coil Antenna—2350—7000 Kc.	27	-33314	Resistor, 400,000 Ohm. 1/4 W.
4	G81 -32000	Coil Antenna—540—1725 Kc.	28	-37245-C	Resistor, 1.5 Megohm. 1/4 W.
5	G 65—32002	Coil—2350—7000 Kc., Osc.	29	-36316	Resistor, 2,700 Ohm. 1/4 W.
6	G 66—32002	Coil—540—1725 Kc., Osc.	30	W -28106	Resistor, 500 Ohm. 1/2 W. Flex.
7	G118—32004	Coil—Assy., 1st I-F.	31Z	W -37246	Resistor, 1,000 Ohm. Candohm
8	G 72—32004	Coil—Assy., 2nd I-F.	31Y	W -37246	Resistor, 2,000 Ohm. Candohm
9	W -36055	Cond. 35 Mf. 400 V.	31X	W -37246	Resistor, 185-185 Ohm. Candohm
10	W -36057	Cond. 40 Mf. 300V.	32	G47 -28807	Socket—Type 6A7
11	W -30270	Cond. .001 Mf. 400V.	33	G75 -28807	Socket—Type 6D6
12Z	W -30805	Cond. .01 Mf. 400V.	34	G80 -28807	Socket—Type 76
12Y	W -30322-A	Cond. .0017 Mf.	35	G41 -28807	Socket—Type 75
13	W -23615	Cond. .05 Mf. 400V.	36	G90 -28807	Socket—Type 6B5
14	W -23191-A	Cond. .01 Mf. 400V.	37	W -27981	Base—Tube Shield
15 AZ	W -28623	Cond. .02 Mf. 400V.	38	W -40911	Shield—Tube
15 AY	W -28623	Cond. .02 Mf. 400V.	39	244-BL-9	Speaker, "B" Spec. 50A-2
15 BY	W -28623	Cond. .02 Mf. 400V.	40	-42928	Cone Assy., For above Speaker
16	W -27216	Cond. .05 Mf. 200V.	41	-41473	Output Trans., For above Speaker
17 Z	W -31052	Cond. .004 Mf. 400V.	42	632-CJ-3	Speaker, "M" Spec. 1-D-610
17 Y	W -31052	Cond. .05 Mf. 400V.	43	-42879	Cone Assy., For above Speaker
18	W -37732	Cond. .3 Mf. 160V.	44	-42880	Field Coil, For above Speaker
19	W -37241	Cond. 4 Section Trimmer	45	-42881	Output Trans., For above Speaker
20	G 31—33006	Cond. Series Trimmers	46	-37247	Switch, Band Sel.
21	G 17—33001	Cond. Var. Tuning	47	W -36184-A	Switch, Tone Con.
	W -41736	Drive Unit, 8Pt. Disc. Assy.	48	G1 -26719	Terminal Board, Ant. & Grid
	W -41897	Dial—Calibrated Glass	49	-41978	Transformer, 110V.—60 Cy. Power
	W -41737	Mtg. Brkt. Dial Glass R.H. Model 666	50	-37395	Volume Control (3 Meg.) 1st A-F
	W -41738	Mtg. Brkt. Dial Glass L.H. Only	51	-42X	Grid
	W -41739	Drive Unit	52	NONE	Volume Control (1 Meg.) Output Grid
	B -42617	Dial (Calibrated)	53	-35601	Resistor, 300,000 Ohm 1/4 W.
	MG-14—41980	Dial Glass, Mtg. Brkt. R.H. Model 5666	54	B -40590	Output Grid to Grd.*
	W -40798	Dial Glass, Mtg. Brkt. L.H. Only	55	W -42345	Eacutcheon, (666)
	W -40797-A	Dial Glass Retaining Brkt.	56	D -28	Eacutcheon, (5666)
	W -42629	Pointer—Dial	57	W -37339	Eacutcheon Mtg. Screws
	W -40795	Shaft—Pointer	58	W -37341	Knob, (2) V.C. & S.S.
	W -40909	Washer (Spring) Shaft	59	W -36297	Knob, (2) T.C. & B. S. W.
	W -41611	Ring Shaft, Retaining	60	AG	Volume Control, 3 Meg.*
	B -42374-A	Mask (Metal) Dial	61	MA	Cabinet Model 666
22	B -33906-A	Cord & Plug—Power	62		Cabinet Model 5666
23	W -5370-A	Resistor, 20,000 Ohm 1W			
24	W -35928	Resistor, 60,000 Ohm 1/4 W			

\*May be used in place of Dual Volume Control.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Go	Ga
6A8G	Oscillator-Modulator	6.2	170	92	-3*	-6 to -9**	125
6S7G	1st I-F. Amplifier	6.2	150	92	-3*	—	—
6S7G	2nd I-F. Amplifier	6.2	198	92	-2	—	—
6T7G	Det. AVC & 1st A. F.	6.2	100	—	-2	—	—
6K6G	Output	6.2	193	198	-18.5*	—	—
6X5G							

Power consumption approximately 25 watts at 117.5 volts or 5 amperes at 6 volts.

Power output approximately 3 watts at 117.5 volts or 2.5 watts at 6 volts D. C.

When using a 6 volt storage battery, all voltages will be approximately as given except "H", which will be 6 volts.

\*See CIRCUIT DESCRIPTION.

\*\*100 to 150 microamperes measured between 60,000 ohm grid lead (item 36) and chassis.

Tuning the I-F Amplifier to 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal (G) of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right, (ON).

(c) Turn the band selector switch to the Standard Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 3rd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

Aligning the R-F Amplifier.

When aligning the R-F amplifier, the output lead from the signal generator is connected to the antenna (A1) terminal of the receiver. For the Broadcast Band, a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the Police and Short Wave Bands, a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated for each adjustment, paragraph (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (D) is heard. (It is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then, adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the Police and Short Wave bands, care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

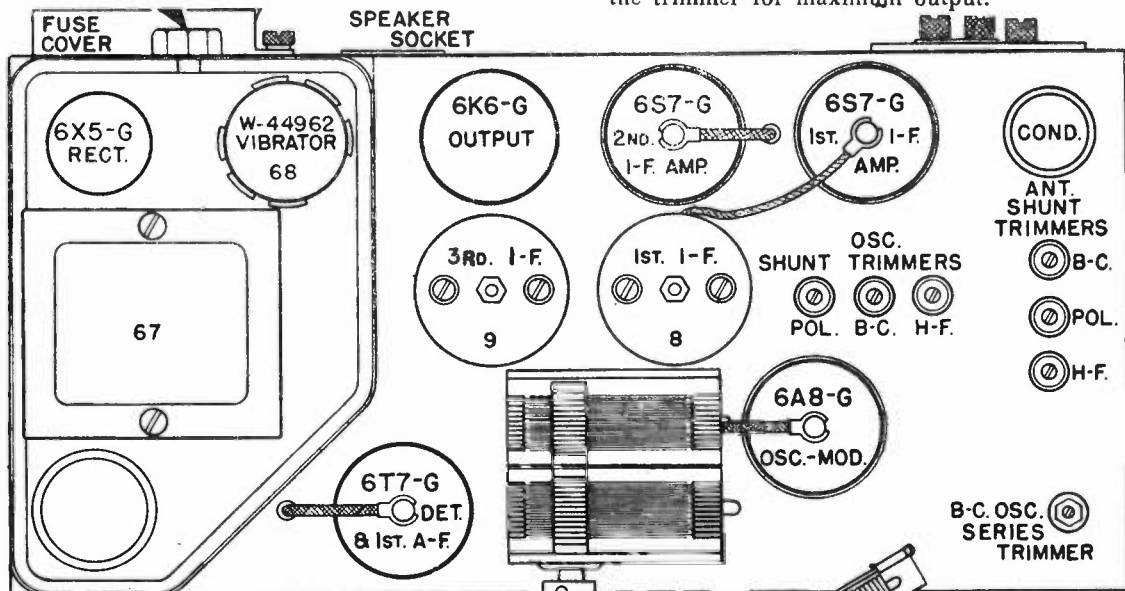
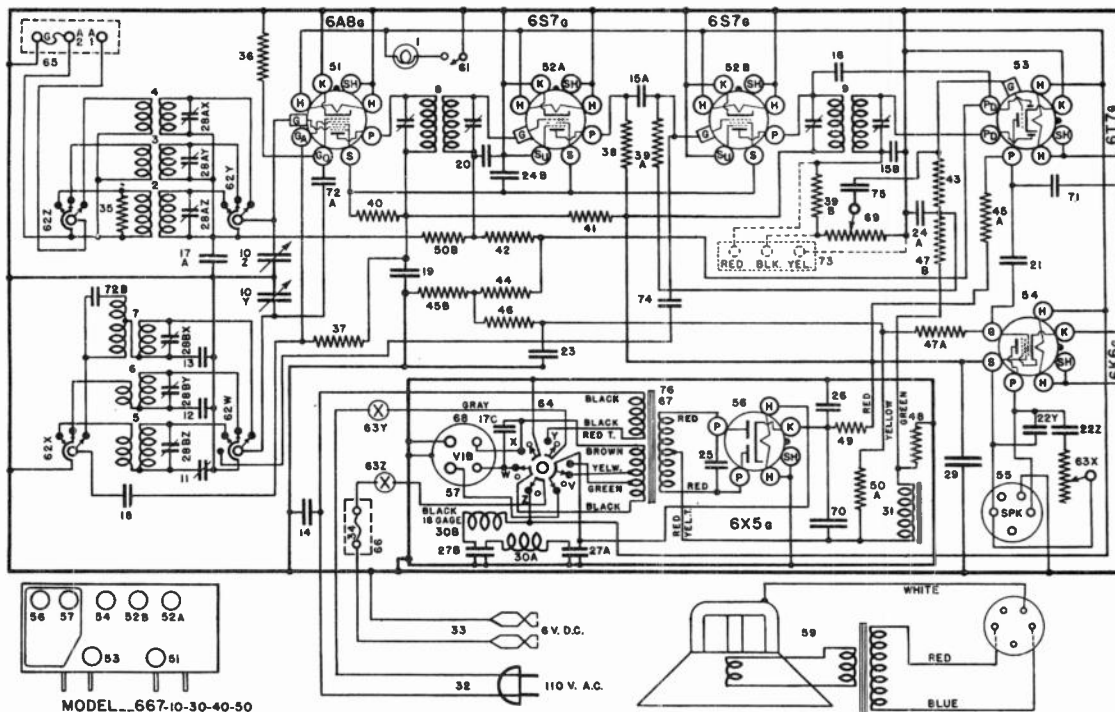


Fig. 2—Top View Model 667

MODEL 667



MODEL...667-10-30-40-50  
455 Kc. I.F.

(D) SIGNAL INPUT FREQUENCIES

	Min. Cap. Signal	Shunt Align.	Series Align.
Standard Broadcast Band	1725 Kilocycles	1400 Kilocycles	600 Kilocycles
Police Band	6.6 Megacycles	6.0 Megacycles	
Short Wave Band	22.5 Megacycles	18 Megacycles	

PARTS LIST—MODEL 667

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-44337	Dial Light Bulb, 6-8 V.	41	W-23013	Resistor, 2,000 Ohm 1/4 W. Flex.
2	G6-27134	Dial Light Socket Assy.	42	-34883	Resistor, 2 Megohm 1/4 W. Carb.
3	G157-32000	Ant. Coil, B-C.	43	-26577	Resistor, 3 Megohm 1/4 W. Carb.
4	G158-32000	Ant. Coil, Pol.	44	-37590	Resistor, 750,000 Ohm 1/4 W. Carb.
5	G153-32000	Ant. Coil, H-F.	45A	-35501	Resistor, 300,000 Ohm 1/4 W. Ins.
6	G159-32002	Osc. Coil, B-C.	45B	-35501	Resistor, 300,000 Ohm 1/4 W. Ins.
7	G162-32002	Osc. Coil, H-F.	46	-37245	Resistor, 1.5 Megohm 1/4 W. Carb.
8	G153-32001	1st I-F.—455 Kc.	47A	-23785	Resistor, 500,000 Ohm 1/4 W. Carb.
9	G179-32004	3rd I-F.—455 Kc.	47B	-23785	Resistor, 500,000 Ohm 1/4 W. Carb.
10	G41-33001	2 Section Gang Condenser	48	W-23012A	Resistor, 40 Ohm 1/4 W. Flex.
	B-45009A	Dial Face (6 V.-110 V.)	49	W-27504	Resistor, 100 Ohm 1/4 W. Flex.
	B-45009	Dial Face (Export Only)	50A	-35500	Resistor, 100,000 Ohm 1/4 W. Ins.
	C-44854A	Support Brkt.—Dial Glass	50B	-35500	Resistor, 100,000 Ohm 1/4 W. Ins.
	W-44085B	Metal Mask—Dial	51	G156-36400	Socket, Type 6A8
	W-44084B	Ring—Glass Support	52	G182-36400	Socket, Type 6S7
	W-44299	Pointer	53	G183-36400	Socket, Type 6T7
	W-40486	Screw—Pointer Mtg.	54	G172-36400	Socket, Type 6K6
	W-43622	Felt Washer	55	G103-28807	Socket Sokr.
	G1-43554	Pulley and Hub Assy.	56	G168-36400	Socket, Type 6X5
	-41592	Drive Cord (18 in.)	57	G105-28807	Socket Vtb.
	W-43561	Drive Spring (Tension)		W-40911	Tube Shield
	W-44130A	Drive Shaft	59	51PP18"B"	Speaker, Spec. No. 100-PG-4 (Console)
	W-43549	Ring—Shaft Retaining	59	31PP18"A"	Speaker, Spec. No. R-6000, M-16 (Table Model)
11	-40769	B-C. Osc. Series Trimmer (Variable)		-44218	V. C. and Cone Assy.
12	G23-34000	Pol. Osc. Series Trimmer (Fixed 1,560 Mmf.)		-44220	Cone Mtg. Ring (Cardboard)
13	G20-34000	H-F. Osc. Series Trimmer (Fixed 4,910 Mmf.)		-45071	Output Transformer
14	W-30805	Condenser, .01 Mf. 400 V.	60		
15A	G2-34002	Condenser, .0001 Mf. Molded	61	G1-44950	Switch—Dial Light
15B	G2-34002	Condenser, .0001 Mf. Molded	62	-44019A	Band Switch
16	G3-34002	Condenser, .0005 Mf. Molded	63	-44946	Switch—On-Off and Tone Control (100,000 Ohm)
17A	W-35936	Condenser, .05 Mf. 200 V.	64	W-44951	Switch—A. C.—D. C.
17C	W-35936	Condenser, .05 Mf. 200 V.	G27	-26719	Ant. and Gnd. Terminal Assy.
18	W-35139	Condenser, .004 Mf. 400 V.	G2	-33339	Fuse Panel
19	W-22888	Condenser, .1 Mf. 400 V.	W	-33310A	Fuse Cover
20	W-28621	Condenser, .02 Mf. 200 V.	W	-34223	Insulator—Fuse Cover
21	W-30488	Condenser, .02 Mf. 400 V.	W	-4072	Thumb Screw—Fuse Cover
22Z	W-31052	Condenser, .05 Mf. 400 V.	W	-44961	Power Trans., 50-60 Cy.—110 V.
22Y	W-31052	Condenser, .05 Mf. 400 V.	W	-44962A	Vibrator (6 V.)
23	W-34712	Condenser, .25 Mf. 160 V.	67	-44081	Volume Control (1 Megohm)
24A	W-24048C	Condenser, .1 Mf. 200 V.	69	W-44960	Condenser, 30 Mf. 250 V.
24B	W-24048C	Condenser, .1 Mf. 200 V.	70	G1-34002	Condenser, .00025 Mf. Molded
25	W-50068A	Condenser, .006 Mf. 1,000 V. (60 Cy.)	72A	G5-34002	Condenser, .00005 Mf. Molded
25	W-45473	Condenser, .003 Mf. 1,000 V. (25 Cy.)	72B	G5-34002	Condenser, .00005 Mf. Molded
26	W-37173	Condenser, .25 Mf. 300 V.	73	G37-26719	Phono. Terminal Assy.
27A	W-50161	Condenser, .5 Mf. 120 V.	74	G13-34002	Condenser, .000035 Mf. Molded
27B	W-50161	Condenser, .5 Mf. 120 V.	75	W-41461	Condenser, .0014 Mf. 200 V.
28	W-35951A	3 Section Shunt Trimmer Assy.	76	-45454	Power Trans., 25 Cy.—125 V.
29	W-44012	Condenser, .16 Mf. 250 V.		-45487	Power Trans., 25 Cy.—220 V.
30A	G25-28067	Choke "A" Filter		-45498	Power Trans., 50 Cy.—220 V.
30B	G25-28067	Choke "A" Filter	7C		Cabinet—Table
31	G22-28535	Choke "B" Filter	7WD		Cabinet—Console
32	B-44004	A-C Power Cord and Plug	B	-44226B	Escutcheon
33	G2-44948	Battery Cable and Clips	W	-43557	Rubber Mtg. Foot
	-34503	Battery Clip (Pos.)	W	-41221	Knob—Station Selector
	-34504	Battery Clip (Neg.)	W	-41222	Knob—Dial Light
	-31103	Fuse, 10 Amp.	W	-41605	Knob—Vol. Cont.
34	W-22196	Resistor, 20,000 Ohm 1/4 W. Carb.	W	-41224	Knob—Tone Cont.
35	-21237A	Resistor, 60,000 Ohm 1/4 W. Carb.	W	-45037	Knob—Band Sw.
36	-4921C	Resistor, 10,000 Ohm 1 W. Carb.	W	-28601	Knob—A. C.—D. C. Sw.
37	-36316	Resistor, 2,700 Ohm 1/4 W. Ins.			
38	-21875	Resistor, 100,000 Ohm 1/4 W. Carb.			
39A	-21875	Resistor, 100,000 Ohm 1/4 W. Carb.			
39B	-23616	Resistor, 15,000 Ohm 1 W. Carb.			
40	-23616	Resistor, 15,000 Ohm 1 W. Carb.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	186	70	—	—	186	-15
6U7G	I-F Amplifier	6.3	186	70	—	—	—	—
6P5G	Detector—A. V. C.	6.3	—	—	—	—	—	—
6F5G	1st A-F Amplifier	6.3	93	—	—	—	—	—
6V6G	Power Output	6.3	180	186	—	-9.5	—	—
5Y3G	Rectifier	5	—	—	—	—	—	—

Voltage drop across speaker field 50 volts, using 396-BP-12 speaker.  
 Maximum power output approximately 3 watts.  
 Power consumption at 117.5 volts approximately 63 watts with phono operating.

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

**Aligning the R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna lead of the receiver. a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh

adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**SETTING THE PUSH BUTTONS**

With a small screw driver or pen knife remove celluloid cover and the call letters. Insert screw driver in the hole in the front of the button and loosen the set screw a turn or two. With the manual tuning knob, tune-in as ACCURATELY AS POSSIBLE the station whose call letters were in the button or that station for which the button is to be set. Then push the button all the way down and while you hold it in that position SECURELY TIGHTEN the set screw. Replace the call letters and call letter cover. Use same procedure in resetting or adjusting the rest of the push buttons.

**(C) SIGNAL INPUT FREQUENCIES**

I-F Alignment Signal  
455 Kilocycles

Minimum Capacity Signal  
1,725 Kilocycles

Shunt Alignment Signal  
1,400 Kilocycles

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 30).

The wave trap should not be adjusted until all other

adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 100 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

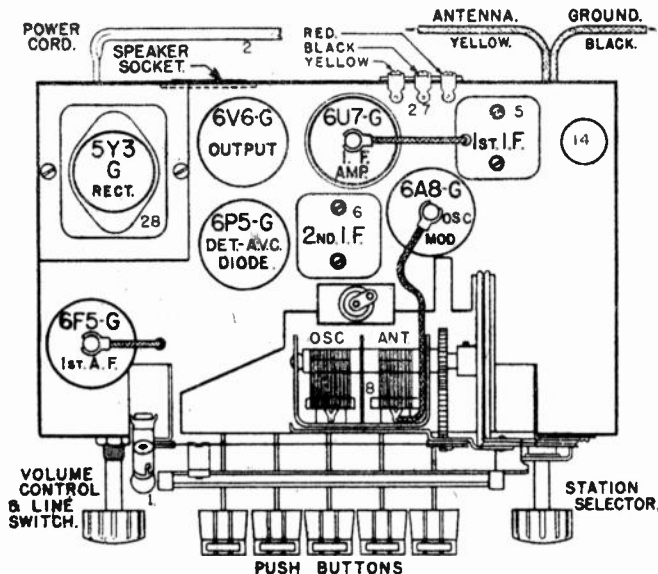


Fig 2—Top View Model 668

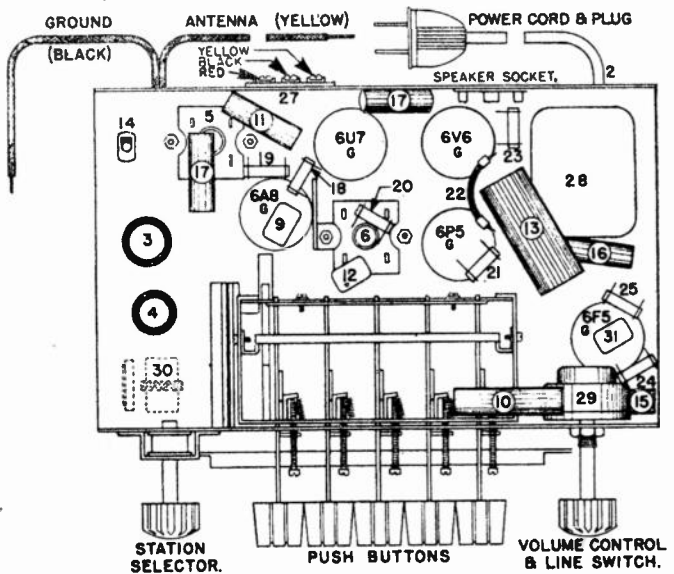
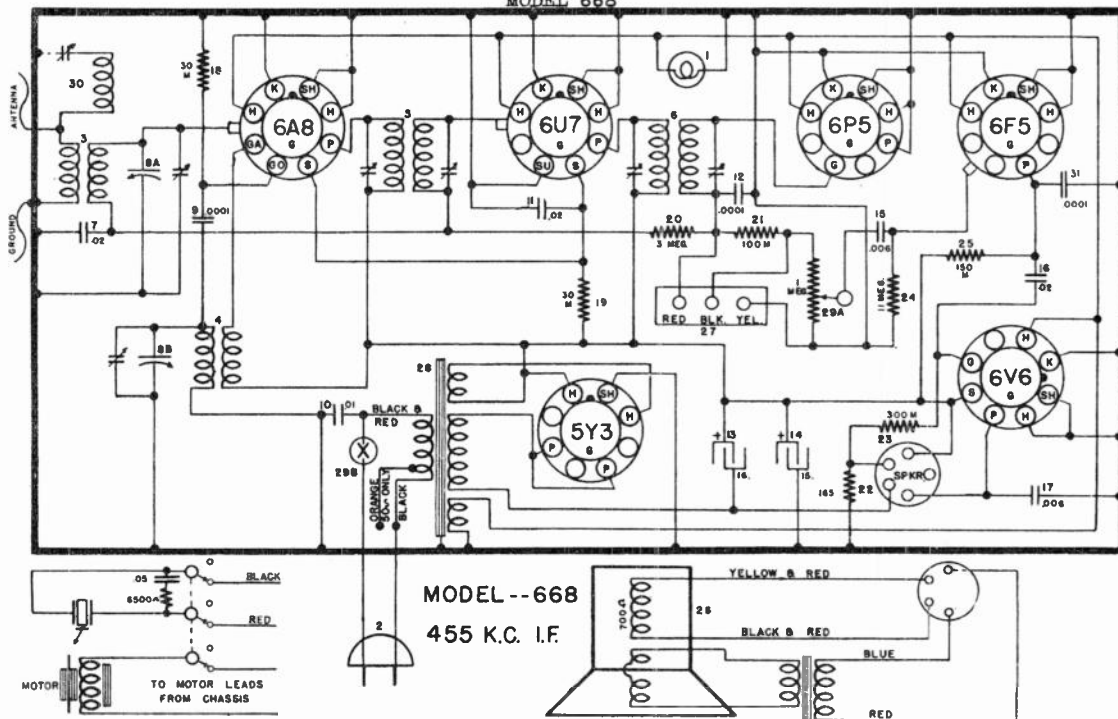


Fig. 3—Bottom View Model 668

MODEL 668

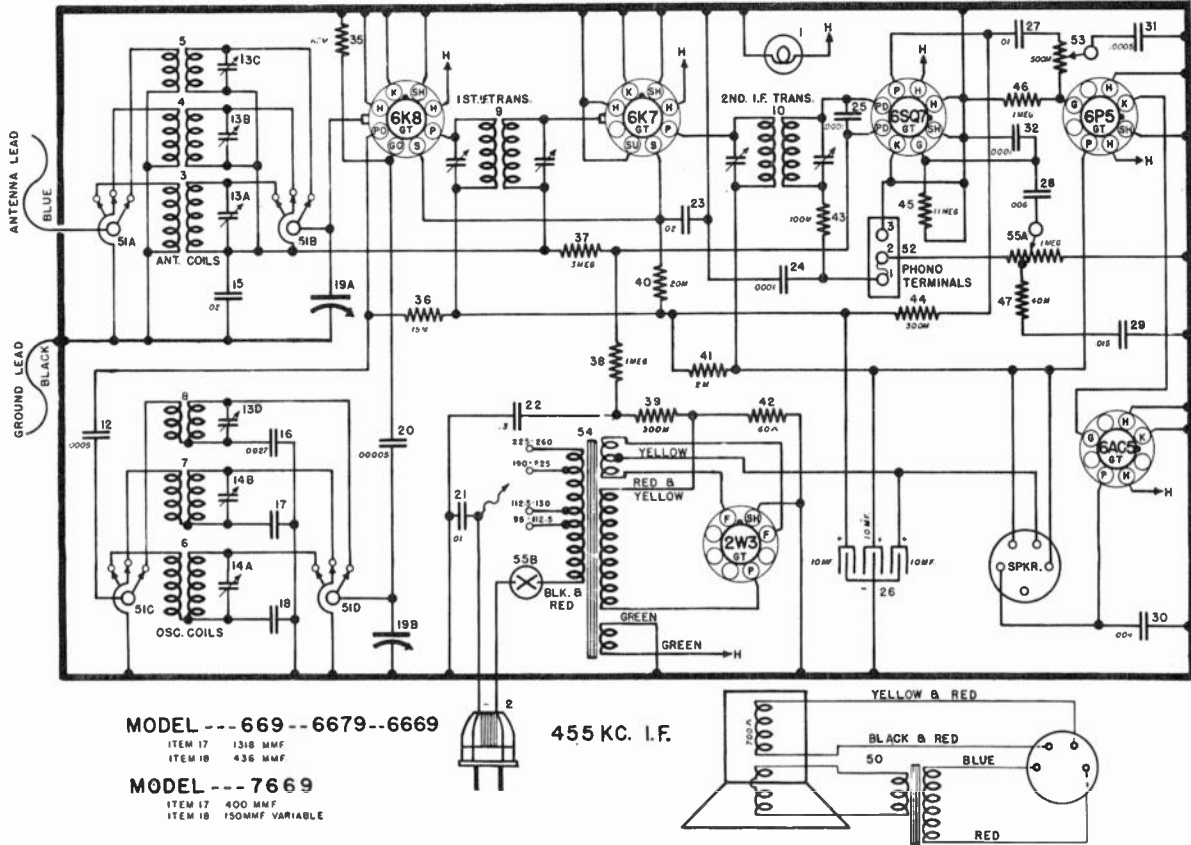


Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light Bulb, 6-8 Volt		2046	No. 8 Shakeproof Washer (Key Plate) (2 Req.)
2	B -45769A	A. C. Power Cable			
3	G1R6-33000	Antenna Coil	D -16905C		RNB Cabinet
4	G184-33002	Oscillator Coil	D -16139B		RN Cabinet
5	G187-33002	1st I. F. Transformer	N	8	No. 8-32 Hex. Nut (Speaker) (4 Req.)
6	G188-33004	2nd I. F. Transformer	N	2046	Int. Shknf. Washer (Speaker) (1 Req.)
7	W -28621	Condenser, .02 Mf. 200 V. Paper	N	-44499	No. 8-32 x 3/4" W. H. M. Screw (Chassis) (4 Req.)
8A	G52 -33001	2 Sect. Var. Cond. (Antenna Oscillator)	W	-45579	Flat Washer (Chassis) (4 Req.)
9	G12 -43564	Pulley and Hub Assembly	W	-45972	Knob (3 Req.)
10	W -23877	No. 8-32 x 3/8" Set Screw (2 Req.)	W	-43552	Speaker Plug Clamp
11	G28 -15683	Riveted Mounting Bracket Assembly	W	-15908	No. 8 x 3/8" P. K. Screw (Speaker Plug Clamp)
12	MG14-15894	Riveted Dial Support Bracket, R. H.			
13	MG15-15891	Riveted Dial Support Bracket, L. H.			
14	C -46042	Dial Glass			
15	W -45712B	Dial Glass Cushion	D	-165	No. 8 x 1" Oval Hd. Wood Screw (8 Req.) (Motor Board)
16	W -45985	Dial Glass Clip, R. H.	W	-20754A	Cup Washer (8 Req.) (Motor Board)
17	W -45984	Dial Glass Clip, L. H.	W	-46118A	Escutcheon
18	W -48397	Dial Hand	D	-30	No. 2 x 3/8" Oval Hd. Screw (Escutcheon) (4 Req.)
19	W -16037	Dial Hand Guide			
20	R -127	No. 6-32 x 3/4" Screw (Dial Hand Guide) (2 Req.)	D	-46180	Cabinet Back
21	W -45808	No. 8 x 3/8" P. K. Screw (Dial Glass Clips) (2 Req.)	W	-46464	No. 6 x 1/2" Thumb Hd. Wood Screw (Cabinet Back) (8 Req.)
22	H -45743B	Dial Support	W	-47863	Call Letter Sheet
23	W -46056	Drive Shaft	W	-50551B	Call Letter Cover
24	W -43542	Drive Shaft Bracket	W	-46860	Instruction Booklet
25	W -45804	No. 8 x 3/8" P. K. Screw (Drive Shaft Bracket)	W	-47337	Tone Arm Support (RNB only)
26	G2	Drive Cord (41 Inches)	MG25-46828		483 Motor Board Assembly
27	W -46087	Drive Cord Spring	MG25-46851		Tone Arm Assembly
28	W -16290	Cord Clamp	MG31-46828		Switch Assembly
29A	G2	Condenser, .0001 Mf. Molded	G146-34403		Shielded Lead (Switch Assembly)
29B	W -34002	Condenser, .01 Mf. 400 V. Paper	MG45-46153		Drive Pulley Kit
30	W -28621	Condenser, .02 Mf. 200 V. Paper	D -46145C		Motor Board
31	G2	Condenser, .0001 Mf. Molded	W -46144		Motor Shield
	W -46128	Condenser, 16 Mf. 250 V. Elect.	S -80		No. 4 x 1/2" Rd. Hd. Wood Screw (Motor Shield) (3 Req.)
	W -45968	Condenser, 15 Mf. 250 V. Elect.	W -46169C		Motor
	W -28619	Condenser, .006 Mf. 200 V. Paper	W -33502		Needle Cup (2 Req.)
	W -28621	Condenser, .02 Mf. 200 V. Paper	W -33503		Needle Cup Lid (2 Req.)
	W -34397	Resistor, 30,000 Ohms 1/2 W. Carb.	W -46148A		Phono-Radio Switch
	W -33390	Resistor, 30,000 Ohms 1/2 W. Carb.	R -132		No. 6-32 x 3/8" Rd. Hd. Mach. Screw (Phono-Radio Switch) (2 Req.)
	W -26577	Resistor, 3 Megohms 1/2 W. Carb.	S -159		No. 8 x 3/4" Rd. Hd. Wood Screw (Motor) (3 Req.)
	W -21875	Resistor, 100,000 Ohms 1/2 W. Carb.	W -46172		Turn Table
	W -21961	Resistor, 165 Ohms 1/2 W. Flex.	W -46161		1/2 x 27 Hex. Nut (Turn Table)
	W -21455	Resistor, 300,000 Ohms 1/2 W. Carb.	W -46174A		Motor Mounting Bracket
	W -37584	Resistor, 11 Megohms 1/2 W. Carb.	W -6700C		Hook Up Wire, 18" (Switch Assy.)
	W -23403	Resistor, 150,000 Ohms 1/2 W. Carb.	W -46200		Rubber Drive Pulley
	380BP12"B"	Speaker, Spec. 66-WA-16	W -46364		Chromium Tipped Needles
	W -47308	Speaker Cone Assembly	W -46367		Phono Switch Shield
	W -46693	Field Coil (700 Ohm)	W -46368		Motor Shield
	W -47309	Output Transformer	S -78		No. 4 x 1/2" Rd. Hd. Wood Screw (Motor and Phono Shields) (5 Req.)
	G103-28807	Speaker Socket	W -45817B		Condenser, .05 Mf. 160 V. Paper (Motor Board)
	346BP12"M"	Speaker, Spec. 1-D-1088	W -23868		Resistor, 6,500 Ohms 1/2 W. Carbon (Switch Assembly)
	W -44544	Field Coil (900 Ohm)	W -22323		No. 8 x 3/4" Oval Hd. Wood Screw (Motor Board) (2 Req.)
	W -44543	Speaker Cone Assembly	W -20754A		Cup Washer (Motor Board) (2 Req.)
	W -44545	Output Transformer	W -47399		Motor Insulator
	G41-26719	Phono Terminal Board	W -47325		Crystal Cartridge
	W -46843	Power Transformer	W -47326		Arm and Pivot (Only)
	W -46124	(Volume Control (1 Megohm) A. C. Power Switch)	W -47324		Needle Screw (In Envelope)
	G103-32004	Wave Trap	W -47327		Flat Washer (Bronze)
	G2 -34002	Condenser, .0001 Mf. Molded	W -47328		Lock Washer
	G7 -45683	Push Button Unit Assembly	W -47329		1/2" Mounting Nut
	G23 -45683	Riveted Key Assembly (5 Req.)	W -46991		Pickup and Tone Arm Assembly
	G22 -45683	Rocker Plate Assembly			
	W -50547	Key Plate			
	W -31388	No. 8-32 x 3/8" W. H. M. Screw (Key Plate) (2 Req.)			
	W -50588B	Adjusting Clip (4 Req.)			
	W -45646B	Adjusting Clip (1 Req.)			
	W -50561	No. 6-40 x 1/4" Fil. Hd. Screw (Rocker Plate Bearing)			
	W -50542D	Key Clip (5 Req.)			
	W -45717	No. 6-32 x 1 1/4" Fil. Hd. Screw (Clamp Screw) (5 Req.)			
	W -50607C	Key Return Spring (5 Req.)			

50 CYCLE OPERATION





MODEL --- 669--6679--6669

ITEM 17 1318 MMF  
ITEM 18 436 MMF

MODEL --- 7669

ITEM 17 400 MMF  
ITEM 18 150MMF VARIABLE

455 KC. I.F.

1	W-37922	Dial Light, 6-8 v.	36	37485	15,000 ohm 1/2 w. Carb. Res.
9	G236-32004	1st I.F. Trans.	37	36688	3 meg. 1/2 w. Ins. Res.
10	G235-32004	2nd I.F. Trans.	38	35602	1 meg. 1/2 w. Ins. Res.
12	G3-34002	.0005 mfd. Cond., Mica	39	21455	300,000 ohm 1/2 w. Ins. Res.
13A	W-41247-A	Ant. Trim. Cond.	40	37377	20,000 ohm 1 w. Ins. Res.
13B	W-41247-A	Ant. Trim. Cond.	41	W-23013	2,000 ohm 1 1/2 w. Flex. Res.
13C	W-41247-A	Ant. Trim. Cond.	42	50643	60 ohm 1/2 w. Wire Wound Res.
13D	W-41247-A	Osc. Trim. Cond.	43	35600	100,000 ohm 1/2 w. Ins. Res.
15	W-49487	.02 mfd. 160 v. Cond.	44	35601	300,000 ohm 1/2 w. Ins. Res.
16	G11-34005	2700 mmf. Cond., Mica	45	37584	11 meg. 1/3 w. Carb. Res.
20	G5-34002	50 mmf. Cond., Mica	46	35602	1 meg. 1/2 w. Ins. Res.
21	W-30805	.01 mfd. 400 v. Cond.	47	36761	40,000 ohm 1/2 w. Ins. Res.
22	W-49490	.3 mfd. 160 v. Cond.	51	49172-A	Band Chg. Sw.
23	W-28621	.02 mfd. 200 v. Cond.	52	G50-26719	Term. Bd., Phono.
24-25	G2-34002	.0001 mfd. Cond., Mica	54	B-49579	Power Trans. (Semi-Univ.)
26	W-49171	10-10-10 mfd. Elec. Cond.	54	49638	Power Trans. (6669 only)
27	W-49489	.01 mfd. 400 v. Cond.	54A	49204	Power Trans.
28	W-49488	.006 mfd. 400 v. Cond.	54B		Sw. Pri. Tap
29	W-30251	.015 mfd. 400 v. Cond.	54A	49211	Power Trans., 50 cy.110 v.
30	W-35139	.004 mfd. 400 v. Cond.	54B		Sw. Pri. Tap
31	G3-34002	.0005 mfd. Cond., Mica	54A	49212	Power Trans., 50 cy.220 v.
32	G2-34002	.0001 mfd. Cond., Mica	54B		Sw. Pri. Tap
35	21237-A	60,000 ohm 1/3 w. Carb. Res.			

6669, 669 ADDENDUM

14A,B	W-37986-A	Osc. Trim. Cond.	5	G212-32000	Ant. Coil (Foreign)
19A,B	G89-33001	Ant. & Osc. Sect. Var. Cond.	6	G220-32002	Osc. Coil (Broadcast)
50	U-49220	Spkr., 380 BPW-12	7	G219-32002	Osc. Coil (Police)
53	48020-B	500M Tone Control	8	G218-32002	Osc. Coil (Foreign)
55A,B	48019	1 meg. Vol. Cont. & Sw.	17	G15-34005	1318 mmf. Cond., Mica
3	G210-32000	Ant. Coil (Broadcast)	18	G19-34002	436 mmf. Cond., Mica
4	G211-32000	Ant. Coil (Police)			

6679 ADDENDUM

14A,B	W-37986-A	Osc. Trim. Cond.	5	G212-32000	Ant. Coil (Foreign)
19A,B	G87-33001	Ant. Sect. Var. Cond.	6	G220-32002	Osc. Coil (Broadcast)
50	B-49443	Spkr., 280 BLW-7	7	G219-32002	Osc. Coil (Police)
53	48181-B	500M Tone Control	8	G218-32002	Osc. Coil (Foreign)
55A,B	48170	1 meg. Vol. Cont. & Sw.	17	G15-34005	1318 mmf. Cond., Mica
3	G210-32000	Ant. Coil (Broadcast)	18	G19-34002	436 mmf. Cond., Mica
4	G211-32000	Ant. Coil (Police)			

7669 ADDENDUM

14A,B	W-46214	Osc. Trim. Cond.	5	G219-32000	Ant. Coil (Foreign)
19A,B	G93-33001	Ant. & Osc. Sect. Var. Cond.	6	G288-32002	Osc. Coil (Weather Band)
50	U-49220	Spkr., 380 BPW-12	7	G227-32002	Osc. Coil (Broadcast)
53	48020-B	500M Tone Control	8	G226-32002	Osc. Coil (Foreign)
55A,B	48019	1 meg. Vol. Cont. & Sw.	17	G14-34002	500 mmf. Cond., Mica
3	G217-32000	Ant. Coil (Weather Band)	18	37917	Trim. Cond.
4	G218-32000	Ant. Coil (Broadcast)			

TUBE SOCKET VOLTAGE READINGS

Tube		H	P	S	G	Su	K	Ga	Go
6A8G	Oscillator-Modulator	6.3	150	90	—	—	3.0	115	Neg.
6K7G	I-F Amplifier	6.3	150	90	—	3.0	3.0	—	—
6Q7G	Det. & A-F Amp.	6.3	80	—	-3	—	0	—	—
25A6G	Output	25.0	125	150	-16	—	0	—	—
25Z6G	Rectifier	25.0							
W-42520	Ballast Tube		Variable						

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the right (High Frequency Position) and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum reading on the output meter.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum reading on the output meter.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead

from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned (Broadcast Band) and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers. (See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer.

To adjust the "series" trimmer (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Generator Frequencies.

High Frequency Band	Shunt Alignment	Series Alignment
Broadcast Band	1400 Kc.	600 Kc.
	6000 Kc.	

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —4099B	Dial Light Bulb	26AB	W —28589	Resistor 350 Ohm 1/2 W. Flexible
	G6 —27130	Socket—Dial Light	27	—31093	Resistor 2700 Ohm 1/4 W.
2	G124—32000	Ant. Coil B-C-B	28	—24814	Resistor 7000 Ohm 1/4 W.
3	G123—32000	Ant. Coil H-F-B	29	—27024	Resistor 8000 Ohm 1/4 W.
4	G128—31034	1st I-F Assembly	30	—36318	Resistor 15000 Ohm 1/4 W.
5	G129—32004	2nd I-F Assembly	31	—35928	Resistor 60000 Ohm 1/4 W.
6	G118—32002	Osc. Coil B-C-B	32	—35600	Resistor 100,000 Ohm 1/4 W.
7	G117—32002	Osc. Coil H-F-B	33	—35930	Resistor 200,000 Ohm 1/4 W.
8	G2 —34002	Condenser .0001 Mf.	34	—34020	Resistor 250,000 Ohm 1/4 W.
9AB	G1 —34002	Condenser .00025 Mf.	35	—36321	Resistor 400,000 Ohm 1/4 W.
10	W —30325	Condenser .003 Mf.	36	—35602	Resistor 1. Megohm 1/4 W.
11	W —32378	Condenser .01 Mf. 400V.	37	—35927	Resistor 2 Megohm 1/4 W.
12AB	W —36541	Condenser .02 Mf. 160 V.	38	G156—36400	Socket Type 6A8
CD			39	G151—36400	Socket Type 6K7
13AB	W —35936	Condenser .05 Mf. 200 V.	40	G160—36400	Socket Type 6Q7
14	W —32780B	Condenser .05 Mf. 400 V.	41	G161—36400	Socket Type 25A6
15	W —34712	Condenser .25 Mf. 160 V.	42	G162—36400	Socket Type 25Z6
16	W —24049C	Condenser .1 Mf. 200 V.	43	G169—36400	Socket Type Ballast
17	W —30321	Condenser 1. Mf. 160 V.	W —35774	Tube Shield Base	
18ZY	G26 —33001	2 Section Var. Tuning Cond. Gang	W —35772	Tube Shield (Half)	
	MG15—42502	Dial Assembly (Complete)	W —85773	Tube Shield Cap	
	C —42553A	Drive Unit—Dial	44	346BL9 "M"	Speaker Spec. 1-D-667
	B —42481A	Dial (Calibrated)		—41638	Cone Assembly
	W —42494	Dial Hand		—40275	Field Coil
	W —40186	Screw (Hand Mtg.)		—42878	Output Trans.
	—42713A	Band Indic. Dial Assembly	45	—42519	Band Selector Switch
	—43412	Dial Vern.-Indic. Assembly	46Z		Volume Control
	—43413	Drive Chain	46Y	—42522	Line Switch
	—43414	Take-Up Spring	47	W —27216	Condenser .05 Mf. 200 V.
19	W —37241B	4 Section Shunt Trimmer	48	W —42686	Resistor 50 Ohm 1/2 W. Flexible
20	—40769	B-C Osc. Series Trimmer	49	W —42701	A. C.—D. C. Switch
21	G21 —34000	H-F Osc. Series Cond.		G111—34403	Ant. Lead Assembly
22AB	W —40325	Condenser 50 Mf. 150 V.		B —42543	Escutcheon and Lens
23	W —36057	Condenser 40 Mf. 300 V.		W —37341	Knob—3 Req.
24	W —41081	Condenser 16 Mf. 250 V.		—6AA	Cabinet
25	B —3390A	Power Cord and Plug			

MODEL 676

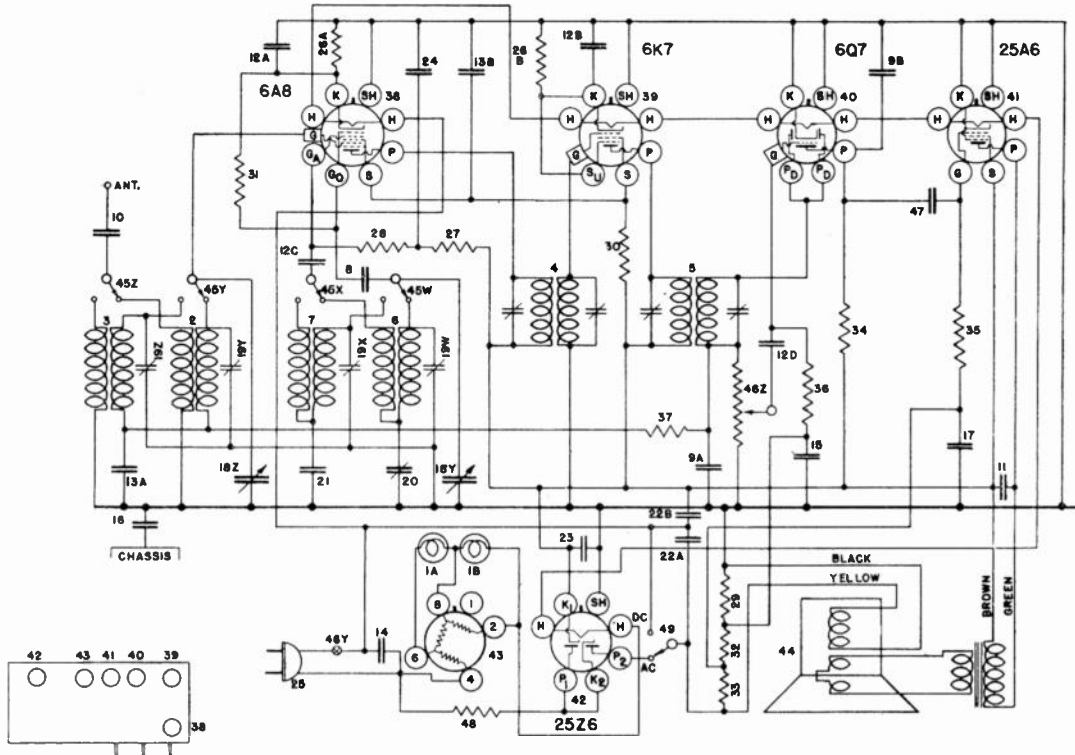


FIG. 1—WIRING DIAGRAM—MODEL 676

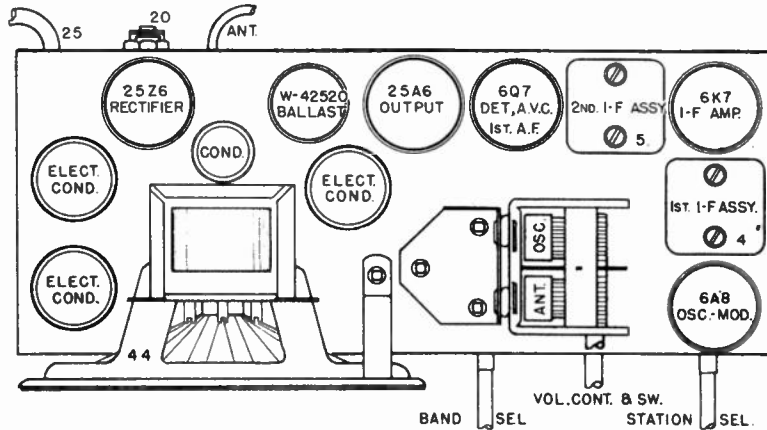


Fig. 2 Top View 676

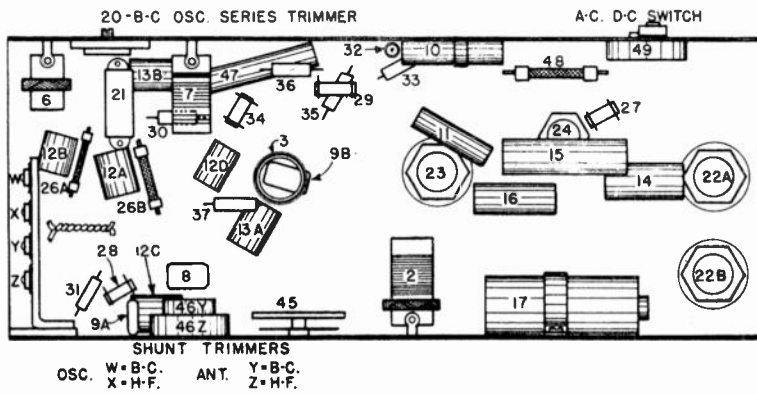


Fig. 3 Bottom View 676

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	210	120	0	-15	175
6U7G	I-F Amplifier	6.3	210	120	0	—	—
6Q7G	Det. AVC & A-F Amp.	6.3	90	—	-3	—	—
6K6G	(2) Output	6.3	205	210	20	—	—
5Y3G	Rectifier	5.0	—	—	215	—	—

Power output approximately 4.5 watts.  
 Power consumption approximately 60 watts at 11.5 volts.  
 Voltage drop across speaker field 60 volts.

Tuning I-F Amplifier To 455 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the Medium Wave Band.
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 7, Fig. 2).
- (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 6, Fig. 2).

Aligning R. F. Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Long and Medium Wave Bands a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Band a 250 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Long Wave Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "Ant" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

(D) SIGNAL INPUT FREQUENCIES

<b>Min. Cap. Signal</b>	<b>Shunt Align.</b>
380 Kilocycles	375 Kilocycles
1,725 Kilocycles	1,400 Kilocycles
18,300 Kilocycles	18,000 Kilocycles

**Series Align.**  
150 Kilocycles

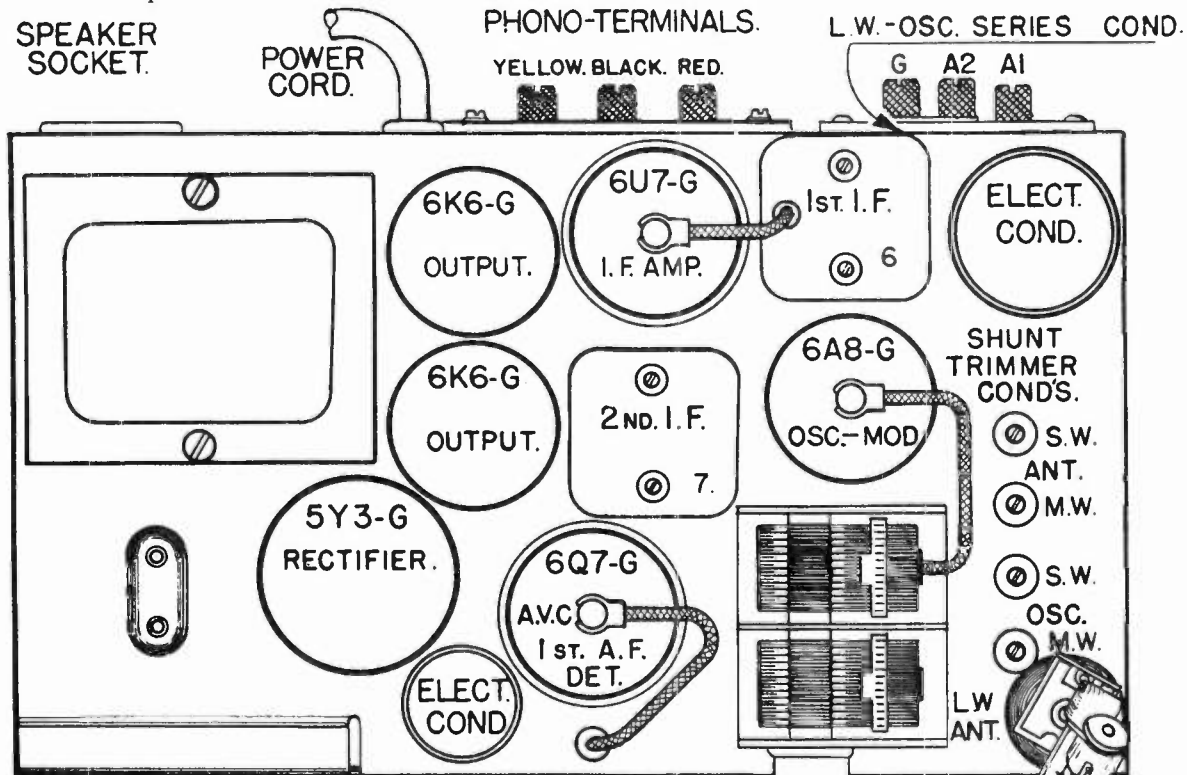
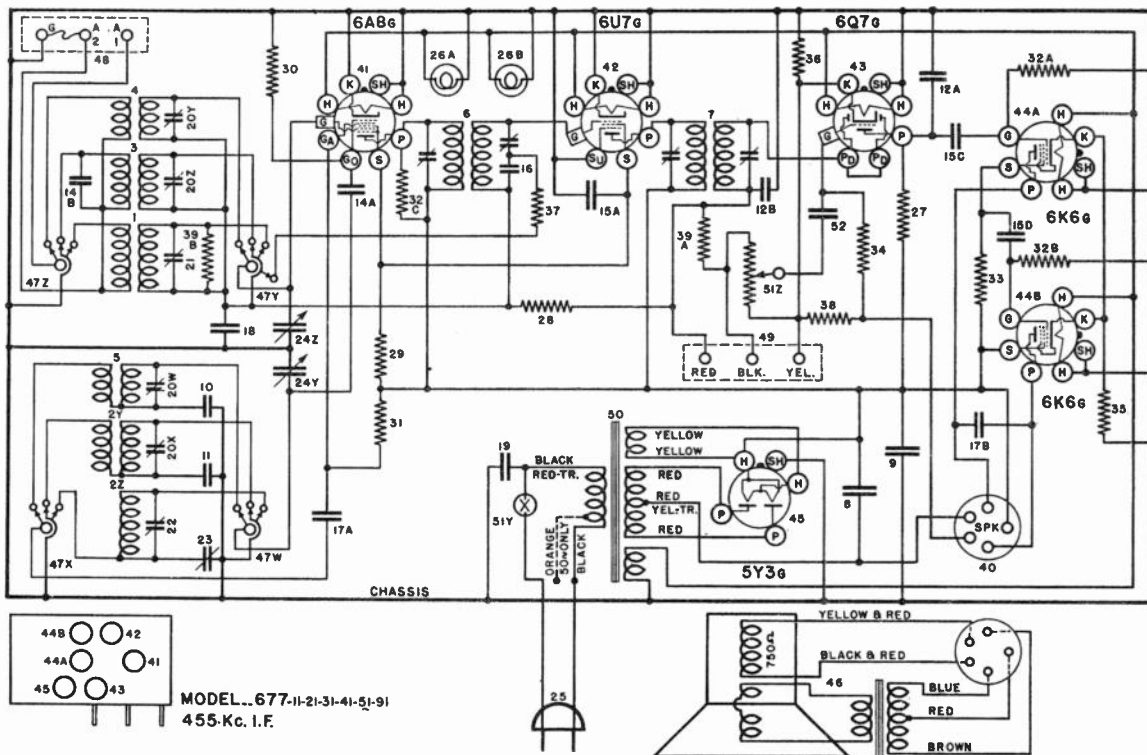


Fig. 2. Top View—Model 677  
365

MODEL 677



MODEL...677-II-21-31-41-51-91  
455-Kc. I. F.

Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G165-32000	Ant. Coil. L. W.	29	-37485	Resistor, 15,000 Ohm 1/4W. Carb.
2Z	G166-32002	Osc. Coil. L. W.	30	-35325	Resistor, 60,000 Ohm 1/4W. Carb.
2Y	G166-32002	Osc. Coil. M. W.	31	-37474	Resistor, 7,000 Ohm 1/4W. Carb.
3	G143-32000	Ant. Coil. M. W.	32A	-33344	Resistor, 400,000 Ohm 1/4W. Carb.
4	G164-32000	Ant. Coil. S. W.	32B	-33344	Resistor, 400,000 Ohm 1/4W. Carb.
5	G144-32002	Osc. Coil. S. W.	32C	-33344	Resistor, 400,000 Ohm 1/4W. Carb.
6	G180-32004	1st I-F. Assy.	33	-44009	Resistor, 3,000 Ohm 1/4W. Ins.
7	G181-32004	2nd I-F. Assy.	34	-34883	Resistor, 2 Megohm 1/4W. Carb.
8	W -3657B	Condenser, 40 Mf. 300 V.	35	W -43462	Resistor, 375 Ohm 2 1/4W. Flex.
9	W -41081	Condenser, 16 Mf. 250 V.	36	W -23012A	Resistor, 40 Ohm 1/4W. Flex.
10	G16 -34000	Condenser, 3,800 Mmf. (S. W. Osc. Series)	37	W -35467	Resistor, 220 Ohm 1/4W. Flex.
11	G14 -34002	Condenser, 400 Mmf. (M. W. Osc. Series)	38	W -37631	Resistor, 32 Ohm 1/4W. Flex.
12A	G1 -34002	Condenser, .00025 Mf. Molded	39A	-23403	Resistor, 150,000 Ohm 1/4W. Carb.
12B	G1 -34002	Condenser, .00025 Mf. Molded	39B	-23403	Resistor, 150,000 Ohm 1/4W. Carb.
13	G2 -34002	Condenser, .0001 Mf. Molded	40	G103-28807	Socket Sokr.
14A	G2 -34002	Condenser, .0001 Mf. Molded	41	C156-36400	Socket, Type 6A8
14B	G2 -34002	Condenser, .0001 Mf. Molded	42	G171-36400	Socket, Type 6U7
15A	W -28621	Condenser, .02 Mf. 200 V.	43	G160-36400	Socket, Type 6Q7
15C	W -28621	Condenser, .02 Mf. 200 V.	44A	G172-36400	Socket, Type 6K6
15D	W -28621	Condenser, .02 Mf. 200 V.	44B	G172-36400	Socket, Type 6K6
16	W -45336	Condenser, .004 Mf. 200 V.	45	G173-36400	Socket, Type 5Y3
17A	W -28619	Condenser, .006 Mf. 200 V.	46 m	W -40911	Tube Shield
17B	W -28619	Condenser, .006 Mf. 200 V.		365BP12"M"	Speaker Mfg. Spec. No. 1-D-1089
18	W -36541	Condenser, .02 Mf. 160 V.		-44542	V. C. and Cone Assy.
19	W -30805	Condenser, .01 Mf. 400 V.		-44273	Field Coil (750 Ohm 60 M. A.)
20	W -41247A	4 Section Shunt Trimmer Assv.		-44274	Output Transformer
21	W -44655	L. W.—Ant. Shunt Trimmer Cond.		-44682	Sokr. Plug
22	W -44516	L. W.—Osc. Shunt Trimmer Cond.		-43674	Cone Mtg. Ring (Cardboard)
23	W -40444	L. W.—Osc. Series Trimmer Cond.	47	-45325	Band Change Switch
24	G42-33001	2 Section Var. Gang Condenser	48	G27-26719	Ant. and Gnd. Terminal Assy.
	B -45314	Dial Face (Glass)	49	G37-26719	Phono Terminal Assy.
	W -44299	Pointer	50	-44356	Power Trans., 110 V.—60 Cy.
	W -40486	Screw Pointer Mtg.		-44359	Power Trans., 110 V.—50 Cy.
	W -44085B	Mask (Polished Metal)		-44360	Power Trans., 220 V.—50 Cy.
	W -45406A	Mtg. Bracket (Dial)		-44357	Power Trans., 110 V.—25 Cy.
	W -45405	Ring (Dial Glass Support)		-44358	Power Trans., 220 V.—25 Cy.
	G1 -43564	Pulley and Hub Assy.		-45366	Power Trans., 40 Cy.—Universal
	W -41582	Drive Cord (18 1/4")	51Z	-43449A	Volume Control, 1/2 Meg.
	W -43561	Cord Tension Spring	51Y	W -38653B	Line Switch
	W -43542B	Bracket (Drive Shaft)	52	W -4226B	Condenser, .02 Mf. 200 V.
	W -44134A	Drive Shaft		7EG	Cabinet
	W -43549	Retaining Ring (Shaft)	B	-45341	Escutcheon
	G3 -45398	Dial Light Socket Assy.	W	-44381B	Knob (Band Sw.)
	W -44004	Power Cord and Plug	W	-43553	Knob (Vol. Cont. and Station Sel.)
25	W -43567	Dial Light Bulb (6-8 V.)	W	-45263	Rubber Mtg. Foot
26A	W -43567	Dial Light Bulb (6-8 V.)			Metal Grille Bar
26B	W -43567	Dial Light Bulb (6-8 V.)			
27	-21455	Resistor, 300,000 Ohm 1/4W. Carb.			
28	-26577	Resistor, 3 Megohm 1/4W. Carb.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8GT	Oscillator-Modulator	6.3	105	70	—	—	-10	105
6K7GT	I-F Amplifier	6.3	105	70	—	—	—	—
6SQ7GT	Det, AVC, A-F Amplifier	6.3	35	—	—	—	—	—
25L6GT	Output	25.1	100	105	—	6	—	—
25Z6GT	Rectifier	25.1	117.5 A.C.	—	—	132	—	—
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop		—	—	—	—	—

Power output approximately 2 watts.  
 Power consumption approximately 48 watts.  
 Voltage drop across speaker field 27 volts.  
 All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning The I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT, leaving grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B.C.).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig. 2, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning the R-F Amplifier

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the standard Broadcast Band and special police band use a .0001 mf. condenser and for the short wave band a 250 ohm carbon resistor instead of the condenser.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to B.C. position, adjust the B.C. "OSC" trimmer condenser of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser B.C. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 2.5 megacycles and turn band switch to special police band (middle position).

(h) Tune in 2.5 signal on receiver and then adjust POL. "ANT" trimmer condenser (Fig. 2) for maximum output. There is no "OSC" adjustment for this band.

(i) Set signal generator to 18.3 megacycles, turn band switch to S.W. position (left) and open gang all the way.

(j) Adjust S.W. "OSC" trimmer condenser for maximum output.

(k) Set signal generator to 18 megacycles.

(l) Tune in 18 mc. signal on receiver, then adjust the S.W. "ANT" trimmer condenser for maximum output.

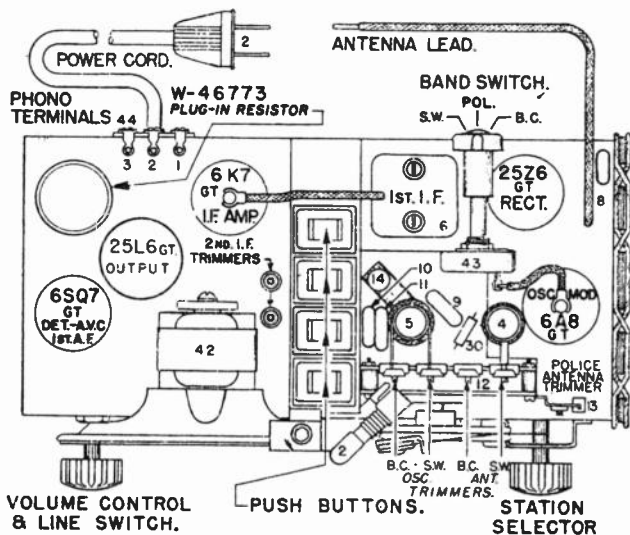


Fig. 2—Top View Model 689

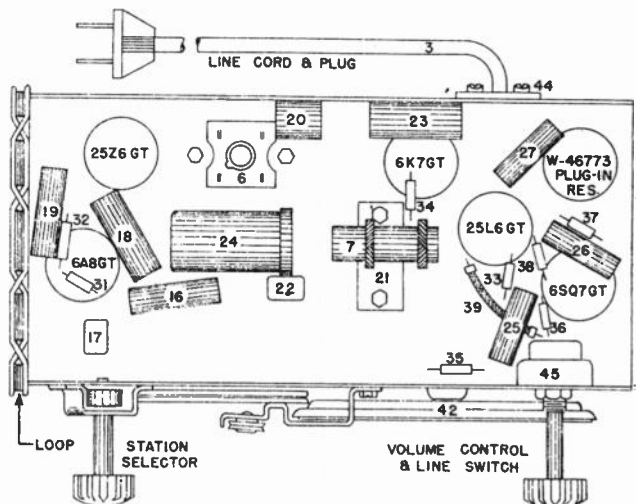
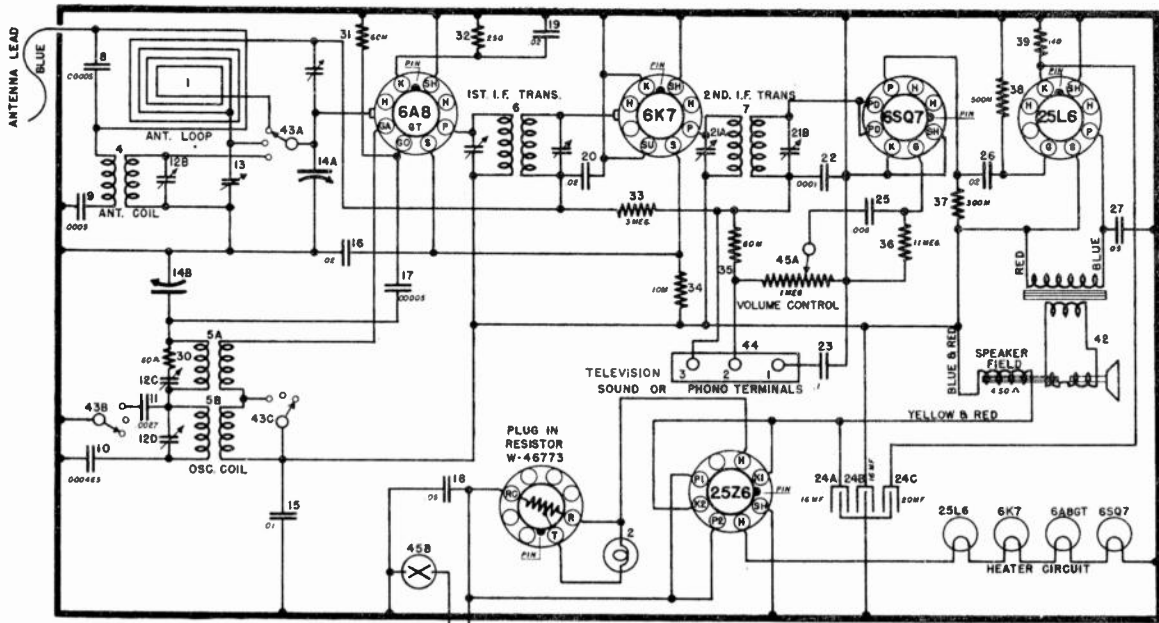


Fig. 3—Bottom View Model 689

MODEL 689



MODEL -- 689

TUBES MAY BE G OR GT TYPES EXCEPT 6AB

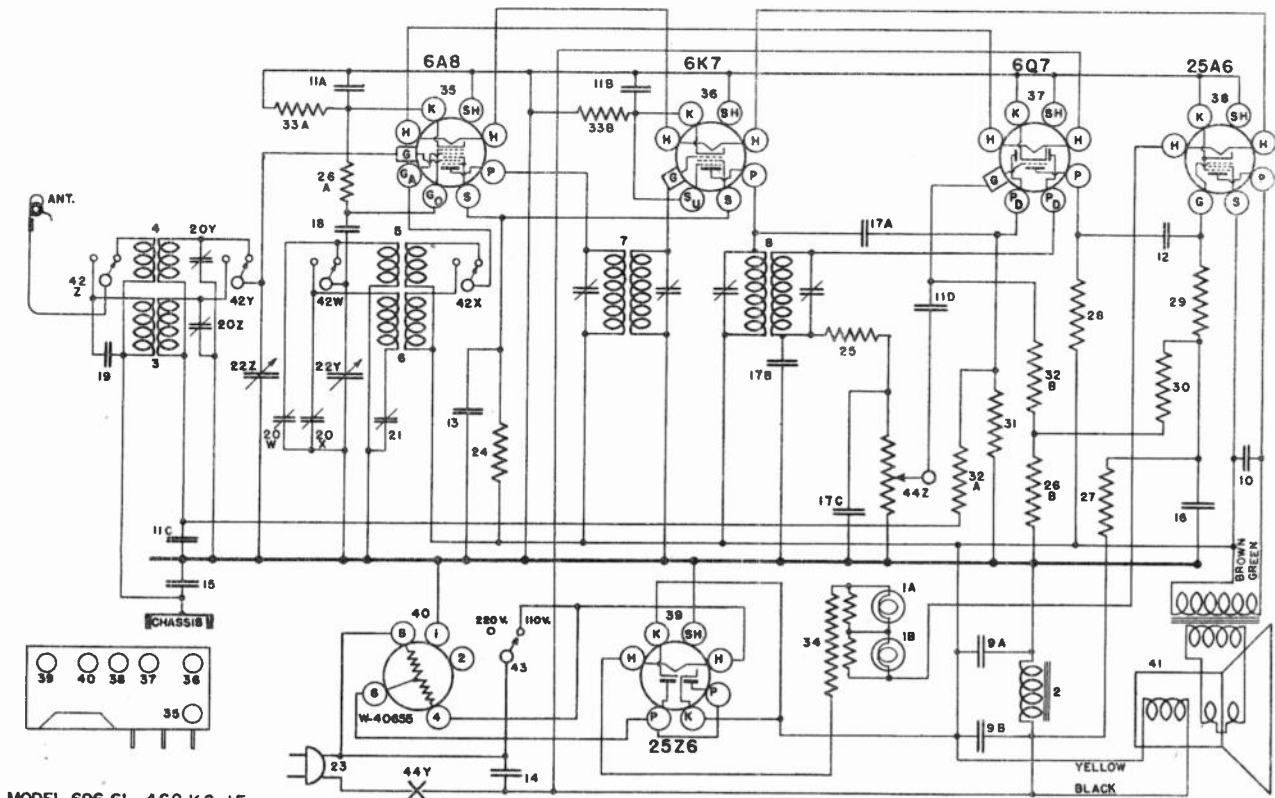
455 K.C. I.F.

A few of the earlier releases of this model used a 6Q7GT in place of the 6SQ7GT. This change was made to improve performance especially on the short wave band.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G9	Loop Antenna	44	G52	Phono Terminal Board
2	W	Loop Antenna Bracket	45A	G219-34403	Wire Assembly (Phono Terminal Board)
3	W	Dial Light Bulb	45B	46447	Volume Control, 1 Megohm
4	U	Cambric Sleeve (Light Shield)	W	46662	3/8" Flat Nut (Volume Control)
5A	G215-32000	Power Cable and Plug	W	47574	Spacer (2 Req.) (2nd I-F. Trimmer)
5B	G224-32002	Foreign Antenna Coil	G42	45683	No. 6-32 x 1/2" W. Hd. Screw (2nd I-F. Trimmer)
6	G208-32204	Broadcast Oscillator Coil	G26	45683	Push Button (Unit Assembly)
7	G220-32204	Foreign Antenna Coil	G26	45683	Riveted Key Assembly
8	G5	1st I-F. Transformer Assembly	W	50542E	Rocker Plate Assembly
9	G3	2nd I-F. Transformer (Coil only)	W	45646B	Key Clip (4 Req.)
10	G20	Condenser, 00005 Mf. Molded	W	50588B	Adjusting Clip (1 Req.)
11	G11	Condenser, 00045 Mf. Molded	W	50547	Adjusting Clip (3 Req.)
12A	W	Condenser, 0027 Mf. Molded	W	50507C	Key Return Spring (4 Req.)
12B	W	B. C. Antenna	W	45717	No. 6-32 x 1/2" W. Hd. Screw (Station Setting)
12C	W	B. C. Oscillator	W	45717	(4 Req.)
12D	W	Foreign Oscillator	W	45717	No. 8-32 x 1/2" W. Hd. Screw (Key Plate)
13	W	Spacer (2 Req.) (4 Section Trimmer)	W	50661	(2 Req.)
14A	W	No. 6-32 x 1/2" W. Hd. Screw (2 Req.)	W	45806	No. 6-30 x 1/2" Flat Hd. Screw (Rocker Plate)
14B	W	Trimmer Condenser—Pol. Ant.	W	2046	Bearing) (2 Req.)
14C	W	Trimmer Condenser—Antenna Section	G15	43564	No. 8 x 1/4" H. H. P. K. Screw (4 Req.)
14D	W	2 Sect. Var. Condenser—Oscillator Section	W	43564	No. 8 Shakeproof Washer (2 Req.)
15	MC12-46750	Dial Back Assembly	W	43564	Palley and Hub Assembly
16	W	Dial Pointer	W	43522B	Drive Shaft (2 Req.)
17	C	Dial Glass	W	43522B	Drive Shaft Bracket
18	G6	Dial Light Bracket Assembly	W	45746	Drive Shaft (2 Req.) (Drive Shaft Bracket)
19	W	4 Prong Socket (No Marking)	W	45806	Drive Cord, 30"
20	G9	Antenna Loop Assembly	W	46387	Drive Cord Spring
21	W	Condenser, .01 Mf. 400 Volts Paper	W	46390	Cord Clamp
22	W	Condenser, .02 Mf. 160 Volts Paper	G1	41582	Guide Cord, 9"
23	W	Condenser, .05 Mf. 120 Volts Paper	W	46348	Guide Cord Spring
24A	W	Condenser, .02 Mf. 160 Volts Paper	W	46838	Cabinet
24B	W	Condenser, .02 Mf. 160 Volts Paper	W	49380	Knob (2 Req.)
24C	W	Condenser, .16 Mf. 140 Volts Elect.	W	49381	Push Button (4 Req.)
25	W	Condenser, .16 Mf. 140 Volts Elect.	W	46816	No. 8 x 3/8" Rubber Bottom Screw (Chassis Mtg.)
26	W	Condenser, .05 Mf. 160 Volts Paper	W	49384	Cabinet Back
27	W	Condenser, .05 Mf. 160 Volts Paper	W	46921	Speed Nut (2 Req.)
28	W	Condenser, .05 Mf. 160 Volts Paper	W	48756	Trimrod Stud (4 Req.)
29	W	Condenser, .05 Mf. 160 Volts Paper	W	47412	Cabinet
30	W	Condenser, .05 Mf. 160 Volts Paper	W	47483	Carton
31	W	Resistor, 60,000 Ohms 1/2 Watt Carb.	W	46841A	Knob (2 Req.)
32	W	Resistor, 250,000 Ohms 1/2 Watt W. W.	W	46841A	Push Button (4 Req.)
33	W	Resistor, 3 Megohms 1/2 Watt Ins.	W	46841A	No. 8-32 x 1/2" W. H. Mach. Screw (Chassis Mtg.) (4 Req.)
34	W	Resistor, 10,000 Ohms 1/2 Watt Carb.	W	30409	Flat Washer (Chassis Mtg.) (4 Req.)
35	W	Resistor, 60,000 Ohms 1/2 Watt Carb.	W	49442	Cabinet Back
36	W	Resistor, 11 Megohms 1/2 Watt Carb.	W	20881	No. 6 x 3/4" Rd. Hd. Wood Screw (Cabinet Back)
37	W	Resistor, 300,000 Ohms 1/2 Watt Carb.	W	48741	(4 Req.)
38	W	Resistor, 500,000 Ohms 1/2 Watt Carb.	W	48742	Dial Glass Clip, Lower
39	W	Resistor, 140 Ohms 1/2 Watt Flex.	W	48743	Dial Glass Clip, Upper
40	W	Speaker, Spec. 55-WA-43	W	48743	No. 3 x 1/4" Rd. Hd. Wood Screw (Dial Glass Clip) (3 Req.)
41	W	Cone and V. C. Assembly			
42	281-BL-7-"B"	Field Coil, 450 Ohms 60 M. A.			
43	W	Output Transformer			
44	W	Cardboard Ring			
45	281-BL-7-"K"	Speaker, Spec. 31-V-2			
46	W	Cone and V. C. Assembly			
47	W	Field Coil, 450 Ohms 60 M. A.			
48	W	Output Transformer			
49	W	Cardboard Ring			
50	W	Hook and Speaker Bracket			
51	W	No. 8-32 x 1/2" W. Hd. Screw (Speaker Bracket)			
52	N	No. 8-32 Hex. Nut (Speaker Bracket)			
53	W	No. 8 Shakeproof Washer (Speaker Bracket)			
54	W	Band Change Switch			
55	W	3/8" Flat Nut (Band Change Switch)			

USED ON 9PE AND 9PA

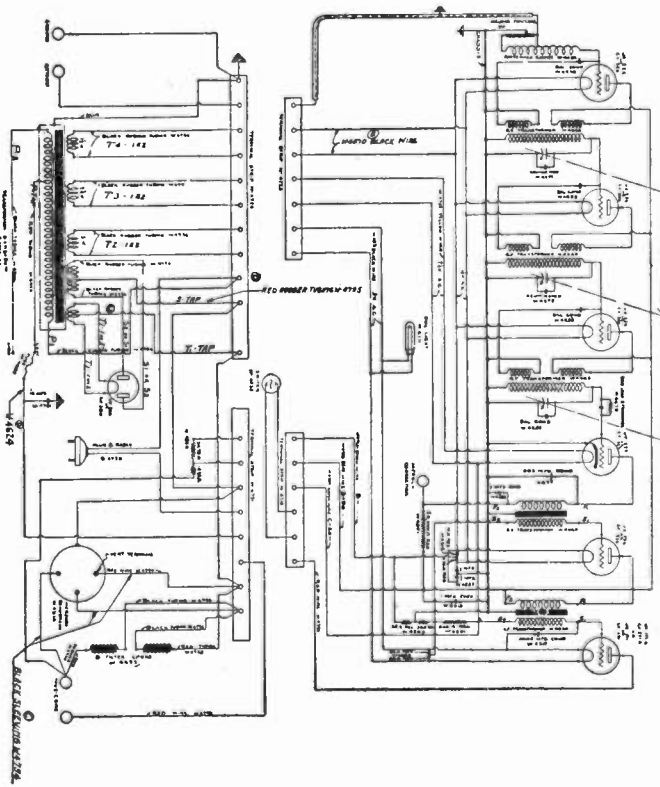


MODEL-696 6L 462 K.C. I.F.

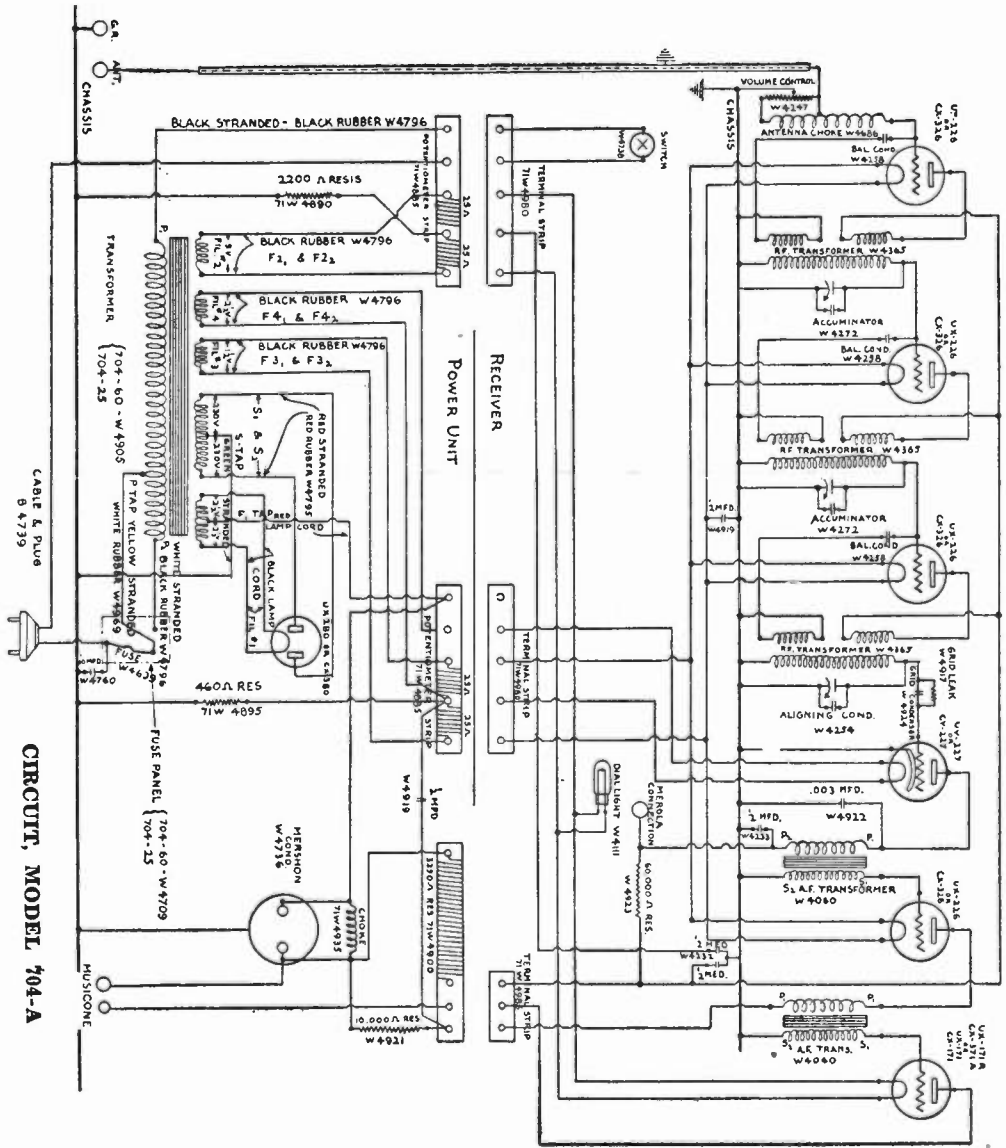
1A,B	W-4099-B	Dial Light, 6.5v.	21	37917	L.F. Osc. Trim. Cond.
2	G4-28859	Choke Hum Filter	22Z	G27-33001	R.F. Var. Tuning Cond.
3	G127-32000	L.F. Ant. Coil	22Y	G27-33001	Osc. Var. Tuning Cond.
4	G128-32000	B.C. Ant. Coil	24	36317	10,000 ohm $\frac{1}{2}$ w. Ins. Res.
5	G128-32002	B.C. Osc. Coil	25	36761	40,000 ohm $\frac{1}{2}$ w. Ins. Res.
6	G127-32002	L.F. Osc. Coil	26A,B	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.
7	G135-32004	1st I.F. Trans.	27	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.
8	G136-32004	2nd I.F. Trans.	28	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
9A,B	W-36057	40 mfd. 300 v. Elec. Cond.	29	36322	500,000 ohm $\frac{1}{2}$ w. Ins. Res.
10	W-35139	.004 mfd. 400 v. Cond.	30	38623	750,000 ohm $\frac{1}{2}$ w. Ins. Res.
11	W-28621	.02 mfd. 160 v. Cond.	31	35602	1 meg. $\frac{1}{2}$ w. Ins. Res.
12	W-35936	.05 mfd. 200 v. Cond.	32A,B	35927	2 meg. $\frac{1}{2}$ w. Ins. Res.
13	W-32780-B	.05 mfd. 400 v. Cond.	33A,B	28589	350 ohm $\frac{1}{2}$ w. Flex. Res.
14	W-31955	.25 mfd. 300 v. Cond.	34	W-40442	Regulating Res.
15	W-30321-A	1.0 mfd. 160 v. Cond.	40	G163-36400	Socket W-40655
16	G1-34002	250 mmf. Cond., Mica	41	43132	Spkr., 354 BL-9
17	G2-34002	100 mmf. Cond., Mica	42Z	42519	Ant. Pri. Band Chg. Sw.
18	G6-34002	25 mmf. Cond., Mica	42Y	42519	Ant. Sec. Band Chg. Sw.
19	G6-34002	25 mmf. Cond., Mica	42X	42519	Osc. Tick. Band Chg. Sw.
20Z	37241-B	L.F. Ant. Sec. Trim. Cond.	42W	42519	Osc. Sec. Band Chg. Sw.
20Y	37241-B	B.C. Ant. Sec. Trim. Cond.	43	W-42701	Line Chg. Sw.
20X	37241-B	L.F. Osc. Trim. Cond.	44Z, Y	42522	500,000 ohm Vol. Cont. & Sw.
20W	37241-B	B.C. Osc. Trim. Cond.			



MODELS 704, 704A



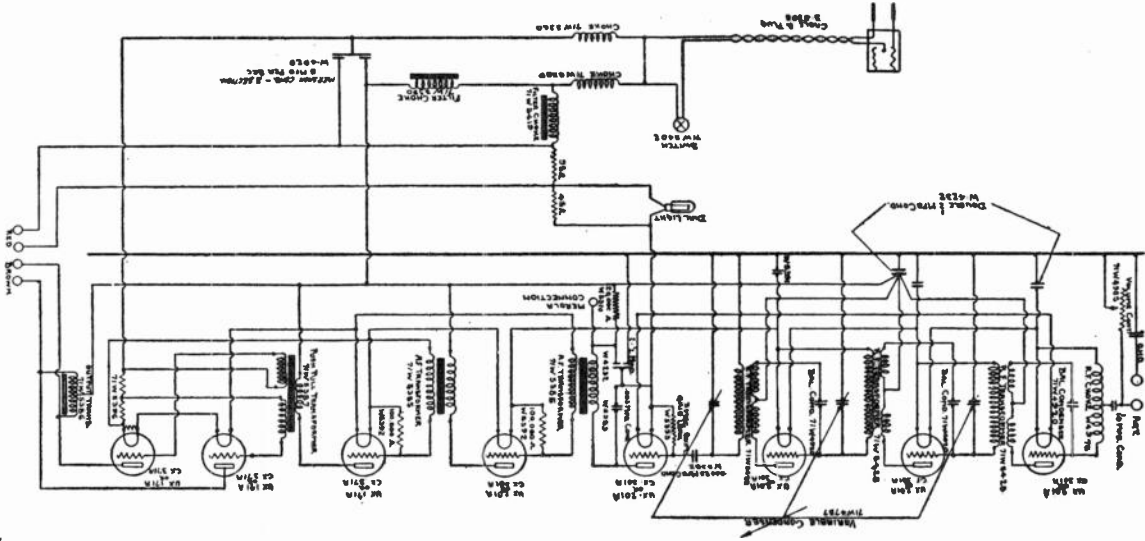
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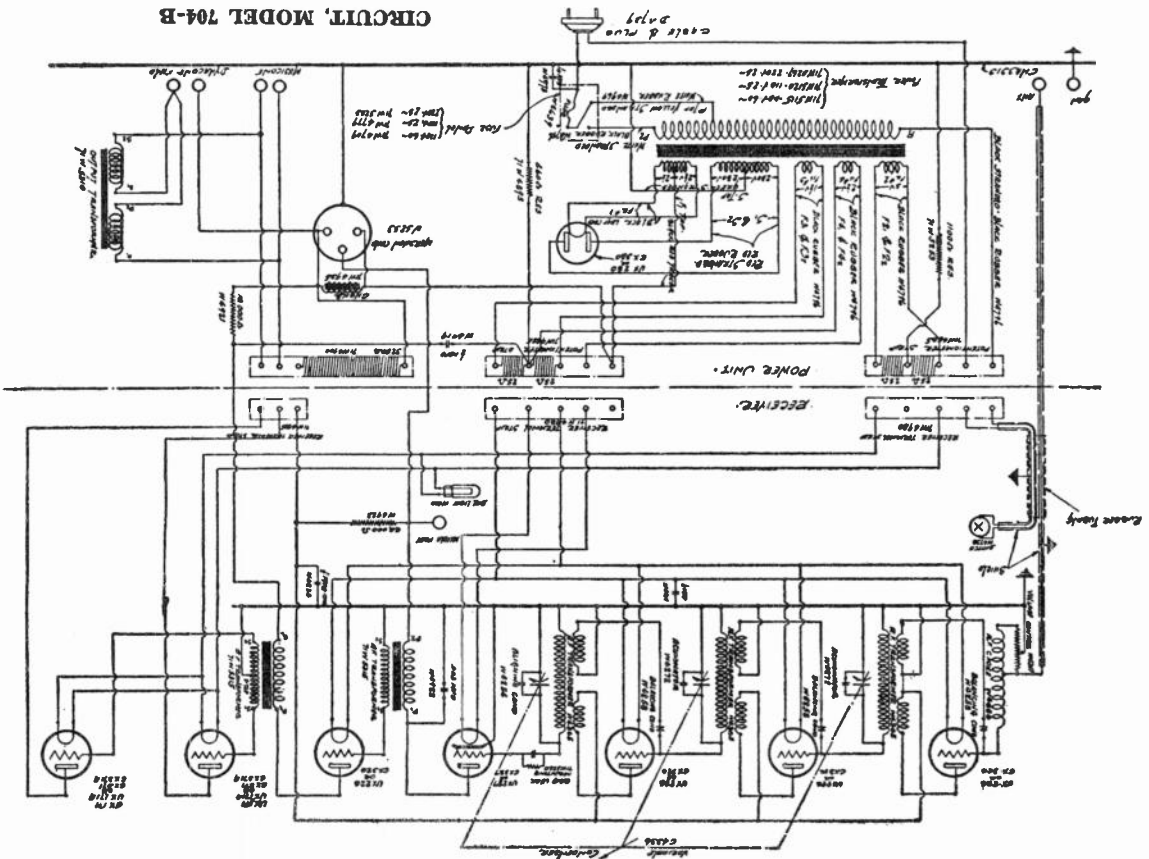
CIRCUIT, MODEL 704-A

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CIRCUIT, MODEL 705

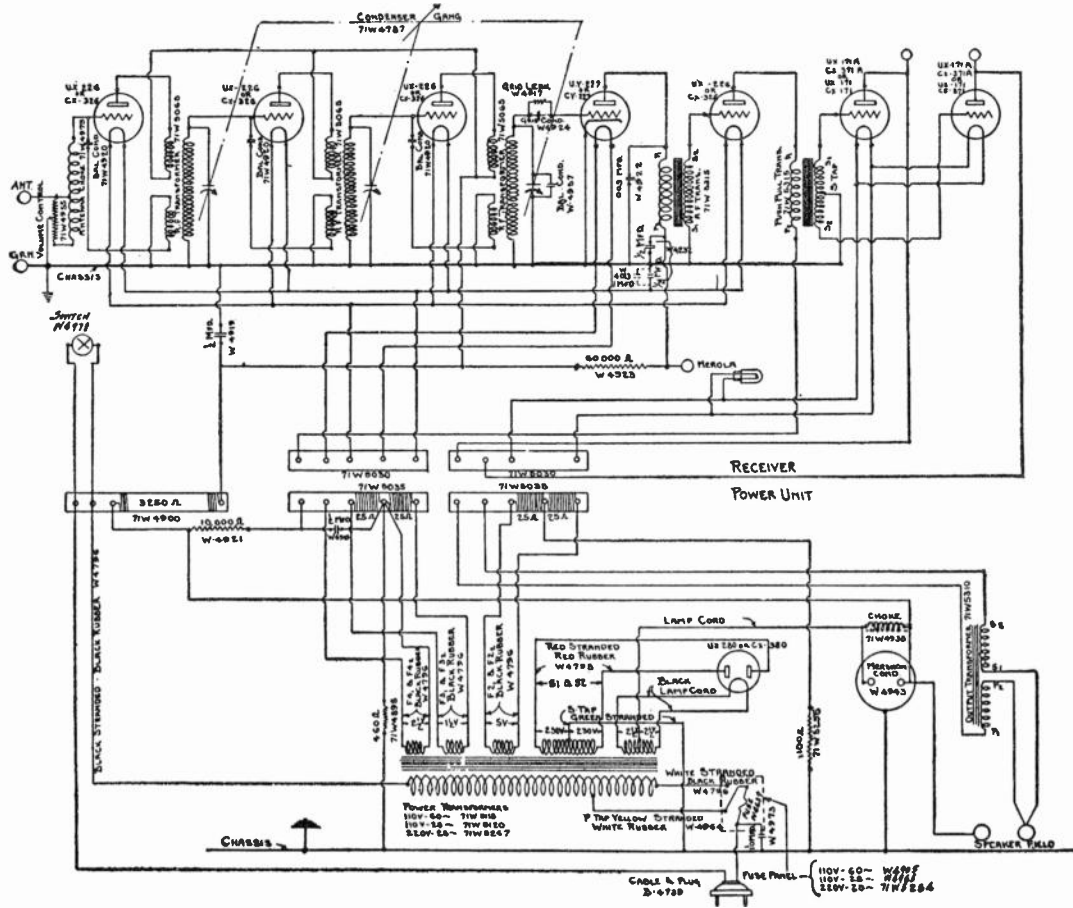


CIRCUIT, MODEL 704-B



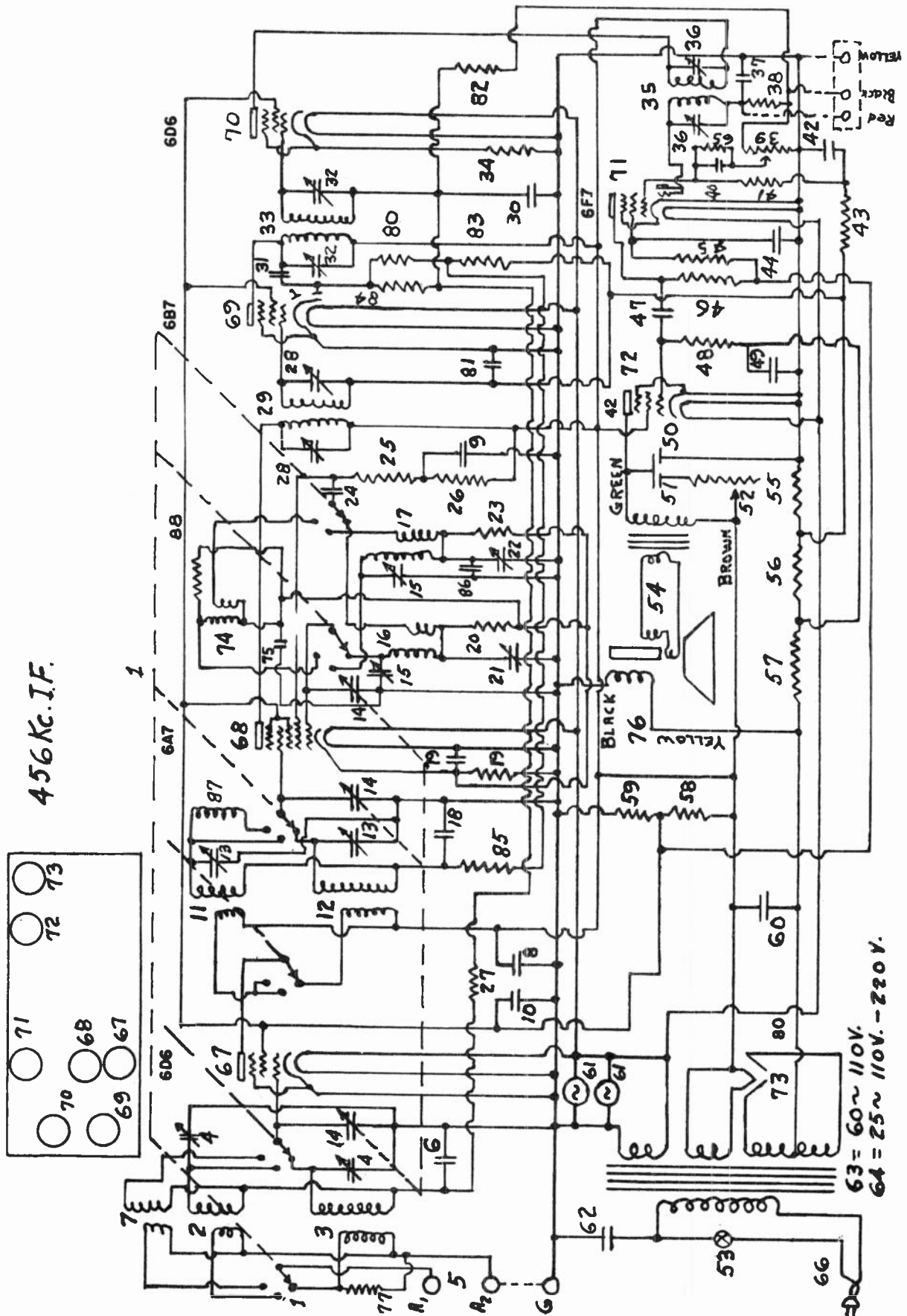
MODELS 704B, 705

# MODEL 706



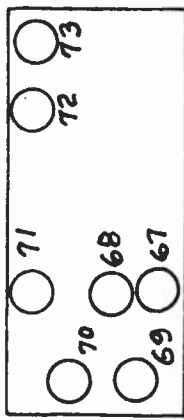
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# Wiring Diagram For Model 714



456 Kc. I.F.

1



63 = 60 ~ 110V.  
64 = 25 ~ 110V. - 220V.

# Parts List Model 714

Figures in first column correspond to figures in diagram

1	B —34443-A	{ Band Change Switch	46	21875	100,000 Ohms
		{ 6 Pole 3 Throw	47	W —27216	.05 Mfd. 200 Volt
2	G28 —32000	H. F. Ant. Coil	48	23785	500,000 Ohms
3	G3 —32000	L. F. Ant. Coil	49	W —30321	1.0 Mfd. 160 Volt
4	G1 —33008	Ant. Trimming Cond.	50	W —31052	{ .004 Mfd. 400 Volt
5	G16 —26719	Ant.-Gnd. Term.	51		{ .05 Mfd. 400 Volt
6	W —32379	.02 Mfd. 200 Volt	52	W —32063	{ Tone Control
7	G31 —32000	Pol. Ant. Coil	53		{ S. P. S. T. Switch
8		{ 8 Mfd. 450 Volt (Red)	54	411C	Speaker
9	W —29097-D	{ 8 Mfd. 450 Volt (Green)	55	33390	30,000 Ohms
10		{ 8 Mfd. 250 Volt (No Code)	56	23403	150,000 Ohms
11	G18 —32001	H. F.-R. F. Coil	57	21454	1 Meg.
12	G2 —32001	L. F.-R. F. Coil	58	W —31361	{ 7,000 Ohms
13	G9 —33009	R. F. Trimmer Cond.	59		{ 11,000 Ohms
14	G18 —33002	Variable Condenser	60	W —26194-B	12 Mfd. 475 Volt
15	G2 —33009	Osc. Trimming Cond.	61	W —4099-A	6-8 V. Dial Light
16	G2 —32002	L. F. Osc. Coil	62	W —30805	.01 Mfd. 400 Volt
17	G21 —32002	H. F. Osc. Coil	63	G1 —34432	Power Trans. 60 Cy.
18	W —32380	.05 Mfd. 200 Volt	64	G39 —25669	Power Trans. 25 Cy.
19	W —21452	1,100 Ohms			110 V.-220 V.
20	21237-A	60,000 Ohms	65	26578	5 Meg.
21		{ Series Cond. L. F.	66	B —33906-A	Cord & Plug
22	G12 —33006	{ Series Cond. H. F.	67	G75 —28807	6D6 Socket (R. F. Amp.)
23	21453	40,000 Ohms	68	G47 —28807	6A7 Socket (Osc. Mod.)
24	W —25435	.003 Mfd. 400 Volt	69	G48 —28807	6B7 Socket (I. F. & Diode)
25	21876	10,000 Ohms	70	G75 —28807	6D6 Socket (2nd I. F.)
26	21876	10,000 Ohms	71	G49 —28807	6F7 Socket (Diode & A. F.
27	21455	300,000 Ohms			Amp.)
28	G6 —33006	I. F. Tuning Cond. 1st	72	G25 —28807	42 Socket (Output)
29	G1 —32004	1st I. F. Transformer	73	G6 —28807	80 Socket (Rect.)
30	W —27216	.05 Mfd. 200 Volt	74	G24 —32002	Osc. Coil (Pol. Band)
31	W —31937	.0001 Mfd.	75	G6 —34000	Series Cond. 1350 Mmf.
32	G6 —33006	I. F. Tuning Cond. 2nd	76	W —31007-A	Speaker Cord
33	G1 —32004	2nd I. F. Transformer	77	31094	4,500 Ohms
34	W —25937	275 Ohms	78		
35		{ 3rd I. F. Transformer	79	W —28621	.02 Mfd. 200 Volt
36	G26 —32004	{ 3rd I. F. Tuning Cond.	80	W —21455	300,000 Ohms
37	W —27932	.0001 Mfd. 200 Volt	81	W —28621	.02 Mfd. 200 Volt
38	23403	150,000 Ohms	82	26578	5 Meg.
39	W —32062	Level Control 1 Meg.	83	21455	300,000 Ohms
40	W —28619	.006 Mfd. 200 Volt	84	21454	1 Meg.
41	26577	3 Meg.	85	21454	1 Meg.
42	W —24049	.1 Mfd. 200 Volt	86	G2 —34000	3104 Mmf. Cond.
43	21454	1 Meg.	87	G19 —32001	Pol. Band R. F. Coil
44	W —24049	.1 Mfd. 200 Volt	88	33390	30,000 Ohms
45	23785	500,000 Ohms			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.3	315	110	0	-3	0	—	—
6A7	Osc.-Mod.	6.3	315	110	—	-3	0	-5 to -15	185
6B7	I-F Amp. & AVC	6.3	315	110	0	-3	0	—	—
76	Detector	6.3	—	—	—	—	0	—	—
76	A-F Amplifier	6.3	35	—	—	-3	0	—	—
42	Output	6.3	300	245	0	-16	0	—	—
80	Rectifier	5.0	320	—	—	—	—	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st I-F transformer. (Fig. 2)

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output. (Fig. 2)

(g) Adjust the top and bottom trimmers of the 1st I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer or maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant"

terminal of the receiver. For the BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned (if provision is made for series alignment). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers (Fig. 2) in the order given for maximum output and then check the adjustments in the same order. NOTE: When aligning the Police and High Frequency Band care must

To align the "series" trimmer set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—

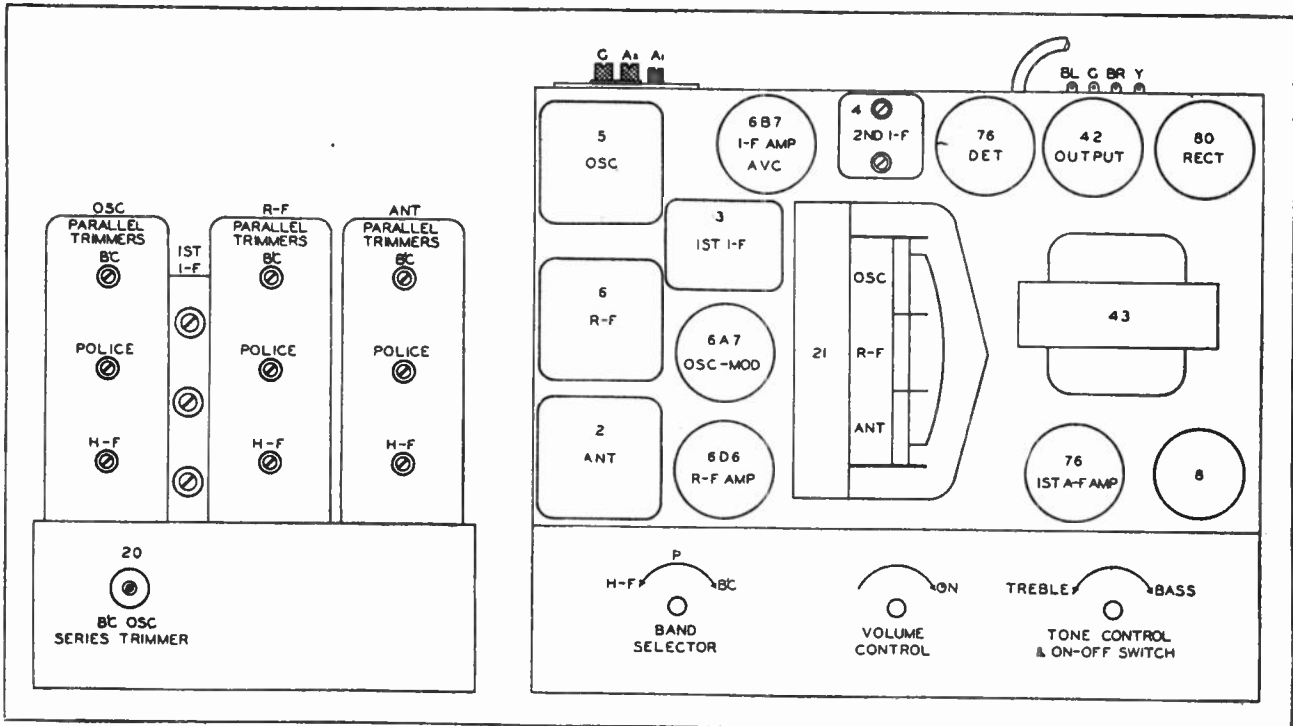
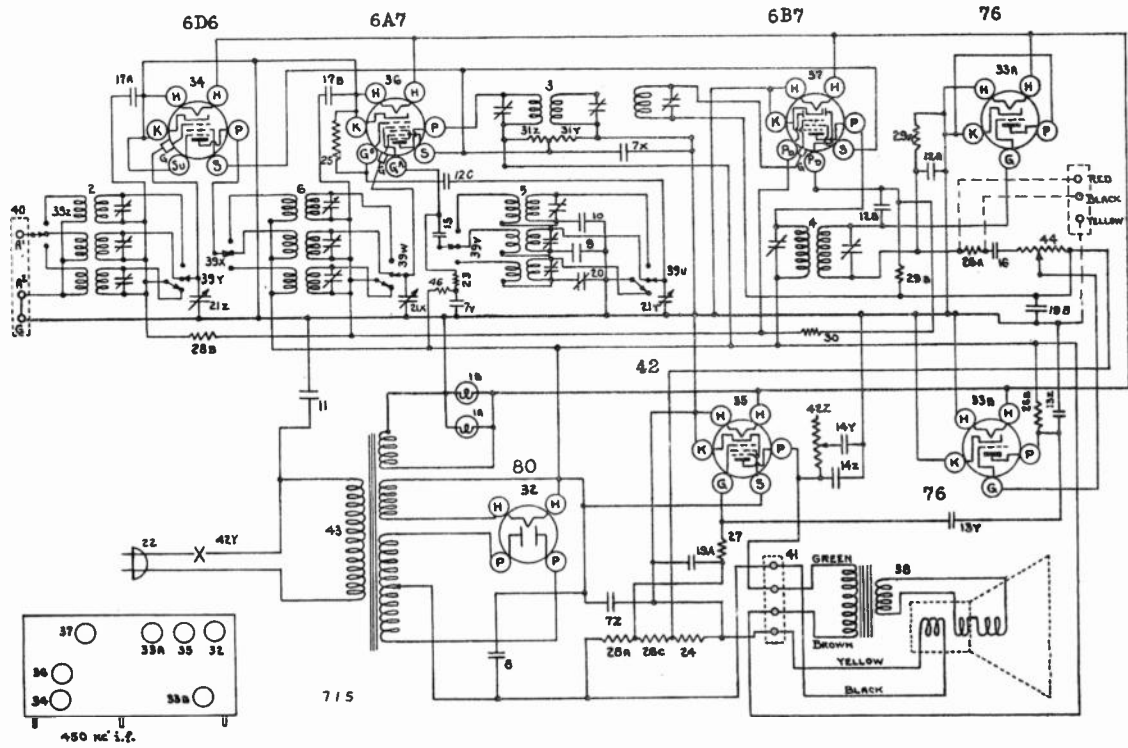


Fig. 2. Side And Top Views 715

MODEL 715



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 - 27134	Dial Light Bracket Assembly.	23	-22831	Resistor, 15,000 Ohms.
1B	G4 - 27134	Dial Light Bracket Assembly.	24	-22196	Resistor, 20,000 Ohms.
2	G50 - 32000	Ant. Coil Assembly complete.	25	-21875	Resistor, 100,000 Ohms.
	G44 - 32000	Ant. Coil Broadcast Band.	26A	-23403	Resistor, 150,000 Ohms.
	G45 - 32000	Ant. Coil Police Band.	26B	-23403	Resistor, 150,000 Ohms.
	G46 - 32000	Ant. Coil S. W. Band.	26C	-23403	Resistor, 150,000 Ohms.
	W - 36032	Trimmer Condenser.	27	-21455	Resistor, 300,000 Ohms.
	G6 - 36031	Support Base Assembly.	28A	-23785	Resistor, 500,000 Ohms.
	G4 - 36031	Coil Shield Assembly.	28B	-23785	Resistor, 500,000 Ohms.
3	G47 - 32004	1st. I. F. Trans. Assembly.	29A	-21454	Resistor, 1 Megohm.
4	G46 - 32004	2nd. I. F. Trans. Assembly.	29B	-21454	Resistor, 1 Megohm.
5	G42 - 32002	Osc. Coil Assembly complete.	30	-26577	Resistor, 3 Megohm.
	G36 - 32002	Osc. Coil B. C. Band.	31Z	-35963	Resistor, 8,500 Ohm.
	G37 - 32002	Osc. Coil Police Band.	31Y	W - 35963	Resistor, 25,000 Ohm.
	G38 - 32002	Osc. Coil S. W. Band.	32	G6 - 28807	Socket, 80.
	W - 36032	Trimmer Condenser.	33A	G80 - 28807	Socket, 76.
	G7 - 36031	Support Base Assembly.	33B	G80 - 28807	Socket, 76.
	G5 - 36031	Coil Shield Assembly.	34	G75 - 28807	Socket, 6D6.
6	G29 - 32001	R. F. Coil Assembly complete.		W - 35774	Tube Shield Base.
	G23 - 32001	R. F. Coil B. C. Band.		W - 35772	Tube Shield Half.
	G24 - 32001	R. F. Coil Police Band.		W - 35773	Tube Shield Cap.
	G25 - 32001	R. F. Coil S. W. Band.	35	G25 - 28807	Socket, 42.
	W - 36032	Trimmer Condenser.	36	G47 - 28807	Socket, 6A7.
	G6 - 36031	Support Base Assembly.		W - 35774	Tube Shield Base.
	G4 - 36031	Coil Shield Assembly.		W - 35772	Tube Shield Half.
7Z		Condenser, 8 Mfd., 450 Volt.		W - 35773	Tube Shield Cap.
7Y	W - 36056	Condenser, 4 Mfd., 350 Volt.	37	G48 - 28807	Socket, 6B7.
7X		Condenser, 4 Mfd., 250 Volt.		W - 35774	Tube Shield Base.
8	W - 36055	Condenser, 35 Mfd., 450 Volt.		W - 35772	Tube Shield Half.
9	G7 - 34000	Condenser, 0.00145 Mfd.		W - 35773	Tube Shield Cap.
10	G12 - 34000	Condenser, 0.004725 Mfd.	38	318-BL-18	Speaker.
11	W - 30805	Condenser, 0.01 Mfd., 400 Volt.		518-CL-22	Speaker.
12A	G2 - 34002	Condenser, 100 Mmf.	39	UtoZ	Band Change Switch
12B	G2 - 34002	Condenser, 100 Mmf.			
12C	G2 - 34002	Condenser, 100 Mmf.	40	G27 - 26719	Ant.-Grd. Terminal.
13Z	W - 25537A	Condenser, 0.001 Mfd., 400 Volt.	41	G5 - 31128	Speaker Terminal.
14Z	W - 31052	Condenser, 0.03 Mfd., 400 Volt.		W - 34827	Terminal Board Insulator.
14Y		Condenser, 0.004 Mfd., 400 Volt.		W - 34628	Terminal Board Cover.
15	W - 32378	Condenser, 0.05 Mfd., 400 Volt.		-36062	Tone Control.
16	W - 23191A	Condenser, 0.01 Mfd., 400 Volt.		-36062	On-Off Switch.
17A	W - 32379	Condenser, 0.02 Mfd., 200 Volt.	G6	-30745	Power Transformer, 60 Cy., 110 V.
17B	W - 32379	Condenser, 0.02 Mfd., 200 Volt.	G7	-30745	Power Transformer, 25 Cy., 110 V.
18	See 19B		G8	-30745	Power Transformer, 25 Cy., 220 V.
19A	W - 20321	Condenser, 1.0 Mfd., 160 Volt.		-36060	Volume Control.
19B	W - 30321	Condenser, 1.0 Mfd., 160 Volt.	44	See 12C	
20	G10 - 33005	Trimmer Condenser, 5 plate.	45	-21876	Resistor, 10,000 Ohms.
21Z			W	-34678B	Knob, Band Change.
21X	G33 - 33002	Var. Tuning Condenser, 3 Gang.	W	-31585B	Knob, Controls.
			B	-33528C	Escutcheon.
			W	-33984	Escutcheon Gasket.
			W	-36312	Band Change Switch Plate.
			W	-36309	Band Change Indicator, Celluloid.
			W	-36313	Tone Control Plate.
				-35922	Grille Cloth, 5N Cabinet.
				-35863	Grille Cloth, 5D Cabinet.
22	B	Cord and Plug.			

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	P2	S	G	K	Go
6C5	Oscillator	6.3	165	—	—	0	0	—
6A8	Modulator	6.3	270	—	120	0	2.85	-5 to -30
6K7	I. F. Amp.	6.3	270	—	120	0	2.85	—
6H6	Diode Detector	6.3	0	—	—	—	—	—
6F5	A. F. Amp.	6.3	170	—	—	0	1.75	—
6N6	Output	6.3	270	255	—	0	0	—
5Z4MG	Rectifier	5.0	—	—	—	—	330	—

Power Consumption Approximately 80 Watts at 117.5 Volts.  
 Power Output Approximately 6 Watts.  
 Voltage Drop Across Speaker Field Approximately 60 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the two plates of the 6N6 Output Tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

Aligning R-F Amplifier.

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "Ant" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

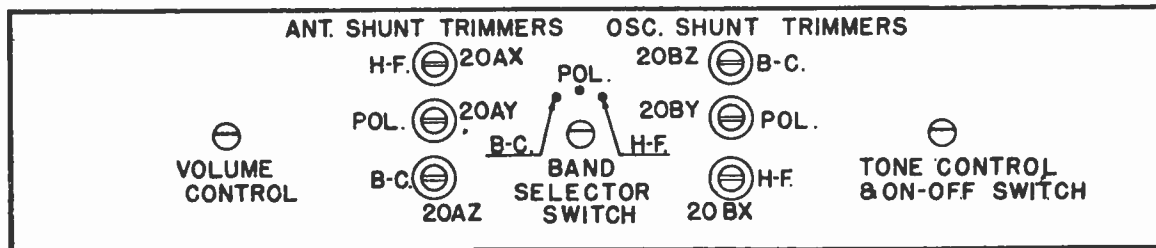
Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers. Do NOT READJUST the "OSC" TRIMMER.

(b) To align the series trimmer (Item 10, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	.....
18000 Kilocycles	.....



Front View 716

The Crosley Corporation was one of the very earliest radio parts manufacturers. As early as 1920, parts were distributed on a nation-wide basis. We are still anxious to serve you with radio service parts through the Crosley distributor in your area.



MODEL 716

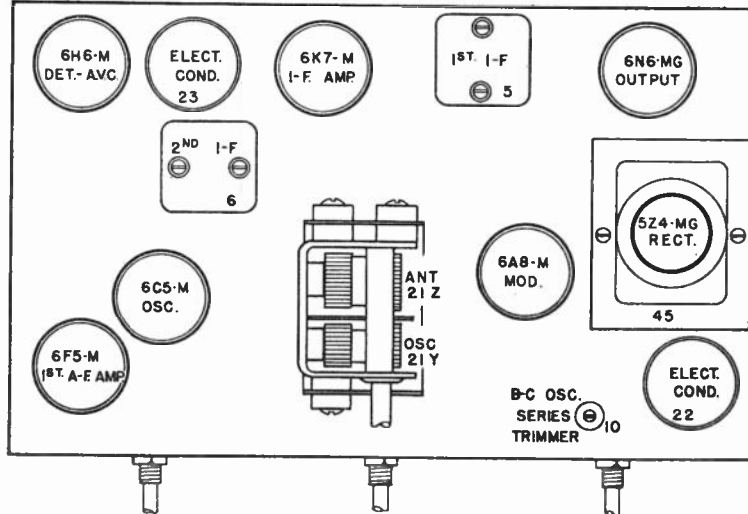
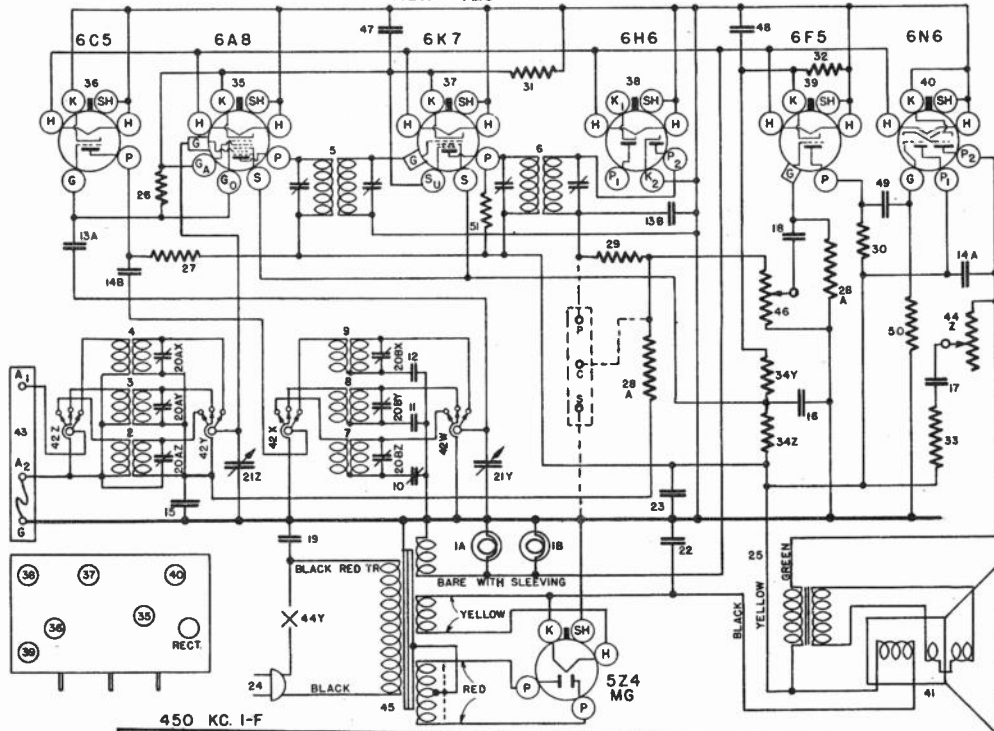


Fig. 2. Top View 716

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Item No.	Part No.	Name
1-AB	W -37922	Bulb 6-8V., Dial Light	28A	-36688	Resistor, 3 Megohm 1/4 W. (Car.)
2	G3 -37965	Socket Assy., Dial Light	28B	-36688	Resistor, 3 Megohm 1/4 W. (Car.)
3	G120 -32000	Coil, Ant. (540-1800 Kc.)	29	-21455	Resistor, 300,000 Ohm 1/4 W. (Car.)
4	G119 -32000	Coil, Ant. (1800-6000 Kc.)	30	-35930	Resistor, 200,000 Ohm 1/4 W. (Car.)
5	G121 -32000	Coil, Ant. (5800-18000 Kc.)	31	W -21964	Resistor, 165 Ohm 1/4 W. (Flex.)
6	G122 -32004	Coil Assy., 1st I-F (450Kc.)	32	W -35457	Resistor, 210 Ohm 1/4 W. (Flex.)
7	G123 -32004	Coil Assy., 2nd I-F (450Kc.)	33	W -27503	Resistor, 1400 Ohm 1/4 W. (Flex.)
8	G112 -32002	Coil, Osc. (540-1800 Kc.)	34Z	W -32301	Resistor, 10,000 Ohm (Candohm)
9	G111 -32002	Coil, Osc. (1800-6000 Kc.)	34Y	G156 -36400	Socket Type 6A8
10	G123 -32002	Coil, Osc. (5800-18000 Kc.)	35	G152 -36400	Socket Type 6C5
11	-40769	Cond., 400-500 Mmf.	36	G151 -36400	Socket Type 6K7
12	G7 -34007	Cond., 1750 Mmf.	37	G155 -36400	Socket Type 6H6
13A	G 8 -34007	Cond., 4350 Mmf.	38	G158 -36400	Socket Type 6F5
13B	G 2 -34002	Cond., .0001Mf. (Molded)	39	G165 -36400	Socket Type 6N6
14A	G 2 -34002	Cond., .0001 Mf. (Molded)	40	332-BJ3	Speaker "M" Spec. 1-D-390
14B	W -35139	Cond., .004Mf.400V. (Tub.)	41	-41638	Cone Assy. for "M" 332BJ3
15	W -35139	Cond., .004Mf.400V. (Tub.)		-40775	Field Coil for "M" 332BJ3
16	W -35936	Cond., .05Mf.200V. (Tub.)		-41639	Output Trans. for "M" 332BJ3
17	W -24049-B	Cond., .1Mf.200V. (Tub.)	42	40770-A	Switch, Band Selector
18	W -37873	Cond., .1Mf. 400V. (Tub.)	43	G27 -26719	Terminal Board, Antenna & Grd.
19	W -30488	Cond., .02Mf.400 V. (Tub.)	44Z	-37908	Tone Control, 100,000 Ohm
20	W -30805	Cond., .01 Mf.400V. (Tub.)	44Y	-41978	Switch, Line
21	W -35951	Cond.-3 Section Trimmer	45	-42148	Transformer, 110V. 60 Cy.
	G21 -33001	Cond.-2 Section Tuning		-42150	Transformer, 110V. 25 Cy.
	B -42142-A	Dial-Calibrated Glass		-42150	Transformer, 220V. 25 Cy.
	B -42346	Drive Unit	46	-37967	Volume Control 1Megohm
	B -42338	Maak-Metal	47	W -29910-A	Cond., .25Mf.200V. (Tub.)
	W -41145	Pointer-Dial	48	W -28621	Cond., .02Mf.200V. (Tub.)
	W -40486	Screw, Pointer Mtg.	49	W -35758	Cond., .008, 400V. (Tub.)
	MG27 -4151	Dial Drive Complete	50	W -23785	Resistor, 500,000 Ohm 1/4 W. (Car.)
	W -41582	Cable, Drive		-42345	Escutcheon
22	W -36055	Cond., .35Mf.400V. (Elect.)		D -28	Screw Escutcheon
23	W -36057	Cond., .40Mf.300V. (Elect.)		W -37339	Knob (3 Req.)
24	G4 -33906-A	Cord and Plug, Power		W -40192-B	Knob (1 Req.)
25	B -35696	Speaker Cable		H	Cabinet, Model 744
26	W -40757	Resistor, 50,000 Ohm 1/4 W. (Car.)		C	Cabinet, Model 745
27	W -37967	Resistor, 15,000 Ohm 1/4 W. (WireWound)			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	K
6J8G	Oscillator-Modulator	6.3	172	88	-3	120	0
6U7G	I-F Amplifier	6.3	172	88	-3	0	0
6P5G	Detector A.V.C. Diode	6.3	0	0	0	0	-3
6F5G	1st A-F Amplifier	6.3	100	0	-2	0	-3
6V6G	Output	6.3	160	172	-10	0	0
5Y3G	Rectifier	3.9	A.C.				217
6U5	Tuning Indicator	6.3	170				

1. Tuning I-F Amplifier To 455 Kilocycles

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6J8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control to the right (ON).
- (c) Turn the band selector switch to the left (American Broadcast Band).
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output. (Fig. 2).
- (f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output of the modulated signal generator should be fed through a dummy antenna and connected to the "ANT" terminal of the receiver.

For the "Foreign" band use a 250 ohm carbon resistor for dummy and for the "American" band use a .0002 Mf. condenser.

Align the "Foreign" band first.

- (a) Set Band selector to "Foreign" band, right.
- (b) Set signal generator to 18.3 Megacycles.
- (c) Open gang all the way. Minimum capacity.
- (d) Tune-in with H-F Osc. shunt trimmer 18.3 signal. This signal will be heard at two settings of this trimmer always choose the setting furthest open.
- (e) Set signal generator to 18.0 Megacycles.
- (f) Tune-in 18.0 Mc. signal with station selector, then align the H-F ANT. trimmer condenser for maximum output. DO NOT ADJUST OSC. TRIMMER AT THIS FREQUENCY.
- (g) Repeat operations (d), (e) and (f) until no further improvement can be obtained.
- (h) Set the band selector to the American Broadcast band.
- (i) Set the signal generator to 1725 Kilocycles.
- (j) Open the gang all the way. Minimum capacity.
- (k) Adjust B-C OSC. trimmer for maximum output.
- (l) Set signal generator to 1400 Kc.
- (m) Tune receiver for maximum general signal (approx. 140 on the dial).
- (n) Adjust B-C ANT. trimmer for maximum output. DO NOT RE-ADJUST OSC. TRIMMER AT 1400 Kc.

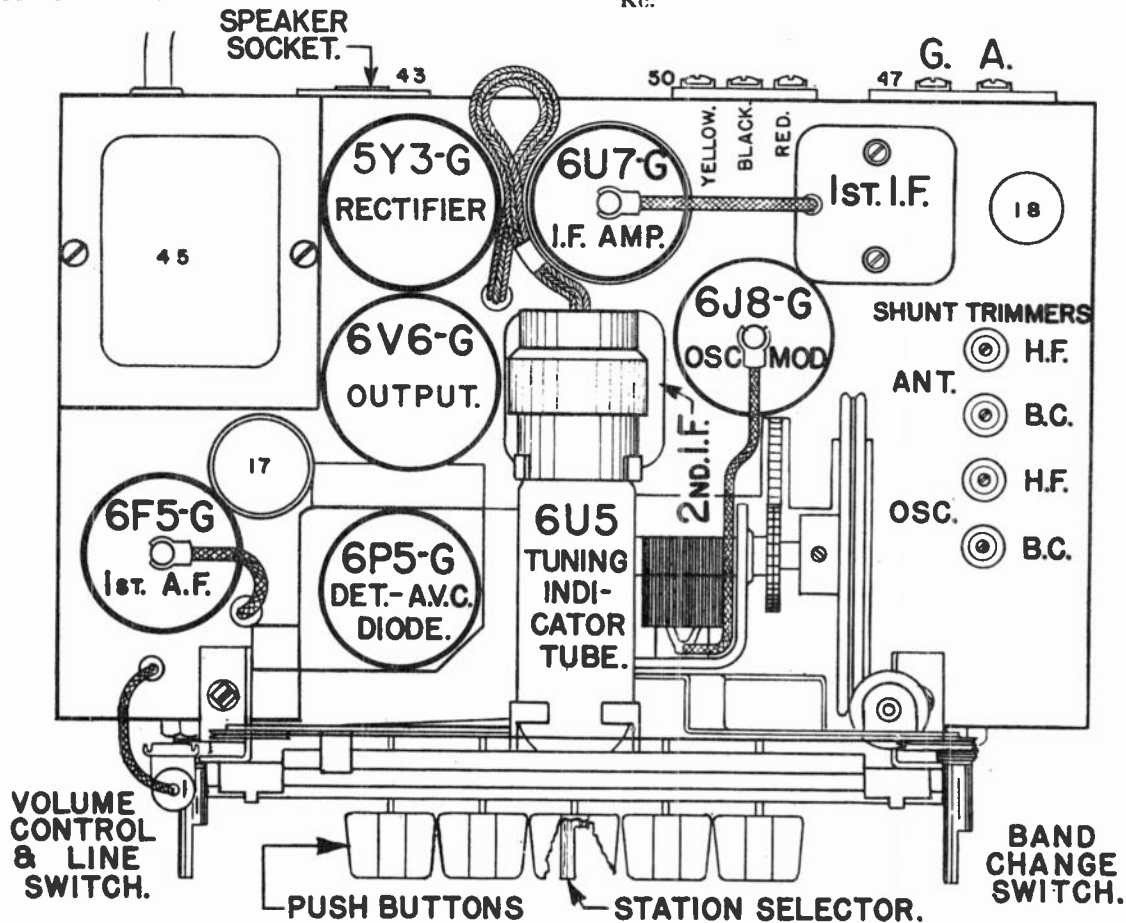
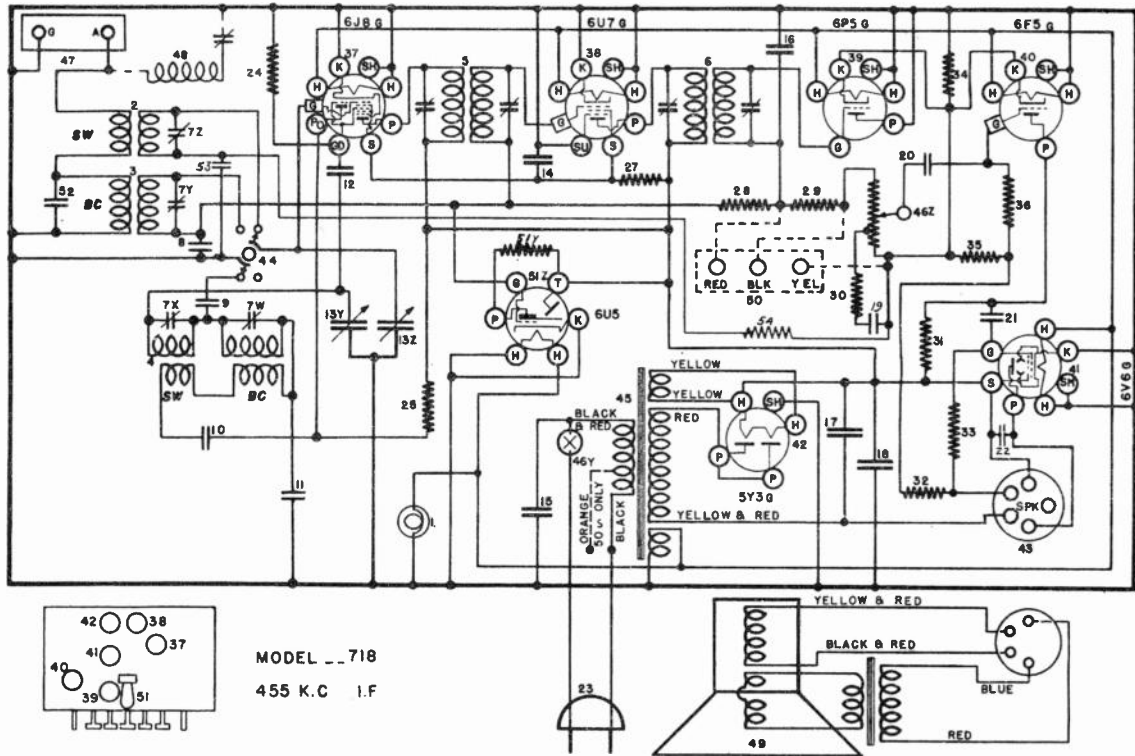


FIG. 2 Top View Model 718

MODEL 718



MODEL -- 718  
455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light, 6-8 V.	46	-45973	Line Sw. and Vol. Cont. (1 Meg. Tap 1/4 Meg.)
2	G13 -45398	D. L. Socket Assy.	47	G1 -26719	A-G Terminal Strip
3	G164 -32000	Ant. Coil-5.7-18.3 Mc.	48	G193 -32004	455 Kc. Wave Trap (Special Item)
4	G143 -32000	Ant. Coil-540-1725 Kc.	49	280BP12 "I"	Speaker, Spec. No. 5B136
	G187 -32002	Osc. Coils-5.7-18.3 Mc. and 540-1725 Kc.		-46123	Output Transformer
5	G190 -32001	1st I-F. Assy., 455 Kc.		480BP15 "B"	Speaker, Spec. No. 801Q3
6	G189 -32004	2nd I-F. Assy., 455 Kc.		-46680	Output Transformer
7	W -45920	4 Section Shunt Trimmer Assy.		280BP12 "II"	Speaker, Spec. No. S-5330M4
8	W -36511	Condenser, .02 Mf. 160 V.		-46902	Output Transformer
9	G11 -34005	Condenser, .00270 Mf. Molded	50	G41 -26719	Phono Terminals (Special Item)
10	G3 -34002	Condenser, .0005 Mf. Molded	51	W -44121	Eye Socket and Resistor Assy.
11	G18 -34002	Condenser, .0004 Mf. Molded		W -45919	Bracket-Eye Mounting
12	G5 -34002	Condenser, .00005 Mf. Molded	52	G5 -34002	Condenser, .00005 Mf. Molded
13	G56 -33001	2 Section Gang Condenser	53	W -36541	Condenser, .02 Mf. 160 V.
	D -45891	Dial Glass	54	-36688	Resistor, 3 Megohm 1/4 W.
	D -46358	Dial Glass (Export Only)	55	W -30488	NONE
	C -45925B	Dial Support Bracket	56	-38977	Condenser, .02 Mf. 400 V.
	W -45975A	Cushion-Dial Glass	57	W -38977	Resistor, 220 Ohm 1/4 W.
	W -46025A	L. H. Mtg. Clips-Dial Glass		G5 -45683	Push Button Unit
	W -46021	R. H. Mtg. Clips-Dial Glass	G26	-45683	Key and Toggle Assy.
	W -45890A	Pointer	W	-50542C	Lock Clamp
	W -46035	Pointer Guide	W	-45717	Screw-Lock Clamp
	G25 -45683	Idler Pulley Brkt. Assy.	G22	-45683	Rocker Plate and Gear Sector Assy.
	G12 -43574	Pulley and Hub Assy. (Pointer Drive)	W	-50561	Bearing Screws-Rocker Plate
	W -45877A	Drive Shaft (Manual)	W	-50907C	Spring-Key Return
	W -45878	Drive Shaft Bracket	W	-45946B	Clip-Key Adjustment (Hooked)
	G3 -41582	Drive Cord (40-Inch)	W	-50588B	Clip-Key Adjustment (Hooked Shaped)
	W -46087	Tension Spring (Drive Cord)	W	-45766C	Felt-Light Screen
	W -46290	Cord Clamp	W	-50841	Station Call List
14	W -28621	Condenser, .02 Mf. 200 V.	W	-50551A	Call Letter Cover
15	W -30805	Condenser, .01 Mf. 400 V.		-45971	Push Button (8C-8M-8P Cab.)
16	G2 -34002	Condenser, .0001 Mf. Molded		-46417	Push Button (8H-8HF Cab.)
17	W -44012	Condenser, 16 Mf. 250 V.		-46837	Push Button (8MA Cab.)
17	W -46822	Condenser, 30 Mf. 250 V. on 25 Cycle Only		-45972	Knob (3 Req.) (8C-8M-8P Cab.)
18	W -45968	Condenser, 16 Mf. 250 V.		-46408	Knob (3 Req.) (8H-8HF-8M-8MA-8P Cab.)
19	W -35758	Condenser, .015 Mf. 400 V.		-45943B	Escutcheon (8C-8H-8M-8P Cab.)
20	W -34713	Condenser, .006 Mf. 160 V.		-46451B	Escutcheon (8H-8HF-8MA Cab.)
21	W -28621	Condenser, .02 Mf. 200 V.	D30		Screws-Escutcheon Mounting
22	W -30251	Condenser, .008 Mf. 400 V.	8C		Cabinet-Table-Sloping Front
23	W -45789A	Power Cord and Plug	8H		Cabinet-Table-Horizontal-Louvréd End
24	W -36761	Resistor, 40,000 Ohm 1/4 W.	8HF		Cabinet-Table-Horizontal-Grille Cloth
25	W -24814	Resistor, 7,000 Ohm 1/4 W.	8M		Cabinet-Console-Sloping Front
26	NONE	NONE	8MA		Cabinet-Console-Low Boy Type-Sloping Panel
27	-22196	Resistor, 20,000 Ohm 1/4 W.	8P		Cabinet-V Front-Sloping Panel Re-cessed
28	-26577	Resistor, 3 Megohm 1/4 W.		-21427	Cabinet Feet
29	-35600	Resistor, 100,000 Ohm 1/4 W.	480BP15 "Z"		Speaker Used in 8P Cab. Only
30	-24590	Resistor, 25,000 Ohm 1/4 W.		-46764	Output Transformer
31	-21455	Resistor, 300,000 Ohm 1/4 W.	C	-46347	Speaker Expand. Ring, 8P Only
32	-38915	Resistor, 100 Ohm 1/4 W.	B	-46252	Back-8M Cabinet
33	-23785	Resistor, 500,000 Ohm 1/4 W.	B	-46351	Back-8P Cabinet
34	-50643	Resistor, 60 Ohm 1/4 W.	W	-46476	Back-8H Cabinet
35	-45981	Resistor, 32 Ohm 1/4 W.	B	-46825	Back-8MA Cabinet
36	-33490	Resistor, 10 Megohm 1/4 W.	W	-46464	Thumb Screw-Back Mtg. 8M-8P-8MA
37 to 42	G178 -36400	Socket, 8 Prong Octal.		-20881	Screws-8H Back Mtg.
	W -40911	Tube Shield		-45937	Instruction Booklet
43	G103 -28807	Socket, 5 Prong, Splkr.			
44	W -45881	Band Change Switch			
45	W -45923	Power Trans., 60 Cycle 110 V.			
	W -45959	Power Trans., 50 Cycle 110 V.			
	W -45960	Power Trans., 50 Cycle 220 V.			
	W -45961	Power Trans., 25 Cycle 110 V.			
	W -45962	Power Trans., 25 Cycle 220 V.			
	W -45963B	Power Trans., 40-100 Cycle 95-267 V.			

**SPECIFICATIONS**

This model Crosley is a seven tube superheterodyne receiver designed for operation on 110 volt—50 or 60 cycle power circuits. It may be adapted for 25 cycle operation by the addition of another filter condenser as indicated in wiring diagram.

**CIRCUIT DESCRIPTION**

There are three versions of this model in the field namely: one version with an improved mechanical push button tuning system; one version with mechanical push button tuning and loop antenna, and one version has the Magnetune electric push button tuning system.

The circuit is a conventional super with no regeneration. Item 23, a 60,000 ohm resistor in series with the volume control form the A.V.C. load. Item 22, a 3 megohm resistor acts as a filter for the A.V.C. voltage applied to the 6A8GT and the 6SK7. Bias for the 25L6GT is obtained from the voltage drop

across item 28, a 140 ohm resistor. The two 25Z6GT rectifiers are in parallel and connected for voltage doubling.

The B voltage is filtered with the 900 ohm resistor, item 24, the speaker field (450 ohms) item 15, a twin 30 mf. electrolytic, and item 14, a single 30 mf. electrolytic.

The filaments of the tubes are wired in series. A .05 mfd. condenser, item 11, is connected across the power supply leads to reduce electrical interference from that source.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 ohm per volt, 250 volt volt-meter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range volt-meter. When measured on a 117.5 volt A.C. line voltage limits may vary plus or minus 10% of the values given.

**TUBE SOCKET VOLTAGE READING**

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	130	70	-17	130	H	—
6SK7	I-F Amplifier	—	H	—	—	—	70	H	130
6P5	Det. AVC Diode	—	H	—	J.B.	—	J.B.	H	—
6SF5	1st Audio	—	—	—	—	68	—	H	H
25L6	Output	—	H	121	128	—	J.B.	H	6
2-25Z6	Rectifier	—	H	A.C.	232	—	—	H	130

Maximum power output 2.5 watts.

Drop across speaker field 40 volts.

Power consumption @ 117.5 volt line = 65 watts. Those with "Magnetune" coil 40 watts additional.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning The I-F Amplifier to 455 Kilocycles**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna lead on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, item 6, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 5, for

maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning the R-F Amplifier**

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

The special police band has no provisions for alignment.

**WAVE TRAP**

Some chassis of this model may be equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the top side of the chassis and consists of a coil and a condenser as illustrated by dotted lines in the Wiring Diagram, Fig. 1A.

MODEL 719

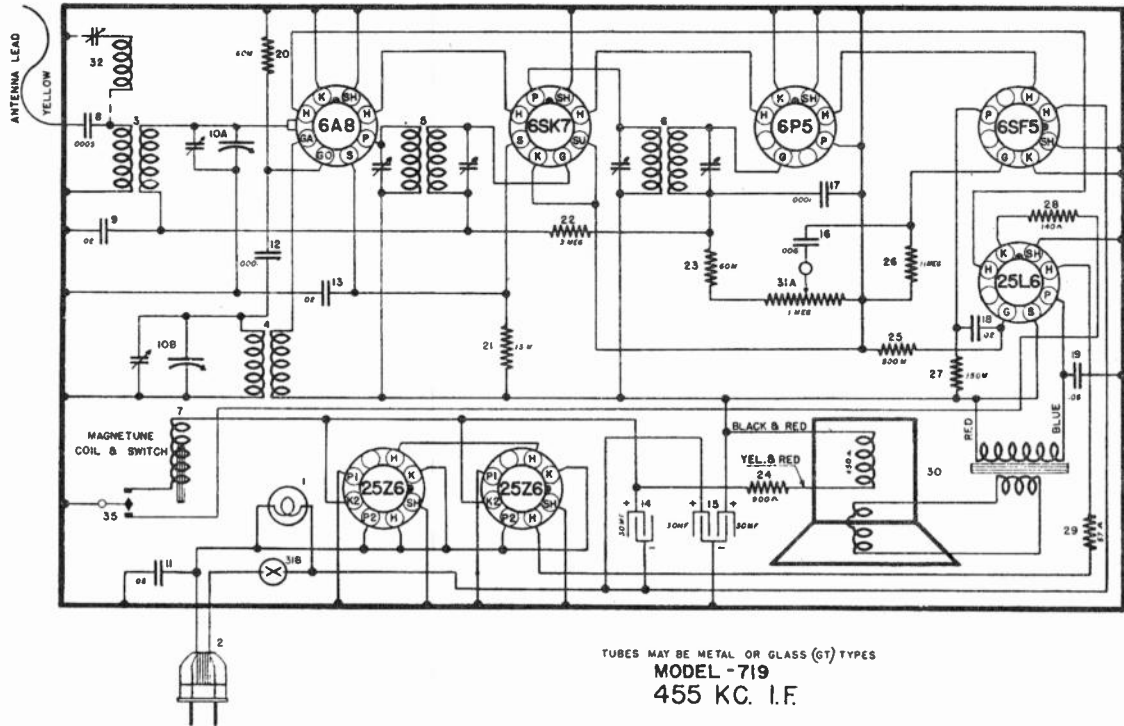


FIG. 1-A—WIRING DIAGRAM—MODEL 719

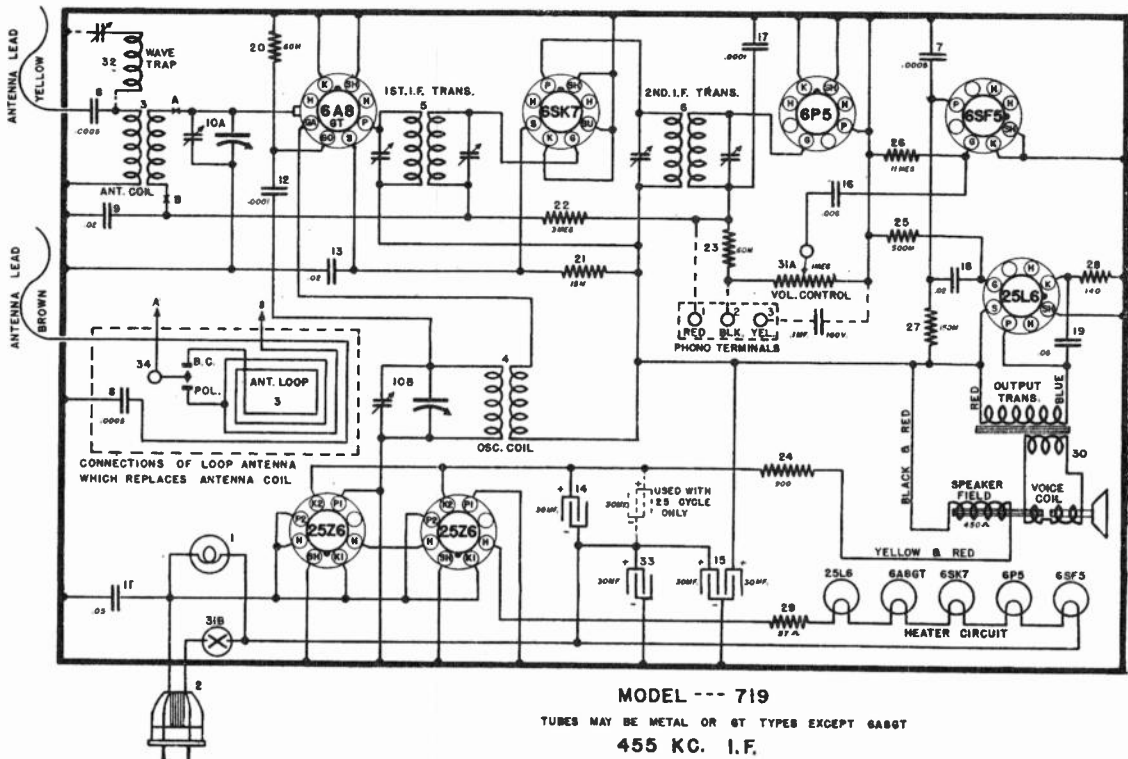


FIG. 1-B—WIRING DIAGRAM—MODEL 719  
 382

MODEL 719

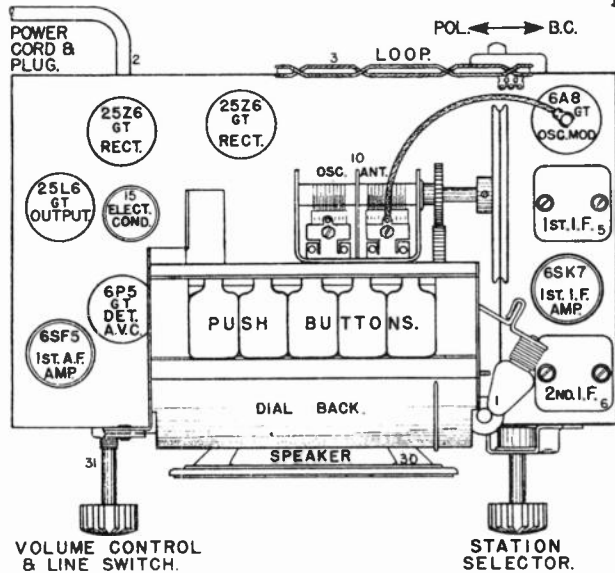


Fig. 2—Top View Model 719

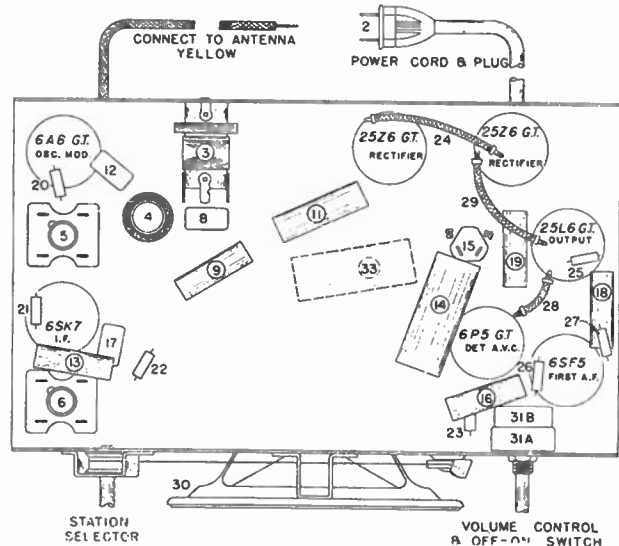


Fig. 3—Bottom View Model 719

PARTS LIST—MODEL 719

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-47977	Dial Light Bulb, 110 Volt	G31	-47880	Rocker Plate Assembly
	W-47946	Dial Light Bracket Assembly	W	-45646B	Adjusting Clip (1 Req.)
2	B-45769A	Power Cable and Plug	W	-50588B	Adjusting Clip (4 Req.)
3	G189-32000	Antenna Coil	W	-47877A	Adjusting Screw (5 Req.)
4	G5-47679	Loop Antenna	W	-50325A	Retaining Clip (5 Req.)
5	G186-32002	Oscillator Coil	W	-50547	Key Plate
6	G221-32004	1st I.F. Transformer Assembly	W	-31388	No. 8—32 x 3/16" W. H. Screw (Key Plate) (2 Req.)
7	G188-32004	2nd I.F. Transformer Assembly	W	-50561	No. 6—40 x 1/8" Fil. Hd. Screw (Rocker Plate Bearing)
8	G2-47909	Solenoid Coil Assembly ("Magnetune Version)	W	-20800	No. 8 Ext. Shakeproof Washer (3 Req.)
9	G3-34002	Condenser, .0005 Mf. Molded	W	-38056	No. 8—32 x 1/4" Set Screw (5 Req.)
10A	W-45780B	Condenser, .02 Mf. 160 Volts Paper	W	-48322F	Spring Support Bracket
10B	G79-33001	2 Sect. Var. Condenser (Antenna Section Oscillator Section)	W	-43226	Key Return Spring (5 Req.)
	MG18-47860	Riveted Mtg. Bracket, R. H.	W	-48827	Push Button Shaft (5 Req.)
	MG19-47860	Riveted Mtg. Bracket, L. H.	W	-45808	No. 8 x 3/4" P. K. Screw (8 Req.)
	MG26-47860	Idler Support Bracket	W	-48729B	Push Button (9GA and 9GC) (5 Req.) Mechanical
	G12-43564	Pulley and Hub Assembly	W	-48772A	Push Button (9GB, 9GE, 9GF, 9GG) (5 Req.) Mechanical
	W-23877	No. 8—32 x 3/16" Set Screw (2 Req.) (Pulley and Hub Assy.)	W	-47767B	Push Button (9GA and 9GC) (5 Req.) Magnetune
	W-47875	Dial Back Face	W	-48143	Push Button (9GB, 9GE, 9GF, 9GG) (5 Req.) Magnetune
	W-47930A	Dial Pointer	W	-49166	Instruction Booklet
	W-47969	Drive Shaft	W	-48734	Call Letter Sheet
	W-43542B	Drive Shaft Bracket	W	-48747	Call Letter Cover
	W-45808	No. 8 x 3/4" P. K. Screw (Drive Shaft Bracket)	MC31	-47861	Instruction Envelope Assy.
	G20-41582	Drive Cord, 42 3/4"	W	-9GA	Cabinet
	W-50590	Drive Cord Spring	W	-9GB	Cabinet, Ivory
	G30-41582	Guide Cord, 9 1/2"	W	-9GE	Cabinet, Red
	W-46348	Guide Cord Spring	W	-9GF	Cabinet, Blue
	W-46290	Cord Clamp (3 Req.)	W	-9GG	Cabinet, Tan
	W-48764A	Cord Guide (4 Req.)	W	-9GC	Cabinet, Brown
	W-49163	Dial Glass (9GA, 9GB, 9GE, 9GF, 9GG)	W	-48110	Carton (9GA, 9GB, 9GE, 9GF, 9GG)
	W-49164	Dial Glass (9GC)	W	-48142	Carton (9GC)
11	W-45782B	Condenser, .05 Mf. 120 Volts A. C.	W	-46953	Knob (2 Req.) (9GA)
12	G2-34002	Condenser, .0001 Mf. Molded	W	-44552	Knob (2 Req.) (9GB, 9GE, 9GF, 9GG)
13	W-45780B	Condenser, .02 Mf. 160 Volts Paper	W	-48165	Knob (2 Req.) (9GE)
14	W-47702	Condenser, 30 Mf. 125 Volts Elect.	MC32	-47861	Escutcheon and Reflector Assy. (9GA, 9GC)
15	W-47892	Condenser, 30-30 Mf. 135 Volts Elect.	MC33	-47861	Escutcheon and Reflector Assy. (9GB, 9GE, 9GF, 9GG)
16	W-45810B	Condenser, .006 Mf. 160 Volts Paper	MC36	-47861	Push Button and Hinge Assy. (9GA, 9GC)
17	G2-34002	Condenser, .0001 Mf. Molded	MC39	-47861	Push Button and Hinge Assy. (9GB, 9GE, 9GF, 9GG)
18	W-45780B	Condenser, .02 Mf. 160 Volts Paper	W	-48017C	Push Button Hinge Spring
19	W-45817B	Condenser, .05 Mf. 160 Volts Paper	W	-47947C	Push Button Hinge
20	W-21237A	Resistor, 60,000 Ohms 1/2 Watt Carb.	W	-46242	Rubber Bottom Mtg. Screw (Chassis Mtg.) (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GG)
21	W-22831	Resistor, 15,000 Ohms 1/2 Watt Carb.	W	-48900	No. 8—32 x 3/4" H. H. Mach. Screw (Chassis Mtg.) (9GC) (4 Req.)
22	W-26577	Resistor, 3 Megohms 1/2 Watt Carb.	U	-48744	Shakeproof Washer (Chassis Mtg.) (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GG)
23	W-21237A	Resistor, 60,000 Ohms 1/2 Watt Carb.	W	-45020	Flat Washer (Chassis Mtg.) (9GC) (4 Req.)
24	W-47873	Resistor, 900 Ohms 7 Watt Flex.	S	-80	No. 4 x 3/4" Rd. Hd. Wood Screw (4 Req.) (9GC)
25	W-23785	Resistor, 500,000 Ohms 1/2 Watt Carb.	W	-48135	No. 3—56 x 1/4" Rd. Hd. Mach. Screw (2 Req.) (9GA, 9GB, 9GE, 9GF, 9GG)
26	W-46497	Resistor, 11 Megohms 1/2 Watt Carb.	W	-49095	Cabinet Back (9GA)
27	W-23403	Resistor, 150,000 Ohms 1/2 Watt Carb.	W	-49096	Cabinet Back (9GB, 9GE, 9GF, 9GG)
28	W-47512	Resistor, 140 Ohms 3/4 Watt Flex.	C	-48979C	Cabinet Back (9GC)
29	W-47857	Resistor, 57 Ohms 7 Watt Flex.	W	-48758	Trimount Stud (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GG)
30	281-BL-7-"K"	Speaker, Spec. 5-IV-2	W	-48837	Light Deflector Felt (9GC)
	W-47166	V. C. and Cone Assembly	W	-48313	Light Deflector Felt (9GB, 9GE, 9GF, 9GG)
	W-47170	Field Coil, 450 Ohms, 60 M. A.	W	-48131A	Light Deflector Felt (9GA)
	W-47171	Output Transformer	W	-20881	No. 6 x 3/4" Rd. Hd. Wood Screw (6 Req.) (9GC Cabinet Back)
	W-47169	Cardboard Ring	W	-48018	Glass Reflector (Call Letter)
30	281-BL-7-"B"	Speaker, Spec. 55-WA-43			
	W-47290	V. C. and Cone Assembly			
	W-46686	Field Coil, 450 Ohms, 60 M. A.			
	W-46587	Output Transformer			
	W-46685	Cardboard Ring			
31A	W-47858	Volume Control, 1 Megohm			
31B	W-47858	Power Switch			
	W-47858	Pal Nut (Volume Control)			
32	G193-32004	Wave Trap			
33	W-47702A	Condenser, 30 Mf. 125 Volts Elect.			
34	W-46159	Band Change Switch			
35	G8-47866	Magnetune Switch			
36	G3-34002	Condenser, .0005 Mf. Molded			
	G2-48762	Push Button Unit Assembly			
	G32-47880	Riveted Key Assembly			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.3	315	110	0	-3	0	—	—
6A7	Osc.-Mod.	6.3	315	110	—	-3	0	-5 to -15	185
6B7	I-F Amp. & AVC	6.3	315	110	0	-3	0	—	—
76	Detector	6.3	—	—	—	—	0	—	—
76	A-F Amplifier	6.3	35	—	—	-3	0	—	—
42	Output	6.3	300	245	0	-16	0	—	—
80	Rectifier	5.0	320	—	—	—	—	—	—

Measured on 117.5 Volt Line—60 Cycles A. C.

Power Consumption Approximately 60 Watts.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather Band and Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order. NOTE: When aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is always approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as

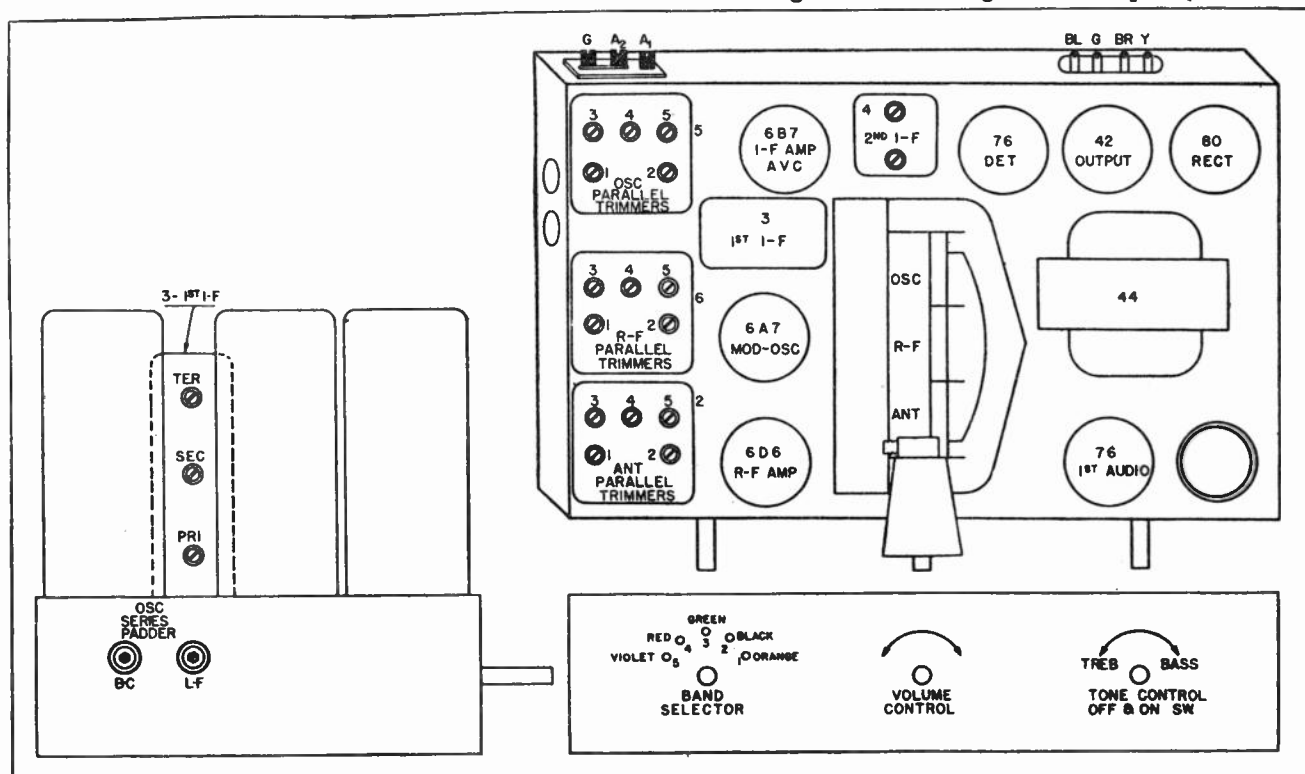


Fig 2. Top View 725

## MODEL 725

indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal

with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

After the "series" alignment of any band has been completed it will be necessary to repeat the "shunt" alignment of that band.

### (b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—

### PARTS LIST—MODEL 725

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	-36504	Dial Light Socket Assm.	21X	G34-33002	Var. Tuning Cond. Gang
1B			21Y		
2	G57-32000	Ant. Coil Assm. Complete	21Z		
	G48-32000	Ant. Coil only 150-400 Kc.		C -37434A	Dial Face only
	G47-32000	Ant. Coil only 540-1500 Kc.		-37551	Dial Hand
	G49-32000	Ant. Coil only 1500-4000 Kc.		-37554	Second Hand
	G53-32000	Ant. Coil only 4-10 Mc.		-37484	Hand Screw
	G52-32000	Ant. Coil only 10-22 Mc.		-37543	Hand Washer
	MG9-36168	Shield		B -33905A	A. C. Cord & Plug
	W-36028	5 Section Trimmer Condenser	22	-21876	Resistor, 10,000 Ohms
	MG19-36168	Coil Support Base	23A	-21876	Resistor, 10,000 Ohms
3	G47-32004	1st I. F. Assm.	23B	-22196	Resistor, 20,000 Ohms
4	G46-32004	2nd I. F. Assm.	24	-21875	Resistor, 100,000 Ohms
5	G46-32002	Osc. Coil Assm. Complete	25	-23403	Resistor, 150,000 Ohms
	G39-32002	Osc. Coil only 150-400 Kc.	26A	-23403	Resistor, 150,000 Ohms
	G40-32002	Osc. Coil only 540-1500 Kc.	26B	-21455	Resistor, 100,000 Ohms
	G41-32002	Osc. Coil only 1500-4000 Kc.	27	-23785	Resistor, 500,000 Ohms
	G45-32002	Osc. Coil only 4-10 Mc.	28A	-23785	Resistor, 500,000 Ohms
	G44-32002	Osc. Coil only 10-22 Mc.	28B	-21454	Resistor, 1.0 Megohm
	G4-34007	Condenser, 1136 mmf. *	29A	-21454	Resistor, 1.0 Megohm
	G6-34007	Condenser, 1707 mmf. *	29B	-26577	Resistor, 17,500 Ohms
	G5-34007	Condenser, 2757 mmf. *	30	W -36442	Resistor, 15,000 Ohms
	G6-34002	Condenser, 25 mmf.	31Z	G6-28807	Socket, 80
	MG20-36168	Coil Support Base	31Y		
	W-36028	5 Section Trimmer Condenser	32	G80-28807	Socket, 76
	MG10-36168	Shield	33A	G80-28807	Socket, 76
6	G33-32001	R. F. Coil Assm. Complete	33B	G75-28807	Socket, 6D6
	G27-32001	R. F. Coil only 150-400 Kc.	34	G25-28807	Socket, 42
	G26-32001	R. F. Coil only 540-1500 Kc.	35	G47-33070	Socket, 6A7
	G28-32001	R. F. Coil only 1500-4000 Kc.	36	G48-28807	Socket, 6B7
	G31-32001	R. F. Coil only 4-10 Mc.	37	W -35772	Tube Shield Half
	G30-32001	R. F. Coil only 10-22 Mc.		W -35773	Tube Shield Cap
	G1-34002	Condenser, 250 mmf.		W -35774	Tube Shield Base
	MG9-36168	Shield		W -33072	Socket Cushion
	MG19-36168	Coil Support Base	38	330CL-22	Speaker, (Table Model)
	W-36028	5 Section Trimmer Condenser		630CL-27	Speaker, (Console Model)
7Z	W -36056	Condenser, 8 mfd. 450 Volt	39U	-36271E	Band Change Switch
7Y			To		
7X	W -36055	Condenser, 4 mfd. 350 Volt	39Z	G27-26719	Terminal Board Ant.-Grd.
8			Condenser, 4 mfd. 250 Volt		
9	G4-34007	Condenser, 35 mfd. 400 Volt	40	G5-31128	Terminal Board Speaker
10	G6-34007	Condenser, 1136 mmf. *	41	W -34628	Terminal Board Cover (Speaker)
11	G5-34007	Condenser, 1707 mmf. *		W -34627	Terminal Board Insulator
12	W -30805	Condenser, 2757 mmf. *		W -36539A	Tone Control (80,000 Ohms)
13A	G2-34002	Condenser, 0.01 mfd. 400 Volt	42Z	W -36500	On & Off Switch
13B	G2-34002	Condenser, 100. mmf.	42Y		
13C	G2-34002	Condenser, 100. mmf.	43	G10-30745	Tuning Meter
14Z	W -25537A	Condenser, 0.001 mfd. 400 V.	44	G11-30745	Power Trans. 60 Cy., 110 V.
14Y			Condenser, 0.03 mfd. 400 V.		
15Z	W -31052	Condenser, 0.004 mfd. 400 V.		G12-30745	Power Trans. 25 Cy., 110 V.
15Y			Condenser, 0.05 mfd. 400 V.		
16A	W -32378	Condenser, 0.01 mfd. 400 V.	45	W -36066	Volume Control 1.0 Megohm
16B	W -32378	Condenser, 0.01 mfd. 400 V.	46	-34019	Resistor, 75,000 Ohms
17	W -23191A	Condenser, 0.01 mfd. 400 V.	B -36515	Escutcheon	
18A	W -32379	Condenser, 0.02 mfd. 200 V.	D -28	Escutcheon Screw (3)	
18B	W -32379	Condenser, 0.02 mfd. 200 V.	W -36311	Band Change Escutcheon	
19A	W -30321	Condenser, 1.0 mfd. 160 V.	W -36310	Escutcheon Indicator (Celluloid)	
19B	W -30321	Condenser, 1.0 mfd. 160 V.	W -28760B	Escutcheon Pin	
20Y	G15-33006	Condenser, B. C. Series Osc.	W -36518	Knob, Bd. Chg. & Tone Control	
20Z			Condenser, L. F. Series Osc.	W -36519	Knob, Dial
			W -36520A	Knob, Vernier	
			W -36521	Knob, Volume Control	

NOTE: \* First models had condensers mounted externally but eventually placed in G40-32002 Assm.



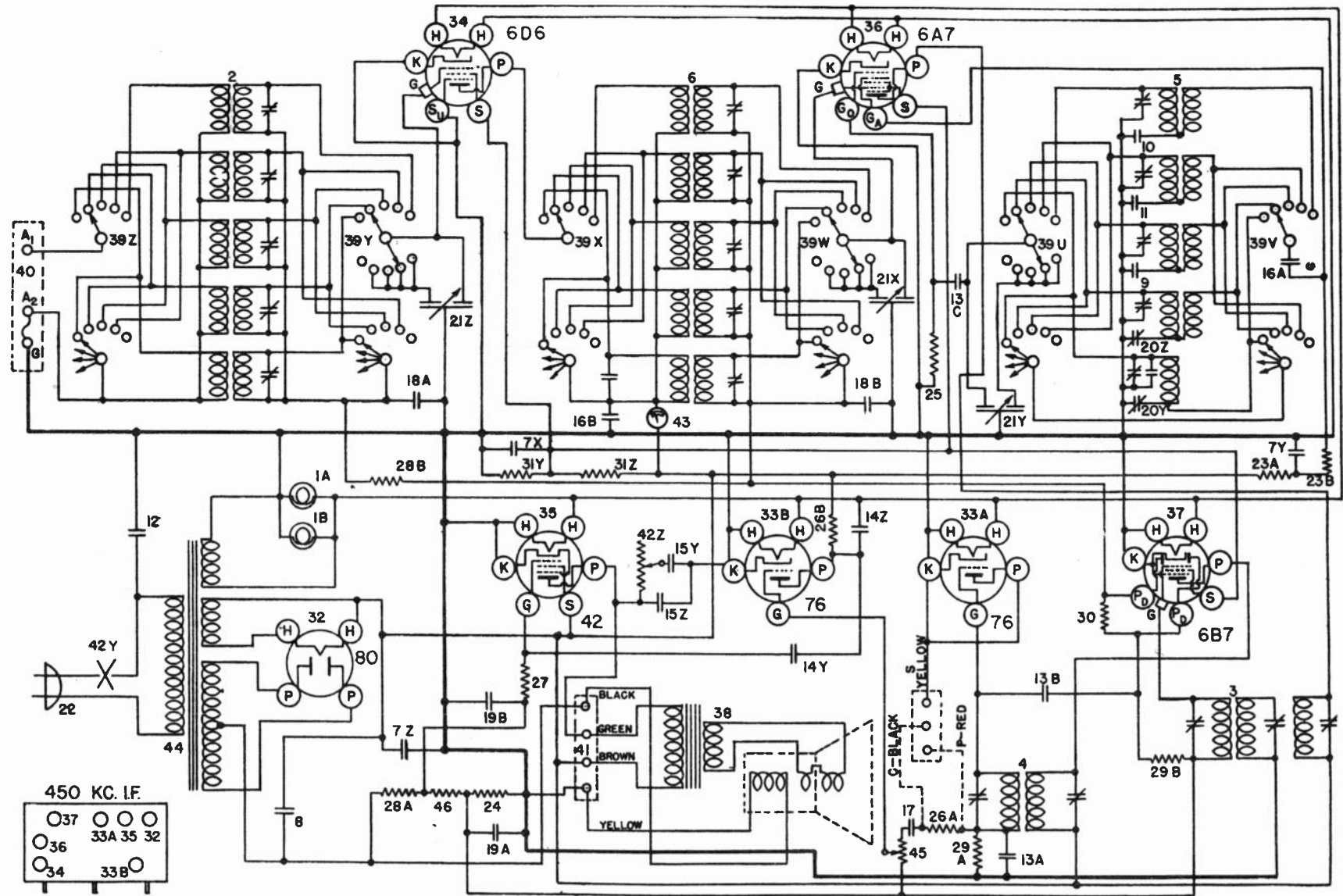


FIG. 1—WIRING DIAGRAM—MODEL 725

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	P <sub>2</sub>	S	G	Su	K	Ga
6K7	R. F. Amplifier	6.3	235	—	73	0	3.0	3.0	—
6A8	Osc.-Mod.	6.3	270	—	96	0	—	3.5	145
6K7	I. F. Amplifier	6.3	270	—	96	0	2.7	2.7	—
6H6	Det. & AVC	6.3	0	—	—	—	—	0	—
6F5	A. F. Amplifier	6.3	135	—	—	0	—	2.5	—
6N6	Output	6.3	270	260	—	0	—	2.2	—
5Z4MG	Rectifier	5.0	—	—	—	—	—	350	—

Power Output Approximately 6 Watts.  
 Power Consumption Approximately 83 Watts at 117.5 Volts.  
 Voltage Drop Across Speaker Field 77 Volts

**I. Tuning I-F Amplifier to 450 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the fidelity control knob to the left (NORMAL).
- (c) Turn the band selector switch to the High Frequency Band.
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.
- (f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used

in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC.," "ANT" and "R-F" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" and "R-F" trimmers. **DO NOT READJUST the "OSC" TRIMMER.**

(u) To align the series trimmer (Item 33, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	.....
18000 Kilocycles	.....

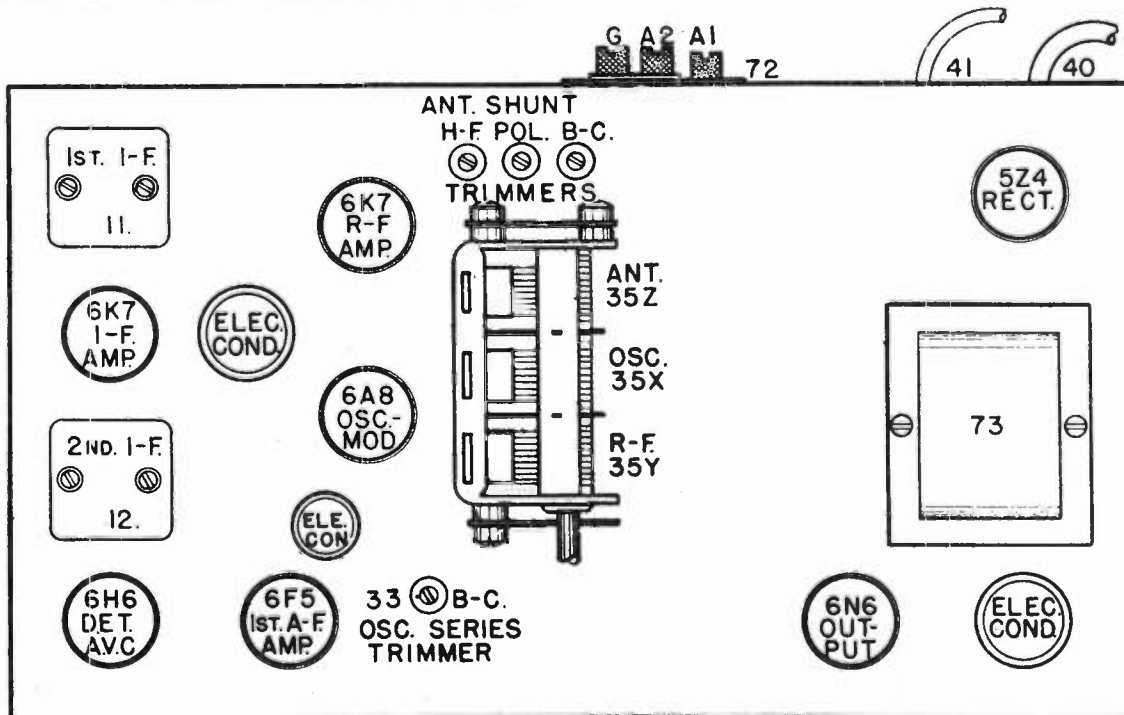


Fig. 2 Top View 726

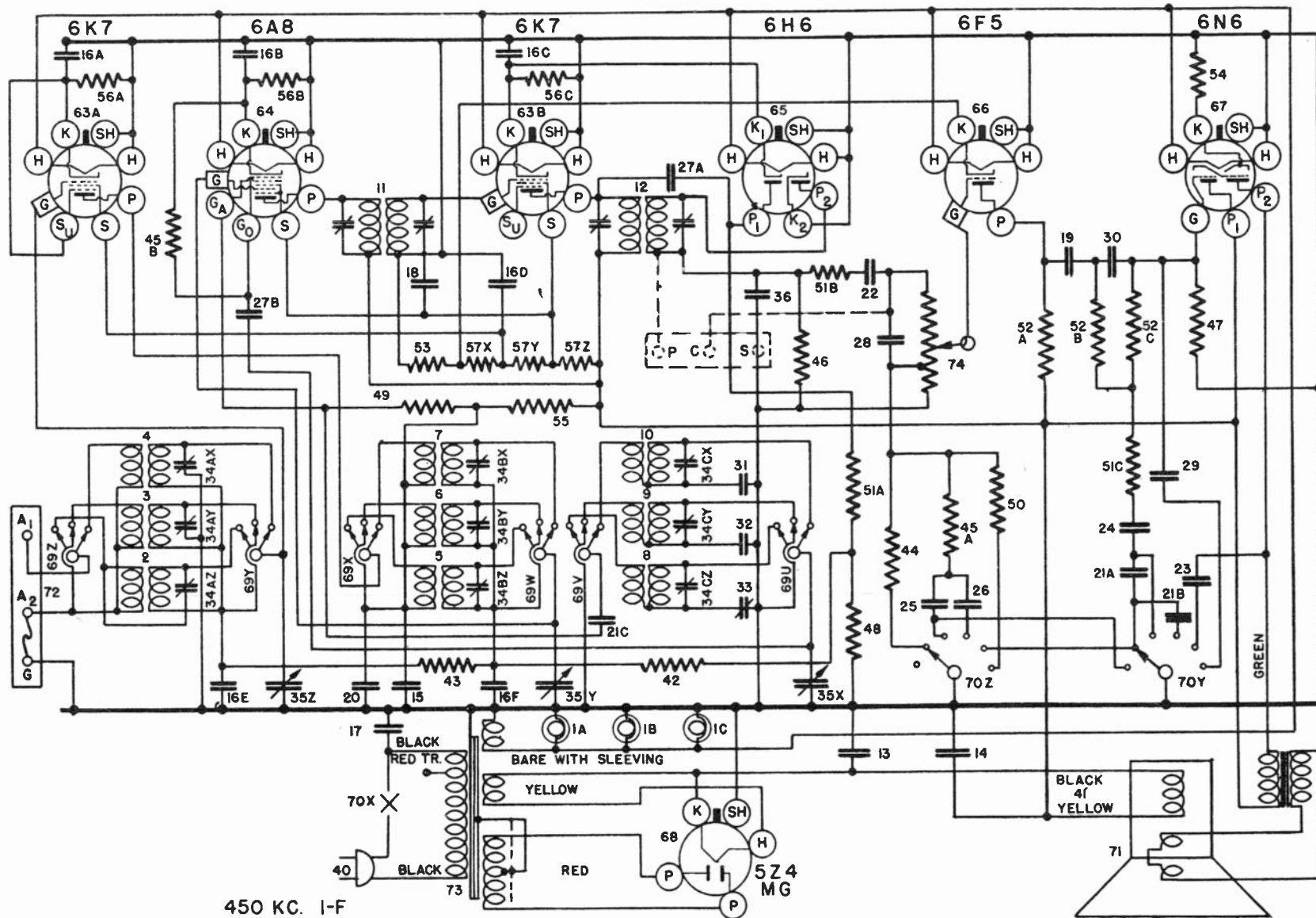


FIG. 1.—WIRING DIAGRAM—MODEL 726

MODEL 726

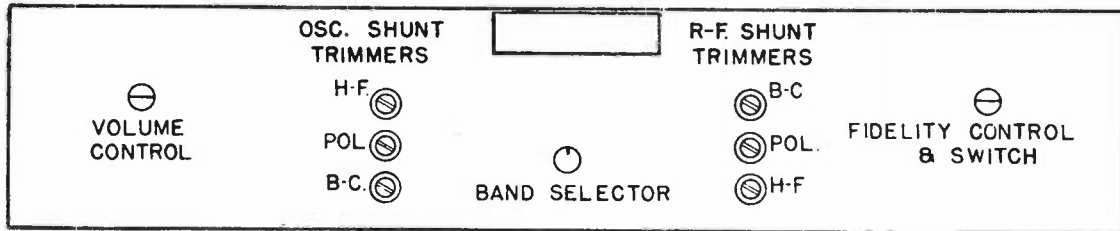


Fig. 4 Front View 726

PARTS LIST—MODEL 726

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Dial Light	44	—36319	Resistor, 75,000 Ohm. 1/4 W.
	G3 —37965	Socket Assy. Dial Light	45A	—35928	Resistor, 60,000 Ohm. 1/4 W.
2	G110—32000	Coil Ant. 540-1800 Kc.	45B	—35928	Resistor, 60,000 Ohm. 1/4 W.
3	G111—32000	Coil Ant. 1800-6000 Kc.	46	—36321	Resistor, 400,000 Ohm. 1/4 W.
4	G112—32000	Coil Ant. 6.-18 Mc.	47	—38623	Resistor 750,000 Ohm. 1/4 W.
5	G76 —32001	Coil R. F. 540-1800 Kc.	48	—36322	Resistor, 500,000 Ohm. 1/4 W.
6	G89 —32001	Coil R. F. 1800-6000 Kc.	49	—37377	Resistor, 20,000 Ohm. 1 W.
7	G90 —32001	Coil R. F. 6.-18 Mc.	50	—35929	Resistor, 150,000 Ohm. 1/4 W.
8	G115—32002	Coil Osc. 590-1800 Kc.	51A	—35601	Resistor, 300,000 Ohm. 1/4 W.
9	G121—32002	Coil Osc. 1800-6000 Kc.	51B	—35601	Resistor, 300,000 Ohm. 1/4 W.
10	G122—32002	Coil Osc. 6.-18 Mc.	51C	—35601	Resistor, 300,000 Ohm. 1/4 W.
11	G121—32004	1st. IF. Assy.	52A	—35930	Resistor, 200,000 Ohm. 1/4 W.
12	G120—32004	2nd. IF. Assy.	52B	—35930	Resistor, 200,000 Ohm. 1/4 W.
13	W —36055	Condenser, 35Mf. 400V.	52C	—35930	Resistor, 200,000 Ohm. 1/4 W.
14	W —36057	Condenser, 40Mf. 300V.	53	W —30127	Resistor, 450 Ohm. 1/2 W. Flex.
15	W —41081	Condenser 16Mf. 250V.	54	W —23012A	Resistor, 40 Ohm 3/4 W. Flex.
16A	W —36541	Condenser, .02Mf. 160V.	55	—6705	Resistor, 3500 Ohm. 1 W.
TO	W —36541	Condenser, .02Mf. 160V.	56A	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
16F	W —36541	Condenser, .02Mf. 160V.	56B	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
17	W —30805	Condenser, .01Mf. 400V.	56C	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
18	W —35936	Condenser, .05Mf. 200V.	57Z	W —37781	Resistor, 16,500 Ohm. {
19	W —32780B	Condenser, .05Mf. 400V.	57Y	W —37781	Resistor, 4,000 Ohm. {
20	W —32378	Condenser, .01Mf. 400V.	57X	W —37781	Resistor 18,500 Ohm. {
21A	W —35139	Condenser, .004Mf. 400V.	63A	G151—36400	Socket Type 6K7
21B	W —35139	Condenser, .004Mf. 400V.	63B	G151—36400	Socket Type 6K7
21C	W —35139	Condenser, .004Mf. 400V.	64	G156—36400	Socket Type 6A8
22	W —28621	Condenser, .02Mf. 200V.	65	G155—36400	Socket Type 6H6
23	W —23615	Condenser, .05Mf. 400V.	66	G158—36400	Socket Type 6F5
24	W —30323	Condenser, .01Mf. 200V.	67	G165—36400	Socket Type 6N6
25	W —28619	Condenser, .006Mf. 200V.	68	G154—36400A	Socket Type 5Z4
26	W —25435	Condenser, .003Mf. 400V.	69	C —40910A	Band Selector Switch
27A	G2 —34002	Condenser, .0001Mf. (Mica)	70Z	W —42387C	Fidelity Switch
27B	G2 —34002	Condenser, .0001Mf. (Mica)	70Y	W —42387C	Fidelity Switch
28	G8 —34002	Condenser, .00001Mf. (Mica)	70X	W —42387C	Line Switch
29	G3 —34002	Condenser, .0005Mf. (Mica)	71	—645CJ3	Speaker "M" Spec. 1D640
30	G6 —34002	Condenser, .000025Mf. (Mica)		—42883	Coné Assy.
31	G20 —34000	Condenser, 4910Mmf. (Mica)		—40406	Field Coil
32	G7 —34000	Condenser, 1450Mmf. (Mica)		—42885	Output Trans. { For Above
33	—40769	Condenser, B. C. Osc. Series Trim.	72	G27 —26719	Ant. & Gnd. Terminal Assy.
34	W —35951	Condenser, 3 Section Trimmer	73	—42260	Power Trans. 60 Cy. 110 V.
35	G52 —33002	Condenser, 3 Gang Var. Tuning		—42261	Power Trans. 25 Cy. 110 V.
	MG33—42255	Dial Drive Assy.	74	—42501	Volume Control 3 Meg.
	C —42491	Dial Glass (Calibrated)			Misc. Parts
	—42300	Drive Unit	C	—42045	Escutcheon
	—42597	Dial Mask (Cardboard)	B	—42043	Escutcheon Rubber
	W —42180	Dial Hand, Pointer	D	—30	Screws—Escutcheon Mtg.
	—41144	Dial Hand, Time Log	C	—42044	Lens—Escutcheon
	W —40486	Pointer Mtg. Screw	W	—40230B	Emblem
36	G1 —34002	Condenser, .00025 Mf. (Mica)	W	—32620	Nut—Emblem Mtg.
37	W —30270	Condenser, .001 Mf. 400V.	W	—36117	Rubber Mtg. Foot
40	B —33906A	Power Cord & Plug	W	—37339	Knob, (2 Req.)
41	G3 —35696	Cable, Speaker	W	—40192B	Knob, B. S. Sw. (1 Req.)
42	—37245	Resistor, Meg. Ohm. 1/4 W.	W	—42490	Knob, S. S. (1 Req.)
43	—35600	Resistor, 100,000 Ohm. 1/4 W.		6-NG	Cabinet

CHASSIS MODELS 726-01-11-21-31-41-51

SPECIFICATIONS

This Model Crosley radio is identical with Model 726 except that the dial is calibrated in Metres instead of Kilocycles, a long wave band has been substituted for

GREEN BAND 16- 52 METRES (18.1-5.8 Megacycles)  
 RED BAND 750-2000 METRES (400-150 Kilocycles)  
 YELLOW BAND 185- 555 METRES (1725-540 Kilocycles)

the Police and Amateur Band, the I-F transformers are tuned to 462 kilocycles rather than 450 kilocycles and a continuously variable tone control is used in place of the six-step Fidelity Control.

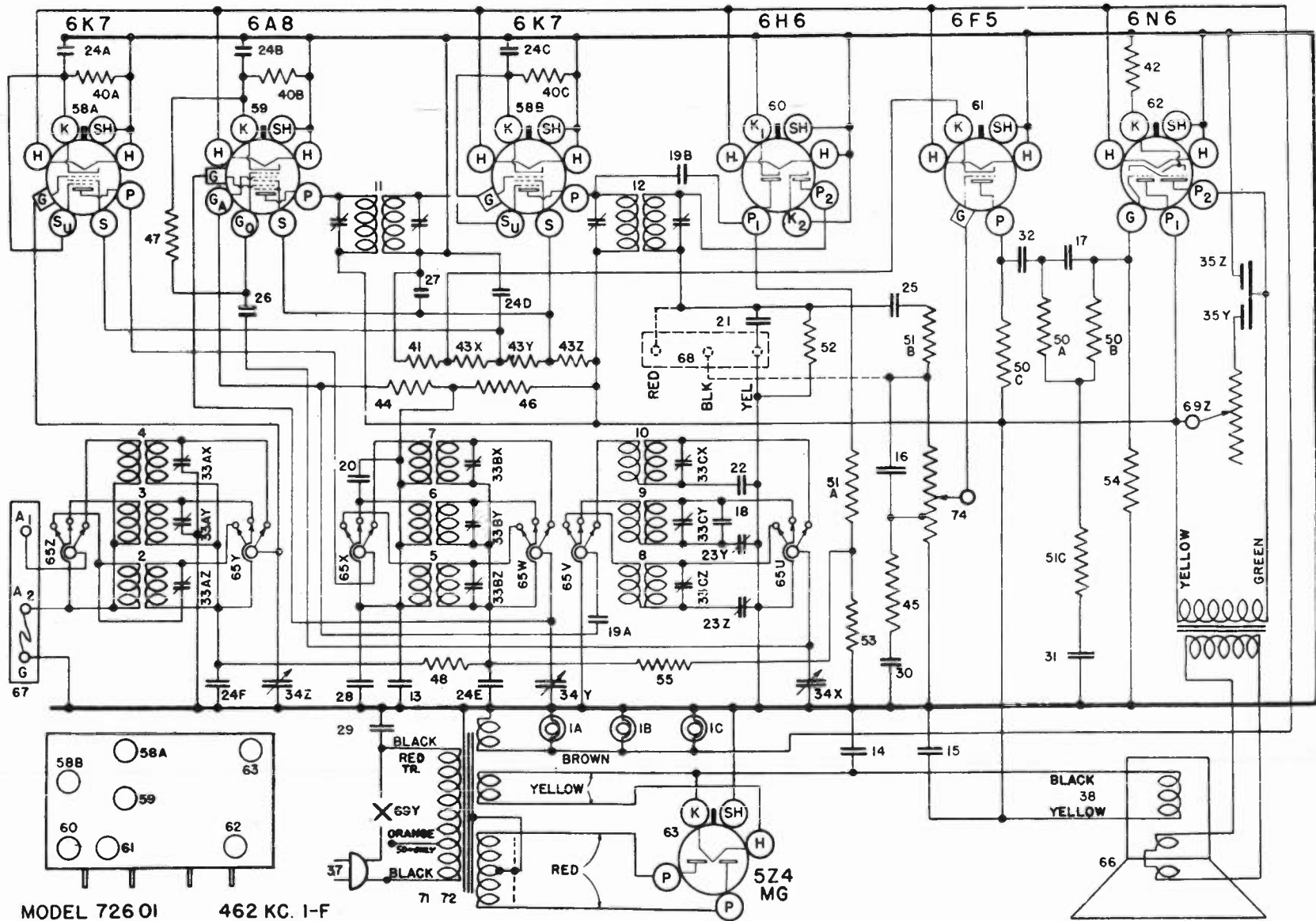
The tuning range of the receiver is as follows:

For tube socket voltage readings and alignment procedure, refer to pages 387-389, keeping in mind that the I.F. frequency is 462 kilocycles rather than 450 kilocycles.

PARTS LIST — MODEL 726-01-11-21-31-41-51

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Dial Light Bulb	36		None
	G3 —37965	Light Socket	37	B —33906A	Power Cord and Plug
2	G110—32000	Ant. Coil—185-555 Metres	38	G3 —35696	Cable for Speaker
3	G122—32000	Ant. Coil—750-2000 Metres	39		None
4	G112—32000	Ant. Coil— 16-52 Metres	40ABC	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
5	G76 —32001	R-F. Coil—185-555 Metres	41	W —30127	Resistor, 450 Ohm 1/2 W. Flex.
6	G86 —32001	R-F. Coil—750-2000 Metres	42	W —23012A	Resistor, 40 Ohm 3/4 W. Flex.
7	G84 —32001	R-F. Coil— 16-52 Metres	43Z		Resistor, 16,500 Ohm
8	G115—32002	Osc. Coil—185-555 Metres	43Y	W —37781	Resistor, 4,000 Ohm
9	G114—32002	Osc. Coil—750-2000 Metres	43X		Resistor, 18,500 Ohm
10	G107—32002	Osc. Coil— 16-52 Metres	44	—37377	Resistor, 20,000 Ohm 1 W.
11	G121—32004	1st I-F. Assy. 462 Kc.	45	—36761	Resistor, 40,000 Ohm 1/4 W.
12	G120—32004	2nd I-F. Assy. 462 Kc.	46	— 6705	Resistor, 3,500 Ohm 1 W.
13	W —41081	Condenser, 16 Mf. 250 V.	47	—35928	Resistor, 60,000 Ohm 1/4 W.
14	W —36055	Condenser, 35 Mf. 400 V.	48	—35600	Resistor, 100,000 Ohm 1/4 W.
15	W —36057	Condenser, 40 Mf. 300 V.	49		None
16	G8 —34002	Condenser, .00001 Mf. 200 V.	50ABC	—35930	Resistor, 200,000 Ohm 1/4 W.
17	G6 —34002	Condenser, .000025 Mf. 200 V.	51ABC	—35601	Resistor, 300,000 Ohm 1/4 W.
18	G5 —34002	Condenser, .00005 Mf. 200 V.	52	—36321	Resistor, 400,000 Ohm 1/4 W.
19AB	G2 —34002	Condenser, .0001 Mf. 200 V.	53	—36322	Resistor, 500,000 Ohm 1/4 W.
20	G11 —34002	Condenser, .000175 Mf. 200 V.	54	—38623C	Resistor, 750,000 Ohm 1/4 W.
21	G1 —34002	Condenser, .00025 Mf. 200 V.	55	—37245	Resistor, 1.5 Megohm 1/4 W.
22	G20 —34000	Condenser, 4190 Mmf.	58AB	G151—36400	Socket Type 6K7
23	—42426	Osc. Series Trimmer Cond.	59	G156—36400	Socket Type 6A8
24A			60	G155—36400	Socket Type 6H6
to	W —36541	Condenser, .02 Mf. 160 V.	61	G158—36400	Socket Type 6F5
24F			62	G165—36400	Socket Type 6N6
25	W —32379	Condenser, .02 Mf. 200 V.	63	G154—36400	Socket Type 5Z4
26	W —35139	Condenser, .004 Mf. 400 V.	64		None
27	W —35936	Condenser, .05 Mf. 200 V.	65	C —40910A	Band Selector Switch
28	W —32378	Condenser, .01 Mf. 400 V.	66	432CJ4 "M"	Speaker Spec. 1-D-543
29	W —30805	Condenser, .01 Mf. 400 V.		—40277	Cone Assy. for 432CJ3 Spk. "M"
30	W —28619	Condenser, .006 Mf. 200 V.		—40411	Field Coil for 432CJ3 Spk. "M"
31	W —35139	Condenser, .004 Mf. 400 V.		—42877	Output Trans. for 432CJ3 Spk. "M"
32	W —32708B	Condenser, .05 Mf. 400 V.	67	G27 —26719	Ant. and Gnd. Terminal Board
33ABC	W —35951	3 Sect. Shunt Trimmer Cond.	68	G36 —26719	Phono. Terminal Board
34	G52 —33002	3 Gang Var. Tuning Condenser	69Z		Tone Control (80,000 Ohm)
	MG23 —42804	Dial Drive Complete	69Y		Line Switch
	—42819C	Drive Unit Only	70		None
	D —42313B	Dial—Calibrated Glass	71	—42343	Power Trans. 50 Cy. 110 V.
	—42822	Dial-Mask—Paper Background	and 72	—42344	Power Trans. 50 Cy. 220 V.
	W —40485A	Long Pointer		—42260	Power Trans. 60 Cy. 110 V.
	W —41145	Short Pointer		—42261	Power Trans. 25 Cy. 110 V.
	W —40486	Screw—Pointer Mtg.		—42262	Power Trans. 25 Cy. 220 V.
	C —37894	Escutcheon	73		None
	B —37896A	Retaining Ring—Escutcheon	74	—42006	Volume Control 3 Meg. Tap 1 Meg.
	W —40365	Felt—Escutcheon		W —37339	Knob—3 Reg.
	B —37898	Glass Lens—Escutcheon		W —40192B	Knob—1 Req.
35Z				W —36117	Rubber Mtg. Foot
35Y	W —30152	Condenser, .004 Mf. 400 V. } Condenser, .05 Mf. 400 V. }			



MODEL 726 01 462 KC. I-F

FIG. 1.—WIRING DIAGRAM—MODEL 726-01

Printed in U. S. A.

MODEL 726-01

Specifications

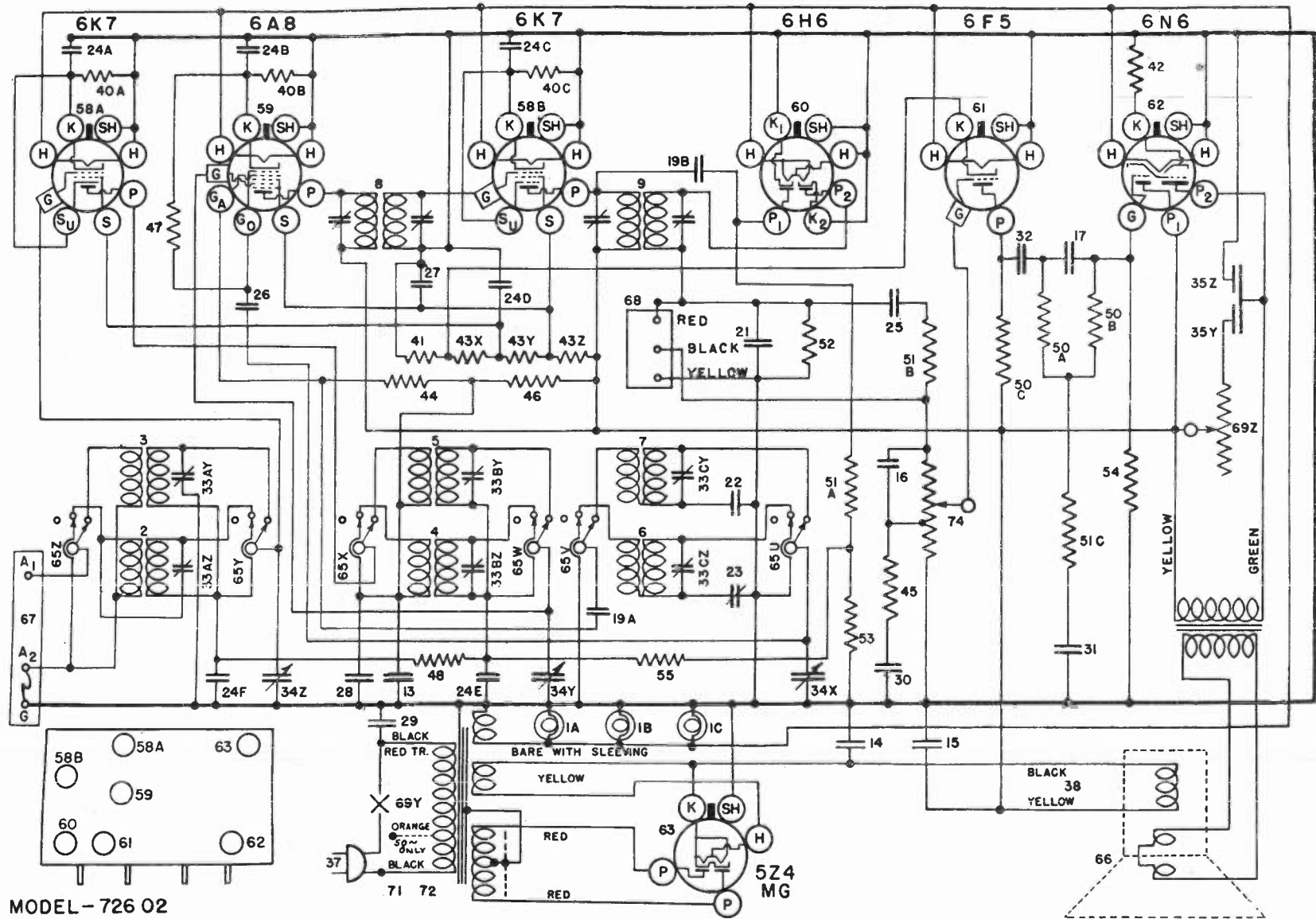
This model Crosley radio is identical with Model 726 except that the Police and Amateur tuning band has been omitted and a continuously variable tone control is used in place of the six-step Fidelity Control.

For tube socket voltage readings and alignment procedure, refer to pages 387-389, keeping in mind that the I.F. transformers are tuned to 462 kilocycles rather than 450 kilocycles.

PARTS LIST — MODEL 726-02-12-22-32-42-52

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Bulb—Dial Light	37	B —33906A	Power Cord and Plug
	G3 —37965	Dial Light Socket	38	G3 —35696	Cable for Speaker
2	G110—32000	Ant. Coil—185-555 Metres	39		None
3	G116—32000	Ant. Coil—16-52 Metres	40ABC	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
4	G76 —32001	R-F. Coil—185-555 Metres	41	W —30127	Resistor, 450 Ohm 1/2 W. Flex.
5	G90 —32001	R-F. Coil—16-52 Metres	42	W —23012A	Resistor, 40 Ohm 3/4 W. Flex.
6	G115—32002	Osc. Coil—185-555 Metres	43Z		Resistor, 16,500 Ohm
7	G122—32002	Osc. Coil—16-52 Metres	43Y	W —37781	Resistor, 4,000 Ohm
8	G121—32004	1st I-F. Assy. 462 Kc.	43X		Resistor, 18,500 Ohm
9	G120—32004	2nd I-F. Assy. 462 Kc.	44	—37377	Resistor, 20,000 Ohm 1W.
10		None	45	—36761	Resistor, 40,000 Ohm 1/4 W.
11		None	46	— 6705	Resistor, 3,500 Ohm 1W.
12		None	47	—35928	Resistor, 60,000 Ohm 1/4 W.
13	W —41081	Condenser, 16 Mf. 250 V.	48	—35600	Resistor, 100,000 Ohm 1/4 W.
14	W —36055	Condenser, 35 Mf. 400 V.	50ABC	—35930	Resistor, 200,000 Ohm 1/4 W.
15	W —36057	Condenser, 40 Mf. 300 V.	51ABC	—35601	Resistor, 300,000 Ohm 1/4 W.
16	G8 —34002	Condenser, .00001 Mf. 200 V.	52	—36321	Resistor, 400,000 Ohm 1/4 W.
17	G6 —34002	Condenser, .000025 Mf. 200 V.	53	—36322	Resistor, 500,000 Ohm 1/4 W.
18		None	54	—38623	Resistor, 750,000 Ohm 1/4 W.
19AB	G2 —34002	Condenser, .0001 Mf. 200 V.	55	—37245	Resistor, 1.5 Megohm 1/4 W.
20		None	56		None
21	G1 —34002	Condenser, .00025 Mf. 200 V.	57		None
22	G20 —34000	Condenser, .4190 Mmf.	58AB	G151—36400	Socket Type 6K7
23	—42830	Condenser, Osc. Series Trimmer	59	G156—36400	Socket Type 6A8
24A to 24F	W —36541	Condenser, .02 Mf. 160 V.	60	G155—36400	Socket Type 6H6
25	W —28621	Condenser, .02 Mf. 200 V.	61	G158—36400	Socket Type 6F5
26	W —35139	Condenser, .004 Mf. 400 V.	62	G165—36400	Socket Type 6N6
27	W —35936	Condenser, .05 Mf. 200 V.	63	G154—36400	Socket Type 5Z4
28	W —32378	Condenser, .01 Mf. 400 V.	64		None
29	W —30805	Condenser, .01 Mf. 400 V.	65	C —42844	Switch—Band Selector
30	W —28619	Condenser, .006 Mf. 200 V.	66	432CJ3 "M"	Speaker Spec. 1-D-543
31	W —35139	Condenser, .004 Mf. 400 V.		—40277	Cone Assy. for 432CJ3 Spk. "M"
32	W —32708B	Condenser, .05 Mf. 400 V.		—40411	Field Coil for 432CJ3 Spk. "M"
33ABC	W —42830	3 Sect. Shunt Trimmer Cond. Assy.		—42877	Output Trans. for 432CJ3 Spk. "M"
34	G52 —33002	3 Gang Var. Tuning Cond.	67	G27 —26719	Ant. and Gnd. Terminal Board
	MG23 —42828	Dial Drive Complete	68	G36 —26719	Phono. Terminal Board
	—42845B	Drive Unit Only	69Z		Tone Control (80,000 Ohm)
	D —42318A	Dial—Calibrated Glass	69Y		Line Switch
	—42843	Dial Mask—Paper Background	70		None
	W —40485A	Long Pointer		—42343A	Power Trans. 50 Cy. 110 V.
	W —41145	Short Pointer	71	—42344A	Power Trans. 50 Cy. 220 V.
	W —40486	Pointer Mtg. Screw	and	—42260	Power Trans. 60 Cy. 110 V.
	C —37894	Escutcheon	72	—42261	Power Trans. 25 Cy. 110 V.
	B —37896A	Retaining Ring for Escutcheon		—42262	Power Trans. 25 Cy. 220 V.
	B —37898	Glass Lens for Escutcheon	73		None
	W —40365	Escutcheon Felt	74	—42006	Volume Control, 3 Meg. Tap 1 Meg.
35Z		Condenser, .004 Mf. 400 V.		W —37339	Knob—3 Req.
35Y	W —30152	Condenser, .05 Mf. 400 V.		W —40192B	Knob—1 Req.
36		None		W —36117	Rubber Mtg. Foot



MODEL-726 02

462 KC I-F

FIG. 1.—WIRING DIAGRAM—MODEL 726-02

Printed in U. S. A.

MODEL 726-02



These models are the same as Model 718 with the following additions:

**Model 728** — Same as Model 718 with the addition of a long wave band, making a three band receiver covering 2000 to 790 — 555 to 174 — 51.3 to 16.4 meter bands.

**Model 738** — Same as Model 718 with the addition of Pickup and Motor for Phono Operation.

**Model 748** — Same as Model 728 with addition of Pickup and Motor for Phono Operation.

For voltage readings for Models 728, 738 and 748 use chart in Supplement No. 196 (718).

For I. F. alignment and for low and medium wave bands use procedure as outlined in supplement No. 196 (718).

To align the long wave band (2000 - 790 meters) on models 728 and 748 proceed as follows:

Connect output meter in usual way.

(a) Open condenser gang all the way.

(b) Using a .0002 mfd. condenser in series with signal generator lead, connect to antenna terminal of receiver.

(c) Set signal generator to 380 Kilocycles (790 meters).

(d) Adjust L.W. Oscillator shunt trimmer condenser so gang just tunes through a peak.

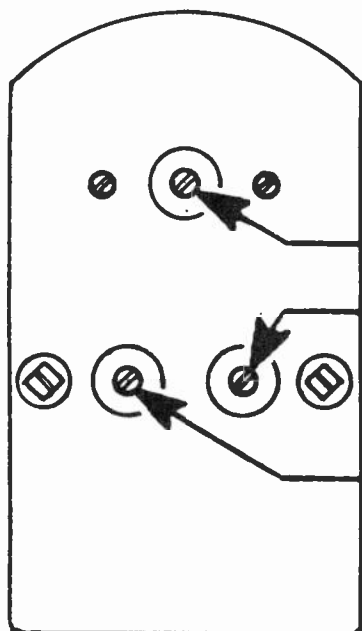
(e) Set signal generator to 350 Kilocycles (860 meters).

(f) Tune-in 350 Kc. signal with manual tuning knob. Adjust L. W. Antenna shunt trimmer condenser for maximum output. Repeat operations (c and d and e and f) for more accurate adjustment.

(g) Set signal generator to 150 Kilocycles (2000 meters).

(h) Tune-in 150 Kc. signal and while rocking the condenser gang back and forth adjust L. W. Oscillator series condenser for maximum output.

(i) Repeat (e) and (f).



G179—32000	H. F. Antenna Coil, 51.3-16.4 Meters
G143—32000	B. C. Antenna Coil, 555-174 Meters
G178—32000	L. F. Antenna Coil, 2000-790 Meters
G180—32002	{ H. F. Oscillator Coil, 51.3-16.4 Meters.
	{ B. C. Oscillator Coil, 555-174 Meters
G179—32002	L. F. Oscillator Coil, 2000-794 Meters
W —46214	Trimmer Condenser { L. F. Antenna
	{ L. F. Oscillator
D —46089	Dial Glass
G56 —34001	Gang Condenser, 2 Section { Antenna
	{ Oscillator
B —46088A	Band Change Switch
—45923A	Power Trans., 110 V. 60 Cy. (728 only)
—45959A	Power Trans., 110 V. 50 Cy. (728
—45960A	Power Trans., 220 V. 50 Cy. and
—45961A	Power Trans., 110 V. 25 Cy. (748
—45962A	Power Trans., 220 V. 25 Cy. (728 only)
—45963B	Power Trans., Universal (728 only)

**MODEL 728**

W —46346	8CA Cabinet
D —46817	8MA Cabinet
D —47200	8HE Cabinet

L.W.  
**OSCILLATOR SERIES TRIMMER.**  
**ANTENNA SHUNT TRIMMER.**  
**OSCILLATOR SHUNT TRIMMER.**

—45972	Knob (8CA)
—46408	Knob (8MA and 8HE)
B —45943C	Escutcheon (8CA)
—46451A	Escutcheon (8MA and 8HE)
—46240	Call Letter Sheet (728 and
W —50551A	Call Letter Cover) 748
<b>MODEL 728</b>	
480-BP-15-"Z"	Speaker, Spec. E8L327
—46763	Field Coil, 700 Ohms 50 M. A.
—46762	V. C. and Cone Assembly
—46764	Output Transformer
—46765	Cardboard Ring
<b>MODEL 728</b>	
280-BP-12-"H"	Speaker, Spec. S5331J5
—46898	V. C. and Cone Assembly
—46899	Output Transformer
—46795	Cardboard Ring
<b>MODEL 728</b>	
280-BP-12-"B"	Speaker, Spec. 55WA30
—46693	Field Coil, 700 Ohms 50 M. A.
—46682	V. C. and Cone Assembly
—46694	Output Transformer
—46685	Cardboard Ring
<b>MODEL 748</b>	
480-BP-15-"B"	Speaker, Spec. 801Q3
—46679	Field Coil, 700 Ohms 50 M. A.
—46678	V. C. and Cone Assembly
—46680	Output Transformer
—46681	Cardboard Ring

## PARTS LIST — MODELS 728 and 748

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
	W —46964	No. 6 x 1/2" Thumb Hd. Wood Screw (Cabinet Back 8MA Cabinet)		W —33502	Needle Cup
	—20881	No. 6 x 3/8" R. H. Wood Screw (Cabinet Back 8HE Cabinet)		W —33503	Needle Cup Lid
		<b>MODEL 748</b>		—46148A	Phono-Radio Switch
	—8NA	Cabinet		W —33201	3/8" Palnut (Phono-Radio Switch)
	—46408	Knob (4 Req.)		B —47013	Turn Table
	—46451A	Escutcheon		W —46999	Rubber Friction Drive
	—46987	Grille Cloth		W —47006	Drive Plate
D	—30	No. 2 x 3/8" Oval Ctsk. Hd. Screw (4 Req.) (Escutcheon)		W —47002	Rubber Grommet, Motor Mtg.
	—46140	Carton for 8NA Cabinet		W —47003	Rubber Grommet, Motor Mtg.
	—46837	Push Button		—47004	Pickup and Tone Arm
	—46998	Instruction Booklet		—46161	1/2"—27 Hex. Nut (Pickup and Tone Arm)
D	—46180	Cabinet Back	D	—165	No. 8 x 1" Oval Hd. Wood Screw (Motor Board)
N	—8	No. 8—32 Hex. Nut	W	—20754A	Cup Washer (Motor Board)
	—2046	No. 8 Int. Shakeproof Washer } Speaker		—22085	No. 8—32 x 1 1/2" W. H. Screw (Motor Mtg.)
O	—8	Flat Washer		—46461	Headed Bushing (Motor Mtg.)
W	—46464	No. 6 x 1/2" Thumb Hd. Wood Screw (Cabinet Back) (4 Req.)	W	—24715	No. 8 Elastic Stop Nut (Motor Mtg.)
		<b>MOTOR PARTS</b>	W	—4702	Flat Washer (Motor Mtg.)
D	—47005A	Motor Board	W	—32380	Condenser, .05 Mf. 200 V. Paper
	—47007	Motor, 60 Cycle 110 Volt		—35934	Resistor, 6,500 Ohms 1/4W.
	—47008	Motor, 50 Cycle 120 Volt	W	—47015	Automatic Stop
	—47012	Motor, 50 Cycle 230 Volt		—20881	No. 6 x 3/8" Rd. Hd. Wood Screw (2 Req.) (Automatic Stop)
	—47025	Motor, 50 Cycle 110-220 Volt			

## PARTS LIST — MODEL 738

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
7	W —45720	4 Section Trimmer Condenser		B —47013	Turn Table
17	W —46128	Condenser, 16 Mf. 250 V. Elect.		W —46999	Rubber Friction Disc
22	W —35758	Condenser, .008 Mf. 400 V. Paper		W —47006	Drive Plate
53	W —35641	Condenser, .02 Mf. 160 V. Paper		—46148A	Phono-Radio Switch
	8NA	Cabinet		W —33502	Needle Cup
	—46451A	Escutcheon		W —33503	Needle Cup Lid
D	—30	Escutcheon Screws (4 Req.)	D	—47005A	Motor Board
	—46408	Knob	D	—165	No. 8 Wood Screw
D	—46180	Cabinet Back	W	—20754	Cup Washer
	—46837	Push Button		—46161	Hex. Nut (Pickup Arm)
	—47023	Call Letter Sheet	W	—47003	Rubber Grommet (Motor Mounting)
W	—50551B	Call Letter Cover	W	—47002	Rubber Grommet (Motor Mounting)
	—47014	Instructions	W	—35201	3/8" Palnut
W	—46464	Screws—Back Mounting	W	—47015	Automatic Stop
W	—43552	Speaker Plug Clamp		—22085	Motor Mounting Screw
	—45808	P. K. Screw for Clamp		—47240	Motor, 60 Cycle 220 Volt
	—46140	Carton		—47007	Motor, 60 Cycle 110 Volt
N	—8	Hex Nut (Speaker)		—47008	Motor, 50 Cycle 120 Volt
	—2046	Shakeproof Washer (Speaker)		—47012	Motor, 50 Cycle 230 Volt
	—44499	Screw (Chassis)			
W	—45579	Washer (Chassis)			
	—46987	Grille Cloth			
		<b>PHONO PARTS</b>			
	—47004	Pickup and Tone Arm			

SOCKET VOLTAGE READINGS AT 117.5 VOLT LINE  
PIN NUMBER

Tube	Purpose	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	125	74	Osc. Grid	130	H	—
6SK7	I-F Amplifier	—	H	—	Grid	—	74	H	125
6P5	Diode	—	H	—	—	Grid	—	H	—
6SF5	1st Audio	—	—	Grid	—	65	—	H	H
25L6	Output	—	H	120	125	Grid	—	H	8
2-25Z6	Rectifier	—	H	117.5 A.C.	232	—	—	H	122

ALIGNMENT PROCEDURE

WILL GIVE A REASONABLE OUTPUT METER READING.

All circuits have been accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

NOTE: The circuit of this receiver is such that if the signal generator has one side of the line connected to the case or ground side and the generator and receiver are plugged into the same line, serious damage may result to either or both instruments. ALWAYS ISOLATE SIGNAL GENERATOR GROUND LEAD BY INSERTING A .01 mf. OR SMALLER CONDENSER IN SERIES WITH THE LEAD BEFORE CONNECTING TO THE CHASSIS.

CONNECTING OUTPUT METER

One terminal of the output meter should be connected to the plate (No. 3 pin) and the other terminal to the screen (No. 4 pin) of the 25L6GT output tube. Be sure the meter is protected from D.C. by connecting a .25 mf. condenser in series with one of the leads.

(1) I-F Amplifier Alignment

- (a) Connect the output lead of the signal generator through a .02 mf. condenser to the top (GRID) cap of the 6A8GT tube (leaving the tubes grid connector in place).
- (b) Connect the ground lead of the signal generator through a .01 mf. (or smaller .001 mf.) condenser to the chassis.
- (c) Adjust station selector so that the rotor plates of the gang are completely disengaged, turn band to B.C. position and turn the volume control to maximum.
- (d) Set the signal generator to 455 kc.
- (e) Adjust the trimmer condensers on the 2nd I-F transformer for maximum output.
- (f) Adjust the trimmer condensers on the 1st I-F transformer for maximum output.
- (g) Repeat (e) and (f) for more accurate adjustments. IN ORDER TO PREVENT A.V.C. ACTION, ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT

(2) Aligning R-F Amplifier

- (a) Connect the signal generator output lead through a .0001 mf. condenser to the antenna lead (YELLOW) and the generator ground lead to the Black lead of the receiver. Turn band switch to B.C. band, open gang all the way and turn volume control on full.
- (b) Set signal generator to 1725 kilocycles.
- (c) Adjust B.C. oscillator trimmer for maximum output (receiver does not have to tune through this signal).
- (d) Set signal generator to 1400 kilocycles.
- (e) Tune in generator signal on receiver by means of manual tuning knob.
- (f) Adjust B.C. antenna trimmer for maximum output. DO NOT readjust oscillator trimmer.
- (g) Repeat above procedure for more accurate adjustments.
- (h) Connect the signal generator output lead through a 250 ohm carbon resistor to the antenna lead of the receiver. Turn band switch to S.W. position, open gang condenser all the way, and turn volume on full.
- (i) Set signal generator to 18.3 megacycles.
- (j) Adjust S.W. oscillator trimmer for maximum output.
- (k) Set signal generator to 18 megacycles.
- (l) Tune in 18 mc. signal with manual control, then adjust the S.W. antenna trimmer condenser for maximum output.

Check to see that receiver is aligned on the fundamental and not the image frequency. Increase signal generator output approximately 10 times and tune in image frequency (2 x 455 kc. + fundamental) which will be approximately 910 kilocycles less than 18 mc. as indicated by the dial calibrations (17.1 mc.). If correctly aligned, the image will come in as stated but will be much weaker than the fundamental.

The special police band in some models covering 2.3 to 2.5 mc. has no adjustments but can be checked by using a .0001 mf. condenser in series with the signal generator output lead, turning band switch to POL. position, set signal generator to 2.5 mc. and then tune in generator signal, which should come in with the dial pointer near the end of that band.

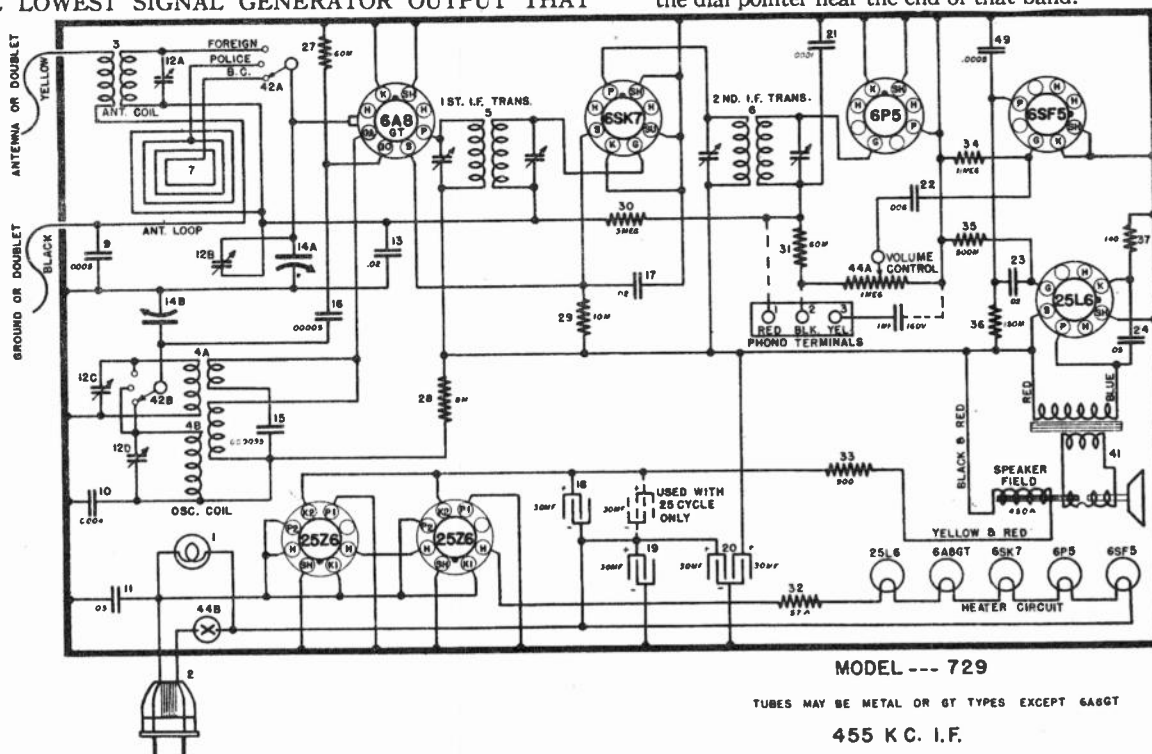


FIG. 1-C—WIRING DIAGRAM—MODEL 729 (MECH. P. B. LOOP)

MODEL 729

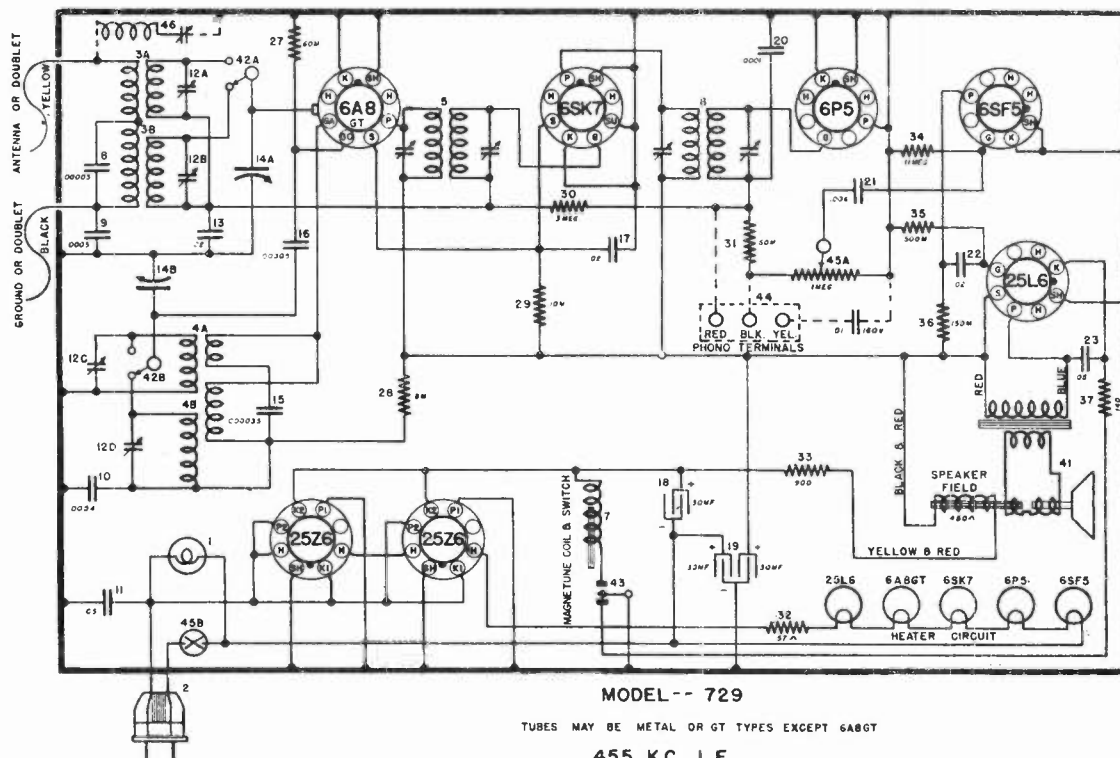


FIG. 1-A—WIRING DIAGRAM—MODEL 729 (MAGNETUNE)

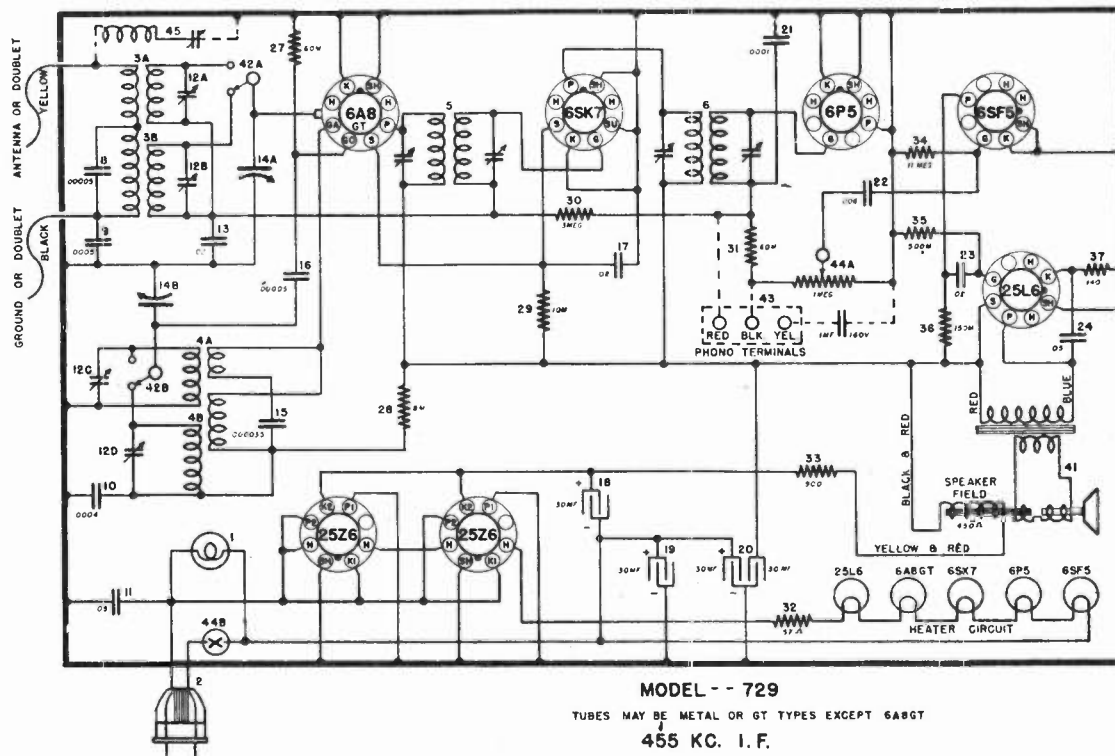


FIG. 1-B—WIRING DIAGRAM—MODEL 729 (MECH. P. B.—TWO BAND)

PARTS LIST—MODEL 729

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —47977	Dial Light Bulb, 110 Volt		—46685	Cardboard Ring
	W —47946	Dial Light Bracket Assembly	41	281-BL-7-"K"	Speaker, Spec. 5-IV-2
	W —48169	Dial Light Cover		—47166	V. C. and Cone Assembly
2	B —45769A	Power Cord and Plug		—47170	Field Coil, 450 Ohms 60 M. A.
3	G214—32000	Antenna Coil, Foreign		—47171	Output Transformer
4A	G206—32002	Oscillator Coil } Broadcast		—47169	Cardboard Ring
4B			42	—49312A	Band Change Switch
5	G221—32004	1st I-F. Transformer Assembly	43	G41—26719	Phono Terminal Board (Mech. P. B., No Loop)
6	G188—32004	2nd I-F. Transformer Assembly	43	G8—47866	Solenoid Switch (Magnetune only)
7	G6—47673	Loop Antenna	44A		Volume Control, 1 Megohm
7	G2—47909	Solenoid Coil Assembly	44B		Power Switch
9	G3—34002	Condenser, .0005 Mf. Molded	44	G41—26719	Phono Terminal Board (Magnetune only)
10	G18—34002	Condenser, .0004 Mf. Molded	45A		Volume Control, 1 Megohm } (Magnetune only)
11	W —45782B	Condenser, .05 Mf. 120 Volts Paper	45B		Power Switch
12A		Antenna, Foreign	45	G193—32004	Wave Trap (Mech. P. B., No Loop)
12B		Antenna, B. C.	46	G193—32004	Wave Trap (Magnetune only)
12C		Oscillator, Foreign	46	G3—34002	Condenser, .0005 Mf. Molded
12D		Oscillator, B. C.	49	—47969	Drive Shaft
	W —41247A	Trimmer Condenser	W	—43592B	Drive Shaft Bracket
	W —47574	Spacers, (2 Req.) (4 Sect. Trimmer)	G20	—41582	Drive Cord, 42 3/4"
	W —45780	Condenser, .02 Mf. 160 Volts Paper	W	—50590	Drive Cord Spring
13		2 Sect. Var. Cond. } Antenna Section	W	—46290	Cord Clamp (3 Req.)
14A	G80—33001	Oscillator Section	G30	—41582	Guide Cord, 9 1/4"
14B			W	—46848	Guide Cord Spring
	MG18—47860	Riveted Mtg. Bracket, R. H.		—9CA	Cabinet
	MG18—47860	Riveted Mtg. Bracket, L. H.		—9CB	Cabinet, Ivory
	MG20—47860	Idler Support Bracket		—9CE	Cabinet, Red
	W —47875	Dial Back Face		—9CF	Cabinet, Blue
	G8—48762	Push Button Unit Assembly		—9CG	Cabinet, Tan
	G12—43564	Pulley and Hub Assembly		—9CC	Cabinet, Brown
	W —23877	No. 8—32 x 3/16" Set Screw (2 Req.) (Pulley and Hub Assy.)		—48110	Carton (9GA, 9GB, 9GE, 9GF, 9GG)
	G31—47880	Rocker Plate Assembly		—48142	Carton (9GC)
	G32—47880	Riveted Key Assembly (5 Req.)		—46953	Knob (2 Req.) (9GA)
	W —45646B	Adjusting Clip (1 Req.)		—44552	Knob (2 Req.) (9GB, 9GE, 9GF, 9GG)
	W —50583B	Adjusting Clip (4 Req.)		—48165	Knob (2 Req.) (9GC)
	W —47877A	Station Setting Screw (5 Req.)		—48729B	Push Buttons (9GA, 9GC)
	W —50325A	Key Retaining Screw (5 Req.)		—48772A	Push Buttons (9GB, 9GE, 9GF, 9GG)
	W —50547	Key Plate		—48734	Call Letter Sheet
	—31388	No. 8—32 x 3/16" W. Hd. Screw (2 Req.) (Key Plate)		—48747	Call Letter Cover
	—38056	No. 8—32 x 1/8" Headless Set Screws (5 Req.)		—49315	Instruction Booklet
	W —48104	Spring Washer (5 Req.)		—49284	Short Wave Instructions
	W —48322E	Spring Support Bracket		—49321	Knob (Band Change) (9GA, 9GC)
	—2046	No. 8 Int. Shakeproof Washer (2 Req.)		—49322	Knob (Band Change) (9GB, 9GE, 9GF, 9GG)
	W —48826	Key Return Spring (5 Req.)		—47765	Escutcheon (9GA, 9GC)
	W —48827	Push Button Shaft (5 Req.)		—48144	Escutcheon (9GB, 9GE, 9GF, 9GG)
	W —47995B	Dial Light Mounting Bracket	W	—48167B	Escutcheon Mtg. Bracket (9GC)
	W —47930A	Dial Pointer	W	—48018	Glass Reflector
	—49307	Dial Glass (9GA, 9GB, 9GE, 9GF, 9GG)		—48135	No. 3—56 x 1/4" Rd. Hd. Mach. Screw (2 Req.) (Escutcheon 9GA, 9GB, 9GE, 9GF, 9GG)
	—49308	Dial Glass (9GC)		S —80	No. 4 x 3/8" Rd. Hd. Wood Screw (4 Req.) (9GC Escutcheon Bracket)
15	G13—34002	Condenser, .00003 Mf. Molded		—49318	Cabinet Back (9CA)
16	G5—34002	Condenser, .00005 Mf. Molded		—49319	Cabinet Back (9GB, 9GE, 9GF, 9GG)
17	W —45780	Condenser, .02 Mf. 160 Volts Paper	W	—49320A	Cabinet Back (9GC)
18	W —47702A	Condenser, .30 Mf. 150 Volts Elect.		—46242	No. 8 Rubber Bottom Mach. Screw (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GG)
19	W —47702A	Condenser, .30 Mf. 150 Volts Elect.		—20881	No. 6 x 3/8" Rd. Hd. Wood Screw (6 Req.) (9GC Cabinet Back)
19	W —47892	Condenser, .30-30 Ohms 135 Volts Elect. (Magnetune only)	W	—45020	Flat Washer (4 Req.) (9GC Chassis Mtg.)
20	W —47892	Condenser, .30-30 Ohms 135 Volts Elect.	W	—48744	Shakeproof Washer (4 Req.) (9GB, 9GE, 9GF, 9GC Chassis Mtg.)
20	G2—34002	Condenser, .0001 Mf. Molded (Magnetune only)	W	—48758	Trimount Stud (4 Req.)
21	G2—34002	Condenser, .0001 Mf. Molded		—48900	No. 8—32 x 3/4" H. H. Mach. Screw (4 Req.) (9GC Chassis Mtg.)
21	W —45810B	Condenser, .006 Mf. 160 Volts Paper (Magnetune only)	W	—48837	Light Deflector Felt (9GC)
22	W —45810B	Condenser, .006 Mf. 160 Volts Paper	MG36—47861	Push Button and Hinge Assembly (9GA, 9GC)	
22	W —45780B	Condenser, .02 Mf. 160 Volts Paper (Magnetune only)	MG37—47861	Push Button and Hinge Assembly (9GB, 9GE, 9GF, 9GG)	
23	W —45780B	Condenser, .02 Mf. 160 Volts Paper	MG21—47860	Riveted Hinge Assembly	
23	W —45817B	Condenser, .05 Mf. 160 Volts Paper (Magnetune only)	W	—48730B	Insert (5 Req.) (P. B. and Hinge Assembly)
24	W —45817B	Condenser, .05 Mf. 160 Volts Paper	W	—47947A	Push Button Hinge
27	—21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.	W	—48017C	Push Button Hinge Spring
27	—37905	Resistor, 8,000 Ohms 1/4 Watt Ins.	O —6	Flat Washer (3 Req.)	
28	—36317	Resistor, 10,000 Ohms 1/4 Watt Ins.		—49271	Felt Strip (9GB, 9GE, 9GF, 9GG)
29	—26577	Resistor, 3 Megohms 1/4 Watt Carb.		—47767B	Push Buttons (5 Req.) (Magnetune only)
30	—21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.	W	—48016B	Push Button Rod (Magnetune only)
31	W —47857	Resistor, 57 Ohms 7 Watt Flex.	MG31—47892	Instruction Envelope Assy.	
32	W —47873	Resistor, 900 Ohms 7 Watt Flex.			
33	W —46497	Resistor, 11 Megohms 1/4 Watt Carb.			
34	—23785	Resistor, 500,000 Ohms 1/4 Watt Carb.			
35	—23403	Resistor, 150,000 Ohms 1/4 Watt Carb.			
36	W —47512	Resistor, 140 Ohms 3/4 Watt Flex.			
37	281-BL-7-"B"	Speaker, Spec. 55-WA-43			
41	—47290	V. C. and Cone Assembly			
	—46686	Field Coil, 450 Ohms 60 M. A.			
	—46687	Output Transformer			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	K	S	Go	Ca
6A8	Osc.-Mod.	6.3	280	3.2	130	-5 to -30	160
6K7	1st. I. F. Amp.	6.3	280	3.2	110	—	—
6K7	2nd. I. F. Amp.	6.3	280	8.0	130	—	—
6H6	Det. & AVC	6.3	—	—	—	—	—
6C5	1st. A. F. Amp.	6.3	155	6.5	—	—	—
6N6	Output	6.3	220	—	P <sub>2</sub> 280	—	—
5Z4	Rectifier	5.0	—	330	—	—	—

Power Output Approximately 6 Watts.  
 Power Consumption Approximately 80 Watts at 117.5 Volts  
 Voltage Drop Across Speaker Field Approximately 50 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the two plates of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the High Frequency Band.
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust both trimmers located on the top of the

3rd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(g) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(h) Check operations (e), (f) and (g) for more accurate adjustments.

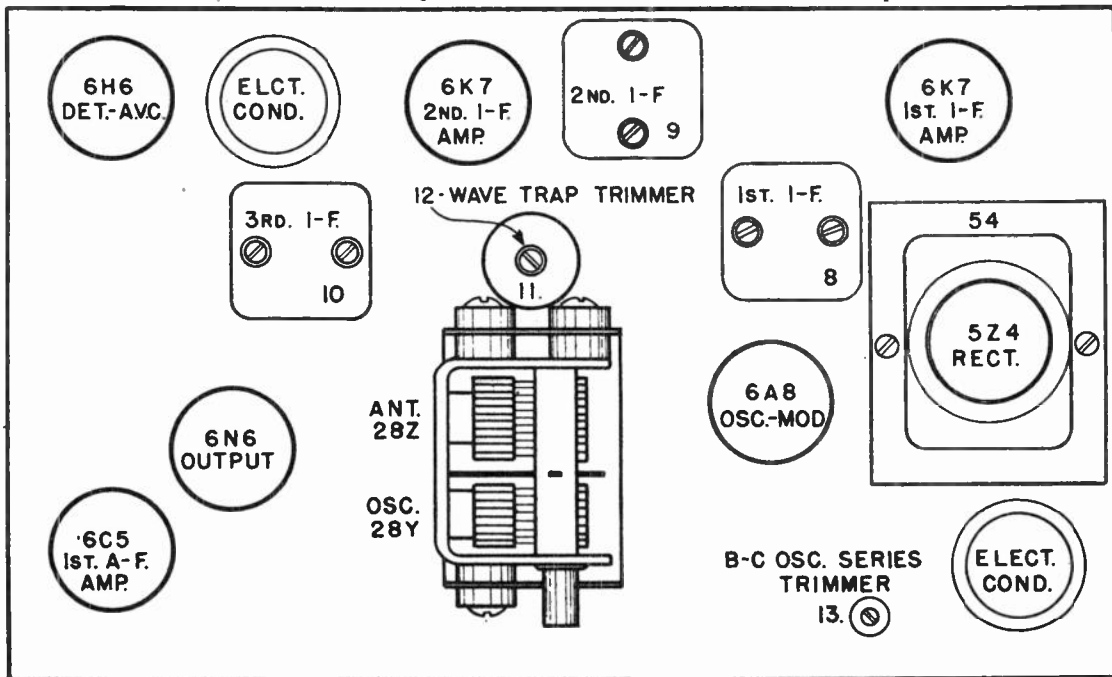
ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

Aligning R-F Amplifier.

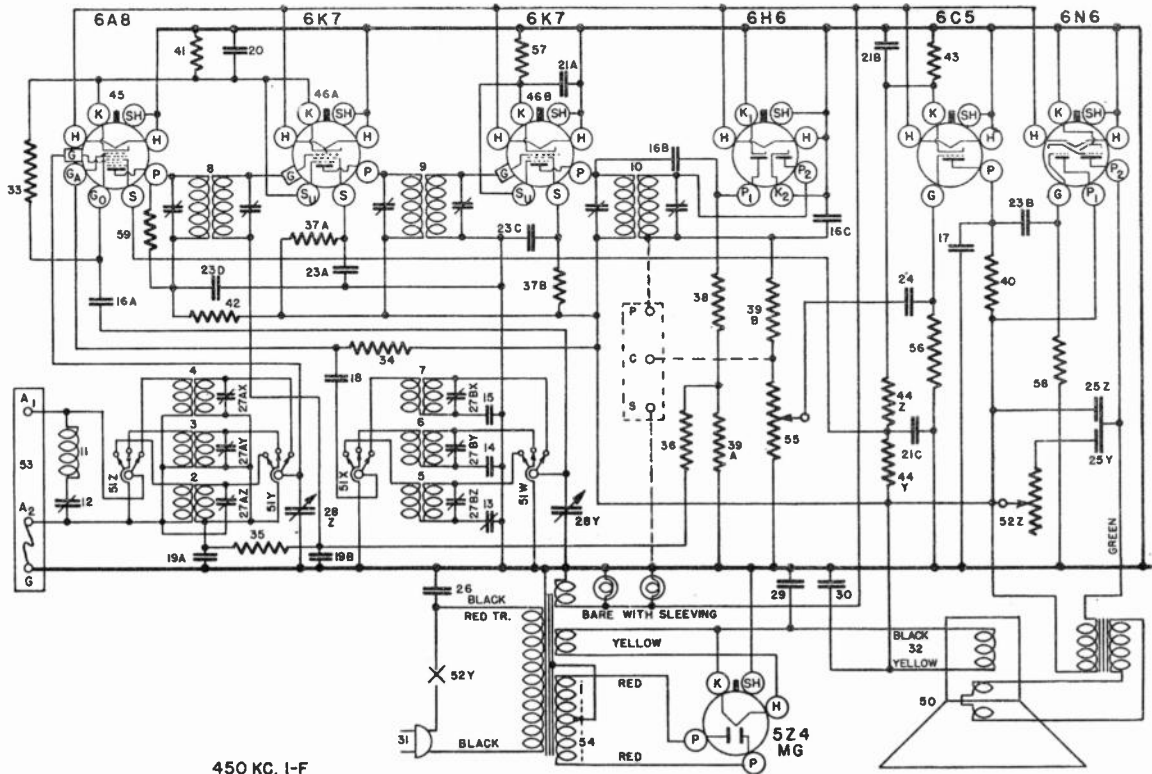
When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .0002 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the ad-



MODEL 736



450 KC. I-F

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name Value	Item No.	Part No.	Name Value
1AB	W -37992	Bulb, Dial Light 6-8V.	29	W -41582	Cable, Drive
2	G3 -37965	Socket Assy. Dial Light	30	W -36057	Condenser, 35 Mf. 400 V. Elect.
3	G119-32000	Coil, Ant. 540-1800 Kc.	31	B -33906A	Condenser, 40 Mf. 300 V. Elect.
4	G121-32000	Coil, Ant. 1800-6000 Kc.	32	G3 -35696	Cord & Plug, Power
5	G112-32002	Coil, Osc. 540-1800 Kc.	33	-40757	Cable, Speaker
6	G111-32002	Coil, Osc. 1800-6000 Kc.	34	-23616	Resistor, 50,000 Ohm. 1/4 W.
7	G113-32002	Coil, Osc. 6000-18000 Kc.	35	-21454	Resistor, 15,000 Ohm. 1 W.
8	G125-32004	Coil, Assy. 1st. I. F. 450 Kc.	36	-37245	Resistor, 1. Megohm 1/4 W.
9	G124-32004	Coil, Assy. 2nd. I. F. 450 Kc.	37A	-21875	Resistor, 1.5 Megohm 1/4 W.
10	G100-32004	Coil, Assy. 3rd. I. F. 450 Kc.	37B	-21875	Resistor, 100,000 Ohm. 1/4 W.
11	G1 -32006	Coil, Assy. Wave Trap	38	-35930	Resistor, 100,000 Ohm. 1/4 W.
12	LW -37235A	Coil, Only Wave Trap	39A	-21455	Resistor, 200,000 Ohm. 1/4 W.
13	W -37232	Condenser, Wave Trap Trimmer	39B	-21455	Resistor, 300,000 Ohm. 1/4 W.
14	G5 -31927	Shield Assy. Wave Trap	40	-37768	Resistor, 6500 Ohm. 1/4 W.
15	-40769	Condenser, 400 to 500 Mmf., B. C. Osc. Series Trimmer	41	W -21964	Resistor, 165 Ohm. 1/2 W. Flex.
16A	G7 -34007	Condenser, 1750 Mmf., Pol. Osc. Series, Fixed	42	-23013	Resistor, 2000 Ohm. 1 W. Flex.
16B	G8 -34007	Condenser, 4350 Mmf., H. F. Osc. Series, Fixed	43	W -22514	Resistor, 750 Ohm. 1/4 W. Flex.
17	G2 -34002	Condenser, .0001 Mf. Molded	44Z	W -32301	Resistor, 10000 Ohm
18	G2 -34002	Condenser, .0001 Mf. Molded	44Y	W -32301	Resistor, 15000 Ohm
19	G1 -32006	Condenser, .00025 Mf. Molded	45	G156-36400	Socket Type, 6A8
20	W -35139	Condenser, .004 Mf. 400 V. Tub	46A	G151-36400	Socket Type, 6K7
21A	W -35936	Condenser, .05 Mf. 200 V. Tub.	46B	G151-36400	Socket Type, 6K7
21B	W -35936	Condenser, .05 Mf. 200 V. Tub.	47	G155-36400	Socket Type, 6H6
21C	W -28621	Condenser, .02 Mf. 200 V. Tub.	48	G152-36400	Socket Type, 6C5
22A	W -28621	Condenser, .02 Mf. 200 V. Tub.	49	G165-36400	Socket Type, 6N6
23A	W -30488	Condenser, .02 Mf. 400 V. Tub.	50	-632CJ3	Speaker, "M", Spec. 1-D-610
23B	W -30488	Condenser, .02 Mf. 400 V. Tub.	-42879		Cone Assy., For Above Spk.
23C	W -30488	Condenser, .02 Mf. 400 V. Tub.	-42880		Field Coil, For Above Spk.
23D	W -30488	Condenser, .02 Mf. 400 V. Tub.	-42881		Output Trans., For Above Spk.
24	W -35758	Condenser, .008 Mf. 400 V. Tub.	-40770A		Switch, Band Selector
25Z	W -31062	Condenser, .004 Mf. 400 V. Tub.	51		Tone Control 100,000 Ohm.
26	W -30805	Condenser, .05 Mf. 400 V. Tub.	52Z		Line Switch
27A	W -35951	Condenser, .01 Mf. 400 V. Tub.	52Y		Terminal Board, Ant. & Gnd.
27B	W -35951	Condenser, .01 Mf. 400 V. Tub.	53	G27 -26719	Transformer, Power 110 V. 60 Cy.
28	G21 -33001	Condenser, 3Sect. Trimmer, Osc. Shunt	54	-41978A	Volume Control 1 Megohm.
MG27	-42390	Dial Drive Assy.	55	-37967	Resistor, 3 Megohm, 1/4 W.
C	-42420	Dial Glass (Calibrated)	56	-36688	Resistor, 500 Ohm. 1/2 W. Flex.
W	-41844	Drive Unit	57	W -28106	Resistor, 500 Ohm. 1/2 W. Flex.
W	-42684	Dial Hand	58	-36322	Resistor, 500,000 Ohm. 1/4 W.
W	-40486	Screw, Hand Mtg.	59	W -35928	Resistor, 60,000 Ohm. 1/4 W.
				W -42408	Escutcheon Ring Assy.
				-41880	Dial Lens
				-41881	Lens Retaining Ring
				-7670	Screws, (2 Req.) Escutcheon Mtg.
				W -37339	Knob, (3 Req.)
				W -40192B	Knob, (1 Req.)
				W -36117	Foot, (4 Req.) Rubber Mtg.
				6-T	Cabinet

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Go	Ga
6U7G	Rf Amplifier	6.3	244	103	0	Neg	—	—
6A8G	Modulator	6.3	282	103	0	Neg	Neg	103
6J7G	Oscillator	6.3	140	—	0	Neg	—	—
6U7G	IF Amplifier	6.3	244	103	0	Neg	—	—
6Q7G	Detector, AVC & 1st AF Amplifier	6.3	100	—	0	Neg	—	—
6N6G	Output	6.3	266	282	0	0	—	—
5Y3G	Rectifier	4.8	—	—	282	—	—	—

Power consumption approximately 76 watts at 117.5 volts.  
Power output approximately 5.3 watts.  
Voltage drop across speaker field 82 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch for the Medium Wave Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Long Wave and Medium Wave Bands a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Bands a 400 ohm carbon resistor should be used in place of the condenser.

**SIGNAL INPUT FREQUENCIES**

Band	Min. Capacity	Shunt Alignment	Series Alignment		
			Ant.	R. F.	Osc.
L Wave	380 Kc.	350 Kc.			150 Kc.
M Wave	1650 Kc.	1400 Kc.			
S W-I	13 Mc.	12 Mc.	6 Mc.	6 Mc.	
S W-II	24 Mc.	22 Mc.	11 Mc.	11 Mc.	

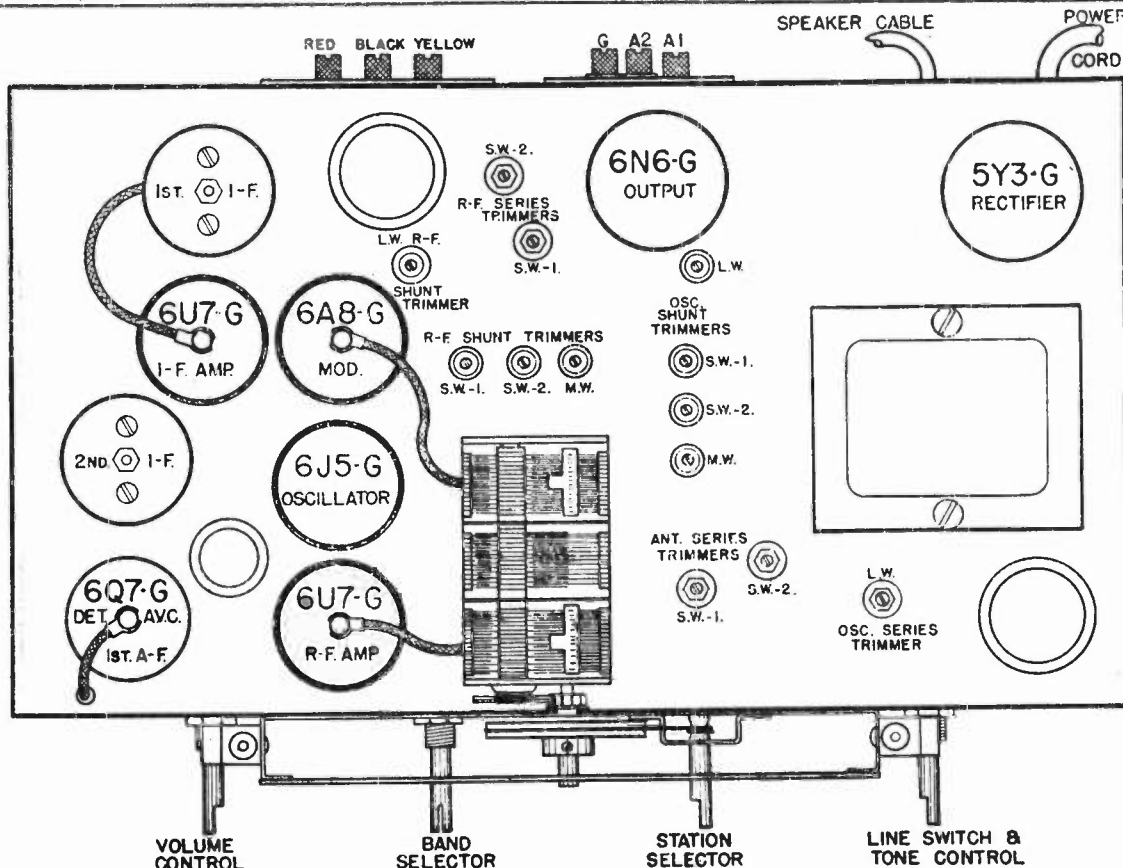
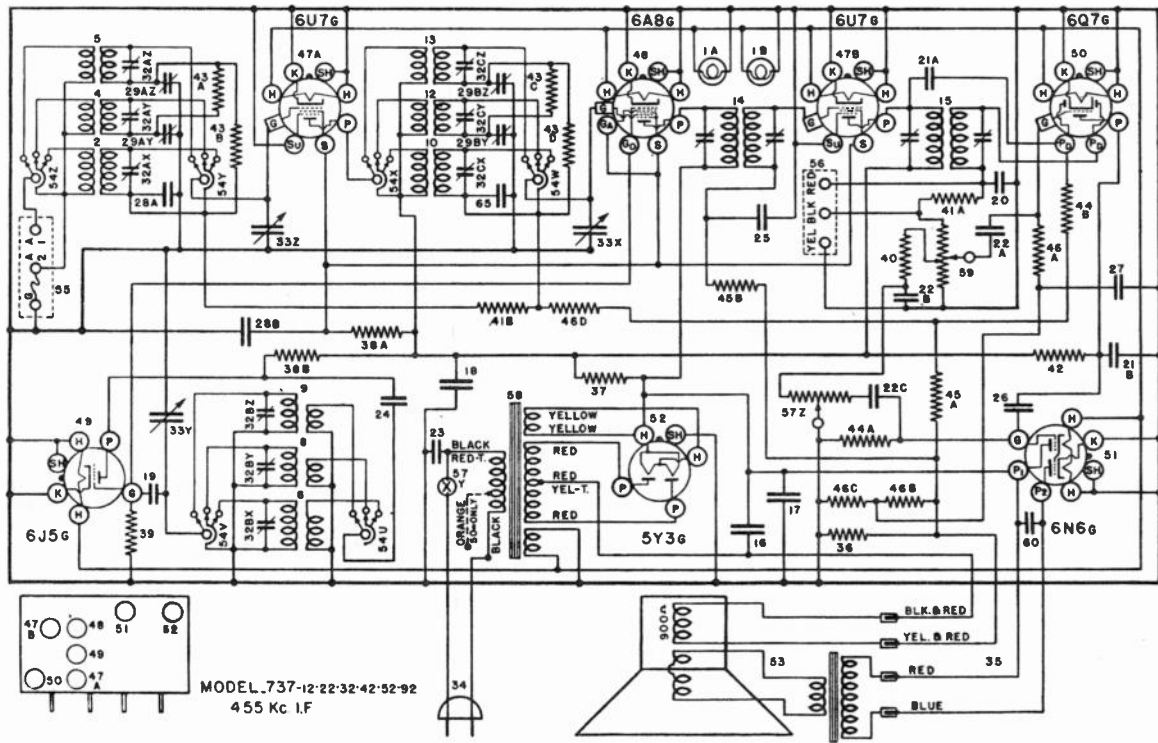
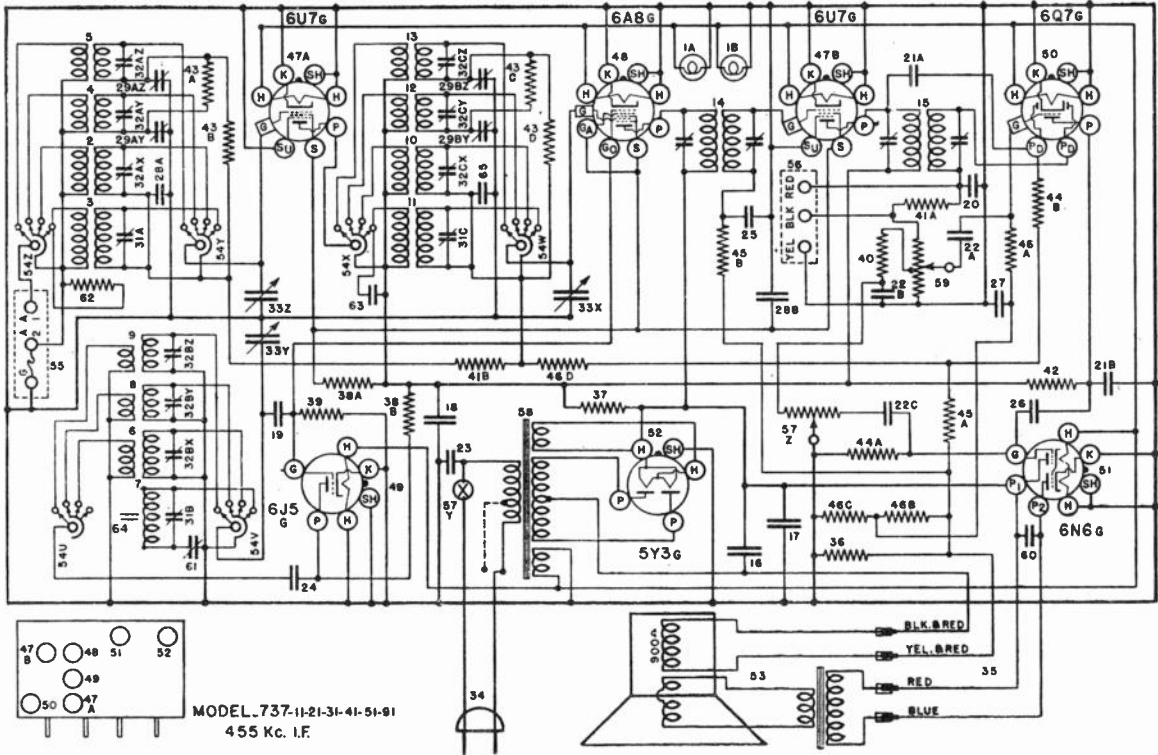


Fig. 2—Top View—Model 737  
401



MODEL 737



PARTS LIST—MODEL 737

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —43567	Dial Light Bulb, 6-8 V.	51	G165—36400	Socket, Type 6N6
	G11 —45798	D. L. Socket Assv.	52	G173—36400	Socket, Type 5Y3
2	G159—32000	Ant. Coil, 180-560 Metres		W —40911	Tube Shield
3	G162—32000	Ant. Coil, 790-2000 Metres (737-1 only)	53	462-BJ-4	Speaker, Spec. No. 1-D-1240 (8-Inch)
4	G161—32000	Ant. Coil, 23-55.6 Metres		—45545	V. C. and Cone Assy.
5	G160—32000	Ant. Coil, 12.5-30 Metres		—45546	Field Coil (900 Ohm—85 M. A.)
6	G132—32002	Osc. Coil, 180-560 Metres		—45547	Output Trans.
7	G165—32002	Osc. Coil, 790-2000 Metres (737-1 only)		—43675	Cardboard Cone Mtg. Ring
8	G163—32002	Osc. Coil, 23-55.6 Metres		662-CJ-4	Speaker Spec. No. 1-D-1242 (12-Inch)
9	G164—32002	Osc. Coil, 12.5-30 Metres		—45548	V. C. and Cone Assy.
10	G98 —32001	R-F. Coil, 180-560 Metres		—45549	Field Coil (900 Ohm—85 M. A.)
11	G101—32001	R-F. Coil, 790-2000 Metres (737-1 only)		—45550	Output Trans.
12	G99 —32001	R-F. Coil, 23-55.6 Metres		—43680	Cardboard Cone Mtg. Ring
13	G100—32001	R-F. Coil, 12.5-30 Metres	54	—45227	Band Change Switch (737-1)
14	G175—32004	1st I-F. Assy., 455 Kc.		—45213	Band Change Switch (737-2)
15	G176—32004	2nd I-F. Assy., 455 Kc.	55	G27 —26719	Ant. and Gnd. Terminal Assy.
16	W —36055B	Condenser, 35 Mf. 400 V. Electrolytic	56	G36 —26719	Phono Terminal Assy.
17	W —44438A	Condenser, 40 Mf. 300 V. Electrolytic	57Z		{Tone Control (1 Meg.)
18	W —44012	Condenser, 16 Mf. 250 V. Electrolytic	57Y		{Line Switch
	W —44119	Fibre Washer (Used on Item 16)	58		Power Trans., 60 Cy.—110 V.
	W —44120	Fibre Washer Extruded (Used on Item 16)			Power Trans., 50 Cy.—110V.
19	G13 —34002	Condenser, .000035 Mf. Molded			Power Trans., 50 Cy.—220 V.
20	G2 —34002	Condenser, .0001 Mf. Molded			Power Trans., 25 Cy.—110 V.
21A	G1 —34002	Condenser, .00025 Mf. Molded			Power Trans., 25 Cy.—220 V.
21B	G1 —34002	Condenser, .00025 Mf. Molded	59	—44773	Power Trans., Universal
22A	W —28619	Condenser, .006 Mf. 200 V. Tubular	60	W —35139	Vol. Control (1 Meg. Tapped)
22B	W —28619	Condenser, .006 Mf. 200 V. Tubular	61	—45203	Condenser, .004 Mf. 400 V. Tubular
22C	W —28619	Condenser, .006 Mf. 200 V. Tubular			L. W. Osc. Series Trimmer Cond. (737-1 only)
23	W —30805	Condenser, .01 Mf. 400 V. Tubular	62	—24814	Resistor, 7,000 Ohm ½W. Carb. (737-1 only)
24	W —32378	Condenser, .01 Mf. 400 V. Tubular			Condenser, .000175 Mf. Molded (737-1 only)
25	W —28621	Condenser, .02 Mf. 200 V. Tubular	63	G11 —34002	Condenser, .000025 Mf. Molded (737-1 only)
26	W —23615	Condenser, .05 Mf. 400 V. Tubular			Condenser, .000025 Mf. Molded (737-1 only)
27	W —27216	Condenser, .05 Mf. 200 V. Tubular	64	G6 —34002	Condenser, .02 Mf. 160 V.
28A	W —35936	Condenser, .05 Mf. 200 V. Tubular	65	W —36541	Cabinet—Table Model (737-1)
28B	W —35936	Condenser, .05 Mf. 200 V. Tubular		7GH	Cabinet—Table Model (737-2)
29AZ		{Ant. S. W.-1 Series Trimmer		7GG	Cabinet—Console Model (737-1)
29AY		{Ant. S. W.-2 Series Trimmer		7TH	Cabinet—Console Model (737-2)
29BZ		{R-F. S. W.-1 Series Trimmer		7TG	Cabinet—Console Model (737-2)
29BY		{R-F. S. W.-2 Series Trimmer		C	Escutcheon and Lens
31	W —44516	Single Shunt Trimmer Cond. (737-1 only)		W —36117	Rubber Mtg. Foot
32	W —35951A	3 Section Shunt Trimmer Assv.		G1 —42790	Phono Motor Board Assy., 50 Cy.—110 V.
33	G61 —33002	3 Section Var. Tuning Gang Cond.		G2 —42790	Phono Motor Board Assy., 25 Cy.—110 V.
	MG93—45126	Dial Face and Plate Assy. (737-1)		G3 —42790	Phono Motor Board Assy., 50 Cy.—220 V.
	MG94—45126	Dial Face and Plate Assy. (737-2)		G4 —42790	Phono Motor Board Assy., 25 Cy.—220 V.
	C —45244B	Face Mtg. Bracket		G5 —42790	Phono Motor Board Assy., 60 Cy.—110 V.
	G7 —43564	Pulley and Hub Assy.		—43530	Phono Motor, 50 Cy.—110 V.
	W —45334A	Pointer		—43531	Phono Motor, 25 Cy.—110 V.
	W —40486	Screw Pointer Mtg.		—43532	Phono Motor, 50 Cy.—220 V.
	W —43542B	Drive Shaft Bracket		—43533	Phono Motor, 25 Cy.—220 V.
	W —45360A	Drive Shaft		—43534	Phono Motor, 60 Cy.—110 V.
	W —43549	Shaft Retaining Ring		G6 —42790	Phono Motor Board Assy., 40 Cy.—110 V.
	—41582	Drive Cord (21 Inches)		—43659	Phono Motor, 40 Cy.—110 V.
	—43561	Cord Tension Spring		—43658	Pickup Arm Assy.
34	B —33906A	Power Cord and Plug		W —33502	Needle Cup
35	G2 —45378	4 Lead Speaker Cable		W —33503	Needle Cup Lid
36	W —23012A	Resistor, 40 Ohms ¼W. Flex.		W —45392	Wall Tap
37	W —45212A	Resistor, 1,400 Ohms 1½W. Flex.		B —33906A	Power Cord and Plug (Phono)
38A	—5370A	Resistor, 20,000 Ohms, 1W. Carb.		W —27266A	Phono-Radio Switch
38B	—5370A	Resistor, 20,000 Ohms 1W. Carb.		W —20757A	Switch Plate (Phono-Radio)
39	—35928	Resistor, 60,000 Ohms ¼W. Ins.		W —45248	Knob (Band Switch) (7TH and 7TG Cab.)
40	—36319	Resistor, 75,000 Ohms ¼W. Ins.		W —45375	Knob (Tone Control) (7TH and 7TG Cab.)
41A	—35600	Resistor, 100,000 Ohms ¼W. Ins.		W —45247	Knob (Vol. Cont. and Station Selector) (7TH and 7TG Cab.)
41B	—35600	Resistor, 100,000 Ohms ¼W. Ins.		W —44381B	Knob (Vol. Cont. and Station Selector) (7G1 and 7GG Cab.)
42	—34020	Resistor, 250,000 Ohms ¼W. Carb.		W —45389	Knob (Tone Control) (7GH and 7GGC Cab.)
43A	—35601	Resistor, 300,000 Ohms ¼W. Ins.		W —45376	Knob (Band Switch) (7GH and 7GC Cab.)
43B	—35601	Resistor, 300,000 Ohms ¼W. Ins.			
43C	—35601	Resistor, 300,000 Ohms ¼W. Ins.			
43D	—35601	Resistor, 300,000 Ohms ¼W. Ins.			
44A	—23785	Resistor, 500,000 Ohms ¼W. Carb.			
44B	—23785	Resistor, 500,000 Ohms ¼W. Carb.			
45A	—35602	Resistor, 1 Megohm ¼W. Ins.			
45B	—35602	Resistor, 1 Megohm ¼W. Ins.			
46A	—37245	Resistor, 1.5 Megohm ¼W. Carb.			
46B	—37245	Resistor, 1.5 Megohm ¼W. Carb.			
46C	—37245	Resistor, 1.5 Megohm ¼W. Carb.			
46D	—37245	Resistor, 1.5 Megohm ¼W. Carb.			
47	G171—36400	Socket, Type 6U7			
48	G156—36400	Socket, Type 6A8			
49	G186—36400	Socket, Type 6J5			
50	G160—36400	Socket, Type 6Q7			

SOCKET VOLTAGE READINGS AT 117.5 VOLT LINE

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	123	80	-11	123	H	—
6SK7	I-F. Amplifier	—	H	—	Grid	—	80	H	123
6P5	Diode	—	H	—	—	Grid	—	H	—
6SF5	1st Audio	—	—	Grid	V.C.	68	—	H	H
25L6	Output	—	H	115	123	Grid	—	H	115
2-25Z6	Rectifier	—	H	117.5 A.C.	220	—	—	H	115

Drop across speaker field 35 volts, 739 -65 volts on 7739.  
 Drop across Item 33—72 volts.  
 Maximum power output 4.3 watts @ 125 volts line.  
 Power consumption @ 117.5 volts line—63 watts.  
 H=heater.

**CIRCUIT DESCRIPTION**

Model 7739 uses a tapped volume control for variable level bass compensation. Models of either chassis in the later series are equipped with terminals for connecting a phonograph attachment.

Models J-739 and J-7739 are the same as models 739 and 7739 except for the following:

Model J-739 differs from Model 739 in that the negative or ground return is isolated from the chassis by a .2 mf.—160 volt condenser. For alignment procedure use same as outlined for Model 739. The voltage readings are the same as given for Model 739 except the MEASUREMENTS SHOULD BE TAKEN BETWEEN SOCKET CONTACTS AND THE LOW SIDE OF THE VOLUME CONTROL.

Model J-7739 is the same as Model 7739 except that Model J-7739 has a 1 to 1 isolating power transformer. For alignment procedure and socket voltages use same as given for the Model 739 etc.

**ALIGNMENT PROCEDURE**

All circuits have been accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

NOTE: The circuit of this receiver is such that if the signal generator has one side of the line connected to the case or ground side and the generator and receiver are plugged into the same line, serious damage may result to either or both instruments. ALWAYS ISOLATE SIGNAL GENERATOR GROUND LEAD BY INSERTING A .01 mf. OR SMALLER CONDENSER IN SERIES WITH THE LEAD BEFORE CONNECTING TO THE CHASSIS.

**CONNECTING OUTPUT METER**

One terminal of the output meter should be connected to the plate (No. 3 pin) and the other terminal to the screen (No. 4 pin) of the 25L6GT output tube. Be sure the meter is protected from D. C. by connecting a .25 mf. condenser in series with one of the leads.

**1.—I-F Amplifier Alignment**

(a) Connect the output lead of the signal generator through a .02 mf. condenser to the top (GRID) cap of the 6A8GT tube (leaving the tubes grid connector in place) or to the antenna lead.

(b) Connect the ground lead of the signal generator through a .01 mf. (or smaller, .001 mf.) condenser to the chassis.

(c) Adjust station selector so that the rotor plates

of the gang are completely disengaged, turn band to B. C. position and turn the volume control to maximum.

(d) Set the signal generator to 455 kc.

(e) Adjust the trimmer condensers on the 2nd I-F transformer for maximum output.

(f) Adjust the trimmer condensers on the 1st I-F transformer for maximum output.

(g) Repeat (e) and (f) for more accurate adjustments. IN ORDER TO PREVENT A. V. C. ACTION, ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2.—Aligning R-F Amplifier**

(a) Connect the signal generator output lead through a .0001 mf. condenser to the antenna lead (YELLOW OR BLUE) and the generator ground lead to the Black lead of the receiver. Turn band switch to B. C. band, open gang all the way and turn volume control on full and tone control to treble position.

(b) Set signal generator to 1725 kilocycles. (Generator should be set to 1620 kilocycles for Model 7739).

(c) Adjust B. C. oscillator trimmer for maximum output (receiver does not have to tune through this signal).

(d) Set signal generator to 1400 kilocycles.

(e) Tune in generator signal on receiver by means of manual tuning knob.

(f) Adjust B. C. antenna trimmer for maximum output. DO NOT readjust oscillator trimmer.

(g) Repeat above procedure for more accurate adjustments.

(h) Set signal generator to 600 kilocycles.

(i) Tune in 600 kilocycle signal on receiver. While rocking the gang back and forth adjust the B. C. oscillator series condenser for maximum output.

(j) Repeat operations (d), (e) and (f) to correct any change caused by series alignment.

(k) Connect the signal generator output lead through a 250 ohm carbon resistor to the antenna lead of the receiver. Turn band switch to S. W. position, open gang condenser all the way, and turn volume on full, etc.

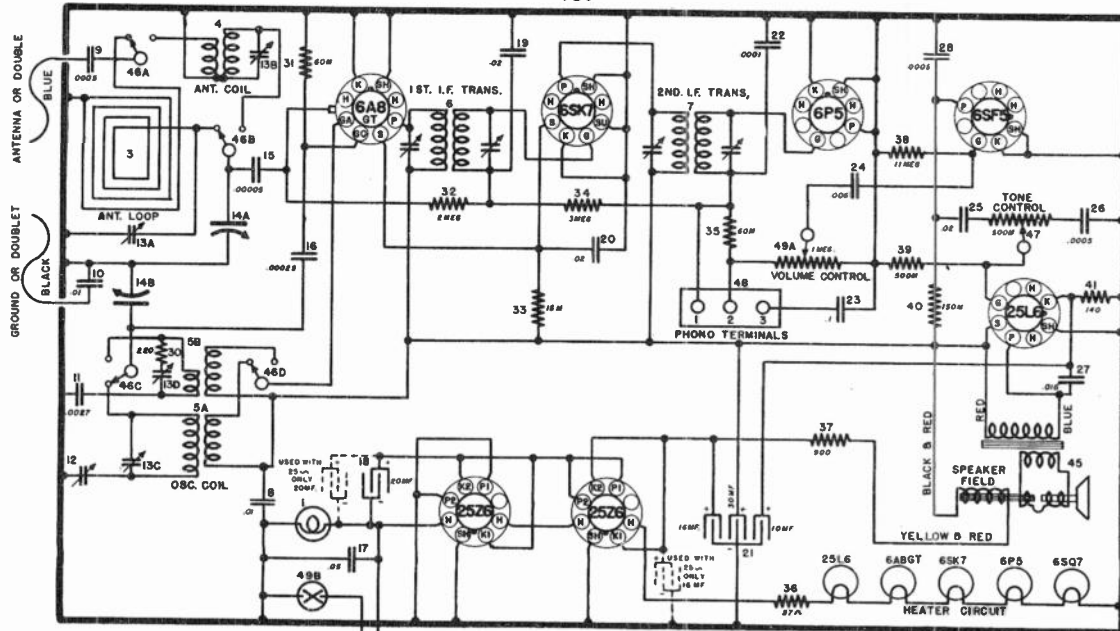
(l) Set signal generator to 18.3 megacycles.

(m) Adjust S. W. oscillator trimmer for maximum output.

(n) Set signal generator to 18 megacycles.

(o) Tune in 18 mc. signal with manual control, then adjust the S. W. antenna trimmer condenser for maximum output.

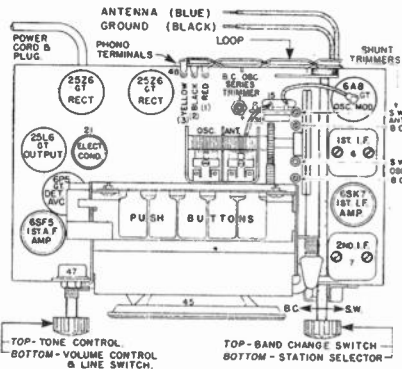
MODEL 739



MODEL --- 739

TUBES MAY BE METAL OR GT TYPES EXCEPT 6AB

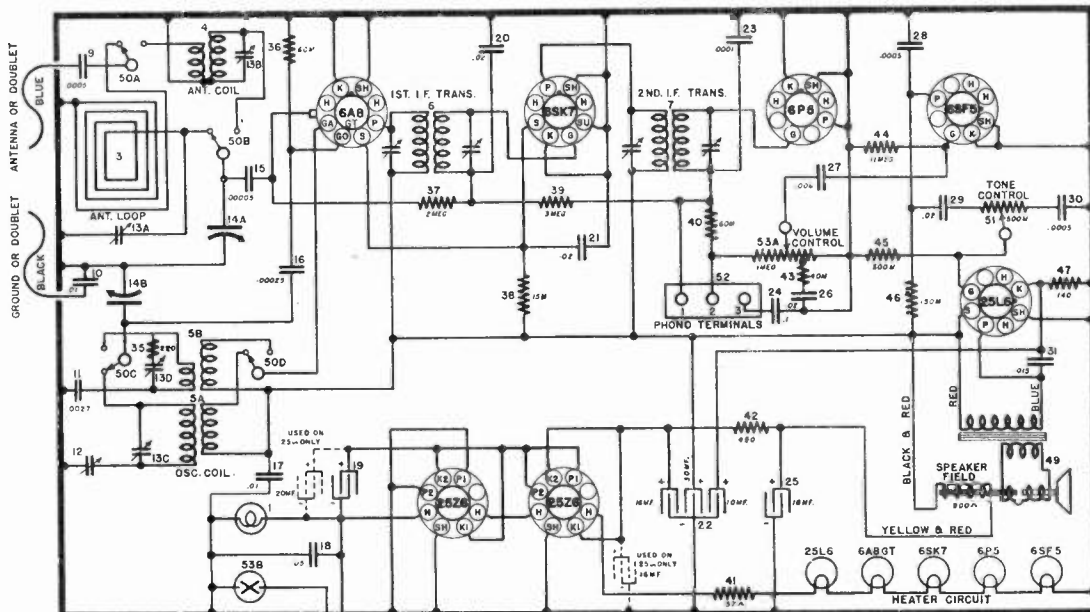
455 KC. I.F.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—47977	Dial Light—110 Volt	48	G51	Phono Terminal Strip
	—47946	Dial Light Socket	49	—48170	Line Switch and Vol. Control—1 Meg.
	—47995	Bracket—D. L. Mounting	G4	—48762	Push Button Unit (With Gang Cond.)
	—48969	Cover—Dial Light	G32	—47880	P. B. Riveter Key Assy.
2	—45769	Power Cord and Plug		—47877	Screw—Key Adjusting
3	G7	Loop Antenna		—48827	Shaft—P. B. Screw Extension
4	G209—32000	Antenna Coil—S. W.		—38066	Headless Set Screw—Ext. Shaft Mtg.
5	G217—32002	Oscillator Coils		—50325	“C” Retaining Washer—Ext. Shaft
		B. C. Osc. Coil		—48101	Spring Washer—Ext. Shaft Friction
6	G221—32004	1st I-F. Transformer		—48322	Bracket—Key Return Spring Support
7	G188—32004	2nd I-F. Transformer		—48326	Spring—Key Return
8	—23191	Condenser, .01 Mf. 400 V.	G31	—47880	Rocker Bar and Gear Assy.
9	G3	Condenser, .0005 Mf. Mica		—50561	Screw—Rocker Bar Bearing
10	—23191	Condenser, .01 Mf. 400 V.		—49084	Glass Dial
11	G11	Condenser, .00270 Mf. Fixed S. W.		—47875	Dial Face Background
		Osc. Series		—47930	Pointer (Dial Hand)
12	—38998	B. C. Osc. Series Trimmer Condenser	G12	—43564	Drive Shaft
13	—41247	4 Section Shunt Trimmer Assy.		—48100	Bracket—Shaft Mtg.
14	G87	2 Section Var. Tuning Condenser	G20	—41582	Drive Cord (42 3/4")
15	G5	Condenser, .00005 Mf. Mica		—50590	Spring—Cord Tension
16	G1	Condenser, .00025 Mf. Mica		—46290	Clamp—Drive Cord
17	—45782	Condenser, .05 Mf. 120 V.	G30	—41582	Guide Cord (9 1/4")
18	—49047	Condenser, 20 Mf. 135 V. Elect.		—46848	Spring—Guide Cord Tension
19	—45780	Condenser, .02 Mf. 160 V.	MG20	—47680	Idler Pulley and Bracket Assy.
20	—45780	Condenser, .02 Mf. 160 V.		—46729	Socket—8 Prong Octal
21	—49014	Condenser, 16-30-10 Mf. 250-135-10 V.	G2	—44470	Toggle Arm (On Switch)
22	G2	Condenser, .0001 Mf. Mica	G6	—44470	Toggle Arm (On Ext. Shaft)
23	—50105	Condenser, .1 Mf. 160 V.		—47998	Extension Shaft—Band Switch
24	—45810	Condenser, .006 Mf. 160 V.	9GD	—48979	Cabinet
25	—45780	Condenser, .02 Mf. 160 V.		—20861	Back—Cabinet
26	G3	Condenser, .0005 Mf. Mica		—48103	Screws—Back Mounting
27	—30251	Condenser, .015 Mf. 400 V.	MG32	—47861	Shipping Carton
28	—34002	Condenser, .0005 Mf. Mica		—48018	Escutcheon and Reflector Assy.
29	None			—48167	Reflector—Call Letter
30	—38977	Resistor, 220 Ohms 1/2 W.		—48167	Bracket—Escutcheon Mtg. (2)
31	—35928	Resistor, 60,000 Ohms 1/2 W.	S	—80	Screw—Escutcheon Bracket Mtg.
32	—35927	Resistor, 2 Megohms 1/2 W.	MG36	—47861	Push Button and Hinge Assy.
33	—36318	Resistor, 15,000 Ohms 1/2 W.	MG21	—47860	Riv. P. B. Hinge Assy.
34	—26577	Resistor, 3 Megohms 1/2 W.		—48016	Screw—P. B. to Hinge Mtg.
35	—21237	Resistor, 6,000 Ohms 1/2 W.		—48729	Push Button
36	—47857	Resistor, 57 Ohms 7 W.		—48730	Insert—Push Button
37	—47873	Resistor, 900 Ohms 7 W.		—48837	Light Deflector Felt
38	—46497	Resistor, 11 Megohms 1/2 W.		—46953	Knob
39	—23785	Resistor, 500,000 Ohms 1/2 W.		—48900	Screw—Chassis to Cab. Mtg.
40	—23403	Resistor, 150,000 Ohms 1/2 W.		—45020	Washer—Chassis to Cab. Mtg.
41	—47512	Resistor, 140 Ohms 3/4 W.		—49089	Instruction Booklet
42	None			—49352	Phono Instruction
43	None			—49284	Short Wave Station Chart
44	None			—48734	Station Call Letters
45	281-EI-7	Speaker		—48747	Celluloid Covers—Call Letter
	—48830	Bracket—Speaker Mounting	MG31	—47966	Instruction Envelope Assy.
	—48829	Bracket—Speaker Support			
	—48828	Plate—Speaker Mounting			
46	—47993	Band Switch (Without Loop)			
	—49058	Band Switch (With Loop)			
47	—48181	Tone Control Switch			

MODEL 7739



MODEL --- 7739

TUBES MAY BE METAL OR GT TYPES EXCEPT 6AB

455 K.C. I. F.

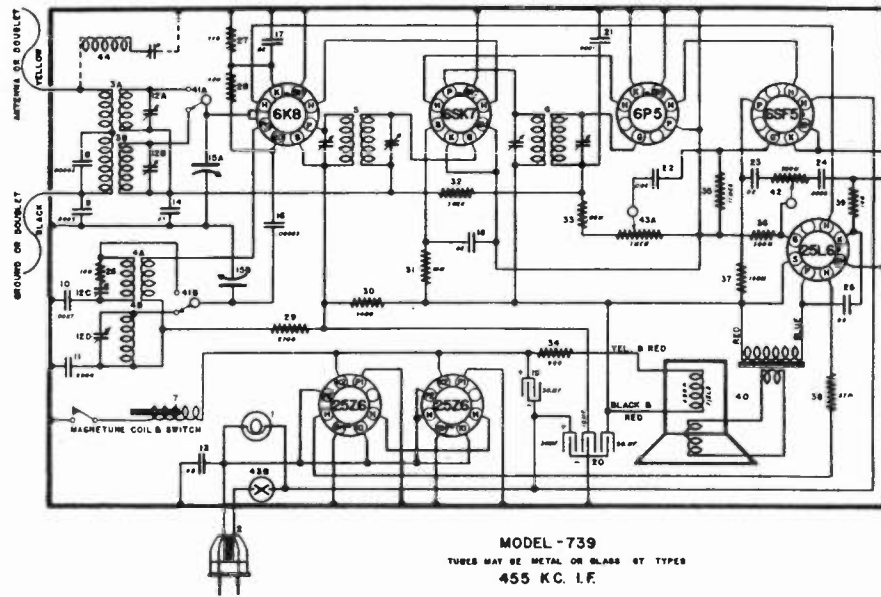
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description		
1	-47977	Dial Light—110 Volt	52	G51	Phone Terminal Board		
	-17946	Socket—Dial Light	53	-19338	Tune Switch and Vol. Control—1 Mec.		
	-18105	Bracket—Dial Light Mtg.	G4	-18762	Push Button Tuning Unit (With Gang		
2	-81359	Cover—Dial Light			Condenser Mechanical		
3	-45769	Power Cord and Plug	G32	-17890	Push Button Tuning Unit only		
4	G5	48821			P. B. Riveted Key Assy.		
5	G208	33000			Screw—Key Adjusting		
	G216	33002			Shaft—P. B. Screw Extension		
		Oscillator Coils			Headless Set Screw—Ext. Shaft		
		A—B. C. Band			"C" Washer—Ext. Shaft Retaining		
		B—S. W. Band			Spring Washer—Ext. Shaft Friction		
6	G221	37004			Bracket—Key Return Spring Support		
7	G188	32004			Spring—Key Return		
8	None				Rocker Bar and Gear Assy.		
9	G3	-34002			Screw—Rocker Bar Bearing		
10	-21911	Condenser, .0005 Mf. Mica	G31	-17890	L. H. Bracket—P. B. Unit Mtg.		
11	-34005	Condenser, .01 Mf. 400 V.			Class Dial		
12	-38998	Condenser, R. C. (Osc. Series Trimmer)	MG12	-17980	Bracket—Dial Glass Support		
13	-11247	Condenser, 4 Section Shunt Trimmer	MG20	17960	Idler Bracket Assy.		
14	G87	-33001			L. H. Clip—Dial Glass Mtg.		
15	G5	-34002			R. H. Clip—Dial Glass Mtg.		
16	G1	-34002			Cushion—Dial Glass		
17	-21911	Condenser, .01 Mf. 400 V.	G12	-13564	Pulley and Hub Assy.		
18	-45782	Condenser, .05 Mf. 120 V.			Pointer (Dial Hand)		
19	-47017	Condenser, 20 Mf. 135 V. Elect.			Drive Shaft—Manual		
20	-15780	Condenser, .02 Mf. 160 V.			Bracket—Drive Shaft Mtg.		
21	-45784	Condenser, .02 Mf. 160 V.	G27	-11582	Drive Cord (42")		
22	-17011	Condenser, 16-30-10 Mf. Elect.	G31	-41582	Guide Cord (14") Pointer Bottom		
23	-34002	Condenser, .0001 Mf. Mica	G20	-11582	Guide Cord (9 1/2") Pointer Top		
24	-50105	Condenser, 1 Mf. 160 V.			Spring—Drive Cord Tension		
25	-46128	Condenser, 16 Mf. 250 V.			Spring—Guide Cord Tension (Bottom)		
26	W	-15780			Clamp—Drive Cord		
27	-15810	Condenser, .006 Mf. 160 V.	G6	-41170	Toggle Arm Assy. (Mts. on Ext. Shaft)		
28	G3	-31002			G2	-41170	Toggle Arm Assy. (Mts. on B.C. Switch)
29	-45780	Condenser, .02 Mf. 160 V.				Extension Shaft—B. C. Switch	
30	G3	-31002				"C" Washer—Shaft Retaining (Ext.)	
31	-30251	Condenser, .015 Mf. 400 V.				Light Deflector Felt	
32	None					Cabinet	
33	None					Cabinet Back	
34	-38977	Resistor, 220 Ohms 1/2 W.				Thumb Screw—Back Mtg.	
35	-35928	Resistor, 0.000 Ohms 1/4 W.				Shipping Carton	
36	-35927	Resistor, 2 Megohms 1/4 W.				Escutcheon	
37	-26318	Resistor, 15,000 Ohms 1/4 W.				Screws—Escutcheon Mtg.	
38	-26317	Resistor, 3 Megohms 1/4 W.	MG36	-17861	P. B. and Hinge Assy.		
39	-21277	Resistor, 60,000 Ohms 1/4 W.	MG21	-17860	Hinge Assy. (P. B.)		
40	-17857	Resistor, 57 Ohms 7 W.				Push Button	
41	-48031	Resistor, 450 Ohms 5 W.				Inscr.—Push Button	
42	-21453	Resistor, 10,000 Ohms 1/4 W.				Rod—Push Button to Hinge Mtg.	
43	-16197	Resistor, 11 Megohms 1/2 W.				Knob (4)	
44	-23785	Resistor, 500,000 Ohms 1/2 W.				Call Letter Sheet	
45	-23785	Resistor, 500,000 Ohms 1/2 W.				Celluloid Cover (Call Letter)	
46	-23103	Resistor, 150,000 Ohms 1/2 W.	MG25	-17981	Instruction Envelope Assy.		
47	-17512	Resistor, 140 Ohms 3/4 W.				Antenna Beard Assy.	
48	None					Instruction Booklet	
49	195-BP-10"R"	Speaker, Mfg. Spec. No. P-5729				Phono Instruction	
50	-48616	V. C. and Cone Assy.				Short Wave Station Chart	
51	-43978	Cardboard Ring—Cone Mtg.				Chassis Mtg. Screw	
	-48625	Output Transformer				Chassis Mtg. Washer	
	-48626	Field Coil					
	-49058	Band Change Switch					
	-49337	Tone Control Switch					

MISCELLANEOUS PARTS FOR MODELS WITH ELECTRICAL TUNING UNIT

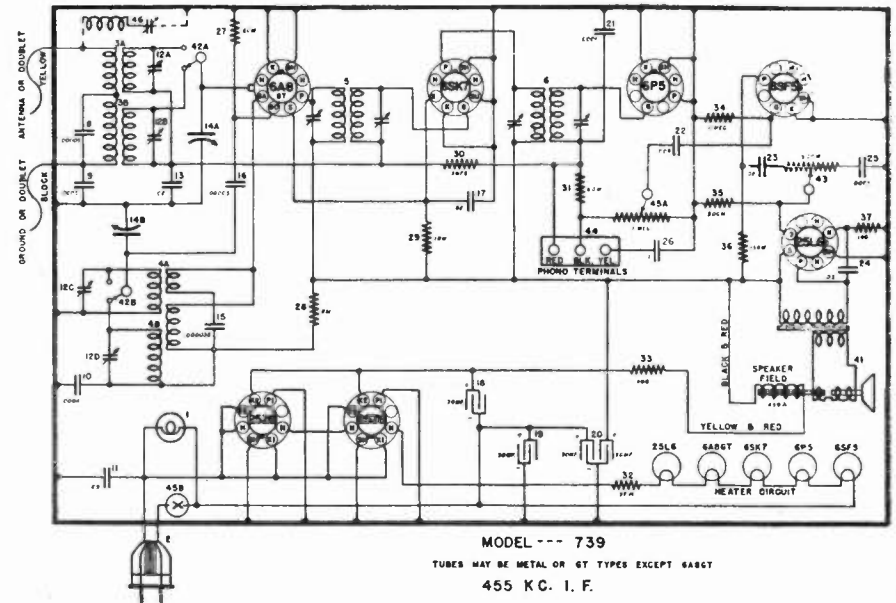
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
G1	-47880	Magnetune Push Button Tuning Unit		-18016	Rod—P. B. to Hinge Mtg.
G32	-17890	Riveted Key Assy.		-48131	Light Deflector Felt
	-17878	Push Button Shaft—(Adj. Screw Ext.)		-48113	Glass Dial—Model 739
	-50325	"C" Washer—P. B. Shaft Retaining		-17994	Glass Dial—Model 7739 (7 1/2" Wide)
	-48104	Spring Washer—P. B. Shaft Friction		-17911A	Glass Dial—Model 7739 (8" Wide)
	-38056	Set Screw—P. B. Shaft		-48202	Instructions—Model 7739
	-17877	Adjusting Screw (Station Setting)		-48191	Instructions—Model 739
	-47953	Spring—Key Return		-18165	Knobs—Model 739
	-48654	Solenoid Rocker Plate		-17960	Knobs—Model 7739
G31	-47880	Rocker Bar and Gear Assy.	G8	-17866	P. B. Contact Switch (Magnetune)
	-50561	Screw—Rocker Bearings	G2	-47866	Blade Contact (Magnetune)
MG27	-47880	Riveted Armature Assy.	G3	-17866	Bottom Contact (Magnetune)
G1	-47909	Solenoid Coil Assy.	G7	-47866	Top Contact (Magnetune)
MG21	-47860	Riveted P. B. Hinge Assy.		-44635	Switch Blade Spring
	-47767	Push Button			



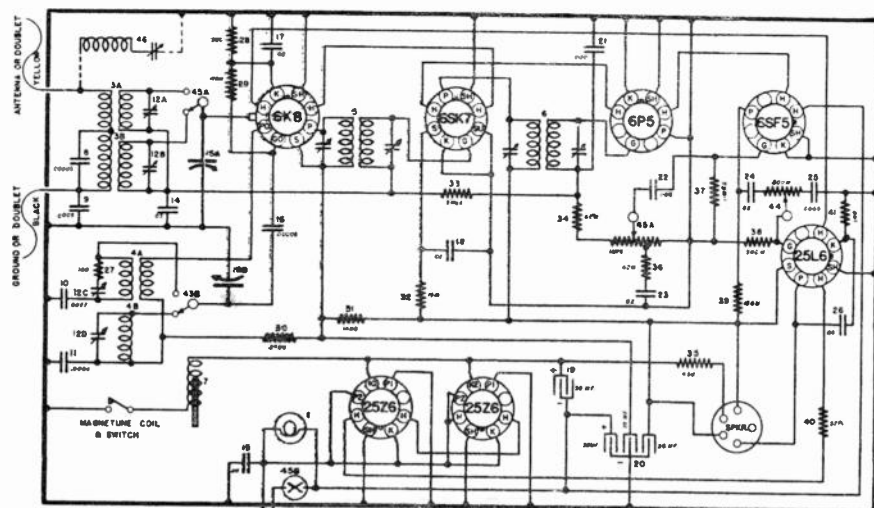
"MAGNETUNE"—MODEL 739—WIRING DIAGRAM  
PARTS LIST

1	W	-47977	Bulb, Dial Light 110 V
2	B	-45769A	Cable and Plug
3A	G201-32000	Coil, S. W. Antenna	
3B		Coil, B. C. Antenna	
4A	G202-32002	Coil, S. W. Oscillator	
4B		Coil, B. C. Oscillator	
5	G229-32004	1st I-F. Transformer	
6	G188-32004	2nd I-F. Transformer	
7	G2	-47909	Coil, Solenoid
8	G5	-34002	Condenser, .00005 Mf. Mica
9	G3	-34002	Condenser, .0005 Mf. Mica
10	G11	-34005	Condenser, .0027 Mf. Mica
11	G18	-34002	Condenser, .0004 Mf. Mica
12	W	-41247A	Condenser Shunt Trimmer Assy.
13	W	-45782B	Condenser, .05 Mf. 120 V. Paper
14	W	-45936	Condenser, .05 Mf. 200 V. Paper
15A	G80	-33001	Var. Condenser, Antenna Section
15B			Var. Condenser, Oscillator Section
16	G5	-34002	Condenser, .00005 Mf. Mica
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper
18	W	-45780B	Condenser, .02 Mf. 160 V. Paper
19	W	-47702	Condenser, 30 Mf. 125 V. Elect.
20	W	-47809	Cond., 30-30-10 Mf. 135 V. Elect.
21	G2	-34002	Condenser, .0001 Mf. Mica
22	W	-45810B	Condenser, .006 Mf. 160 V. Paper
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper
24	G3	-34002	Condenser, .0005 Mf. Mica
25	W	-45817B	Condenser, .05 Mf. 160 V. Paper
26		-48293	Resistor, 100 Ohms ½ W. Carb.
27		-38977	Resistor, 220 Ohms ½ W. W. W.
28		-21453	Resistor, 40,000 Ohms ½ W. Carb.
29		-31093	Resistor, 2,700 Ohms ½ W. Carb.
30	W	-27503	Resistor, 1,400 Ohms ¾ W. Flex.
31		-22831	Resistor, 15,000 Ohms ½ W. Carb.
32		-26577	Resistor, 3 Megohms ½ W. Carb.
33		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
34	W	-47873	Resistor, 900 Ohms 7W. Flex.
35		-46497	Resistor, 11 Megohms ½ W. Carb.
36		-23785	Resistor, 500,000 Ohms ½ W. Carb.
37		-23403	Resistor, 150,000 Ohms ½ W. Carb.
38	W	-47857	Resistor, 57 Ohms 7W. Flex.
39	W	-47512	Resistor, 140 Ohms ¾ W. Flex.
40	B	-46774A	Speaker, 281 Bl.7
41A		-47993	Switch, Band Chg.
41B			Switch, Band Chg.
42		-48181B	Tone Control, 500M.
43A		-48170	Volume Control, 1 Meg.
43B			Switch, Power
44	G193-32004		Wave Trap



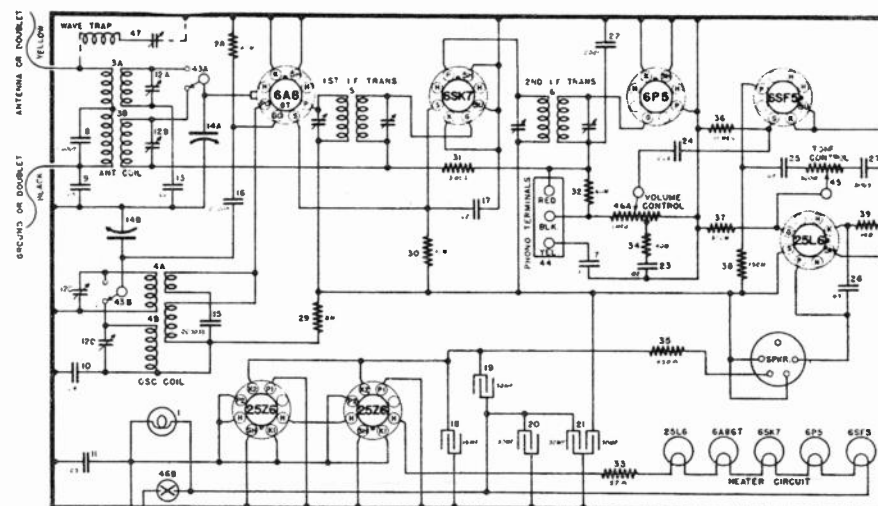
MECHANICAL PUSH BUTTON (NO LOOP)—MODEL 739—WIRING DIAGRAM  
PARTS LIST

1	W	-47977	Bulb, Dial Light 110 V.
2	B	-45769A	Cord and Plug, Power
3A	G201-32000	Coil, S. W. Antenna	
3B		Coil, B. C. Antenna	
4A	G206-32002	Coil, S. W. Oscillator	
4B		Coil, B. C. Oscillator	
5	G221-32004	1st I-F. Transformer	
6	G188-32004	2nd I-F. Transformer	
7			
8	G5	-34002	Condenser, .00005 Mf. Mica
9	G3	-34002	Condenser, .0005 Mf. Mica
10	G18	-34002	Condenser, .0004 Mf. Mica
11	W	-45782B	Condenser, .05 Mf. 120 V. Paper
12	W	-41247A	Condenser Shunt Trimmer Assy.
13	W	-45780B	Condenser, .02 Mf. 160 V. Paper
14A	G80	-33001	Var. Condenser, Antenna Section
14B			Var. Condenser, Oscillator Section
15	G13	-34002	Condenser, .00035 Mf. Mica
16	G5	-34002	Condenser, .00005 Mf. Mica
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper
18	W	-47702	Condenser, 30 Mf. 150 V. Elect.
19	W	-47702	Condenser, 30 Mf. 150 V. Elect.
20	W	-47892	Condenser, 30-30 Mf. 135 V. Elect.
21	G2	-34002	Condenser, .0001 Mf. Mica
22	W	-45810B	Condenser, .006 Mf. 160 V. Paper
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper
24	W	-45817B	Condenser, .05 Mf. 160 V. Paper
25	G3	-34002	Condenser, .0005 Mf. Mica
26	W	-50105	Condenser, .1 Mf. 160 V. Paper
27		-21237	Resistor, 60,000 Ohms ½ W. Carb.
28		-37905	Resistor, 8,000 Ohms ½ W. Ins.
29		-36317	Resistor, 10,000 Ohms ½ W. Ins.
30		-26577	Resistor, 3 Megohms ½ W. Carb.
31		-21237	Resistor, 60,000 Ohms ½ W. Carb.
32	W	-47857	Resistor, 57 Ohms 7W. Flex.
33	W	-47873	Resistor, 900 Ohms 7W. Flex.
34		-46497	Resistor, 11 Megohms ½ W. Carb.
35		-23785	Resistor, 500,000 Ohms ½ W. Carb.
36		-23403	Resistor, 150,000 Ohms ½ W. Carb.
37	W	-47512	Resistor, 140 Ohms ¾ W. Flex.
38			
39			
40			
41	B	-46774A	Speaker, 281-BL-7
42A		-47993	Switch, Band Chg.
42B			Switch, Band Chg.
43		-48181B	Switch, Tone Control, ½ Meg.
44	G41	-26719	Terminal Board Phono.
45A		-48170	Volume Control, 1 Meg.
45B			Switch, Power
46	G193-32004		Wave Trap



TUBES MAY BE METAL OR GLASS GT TYPES  
455 KC. I.F.

"MAGNETUNE"—MODEL 7739—WIRING DIAGRAM  
PARTS LIST



MODEL --- 7739  
TUBES MAY BE METAL OR GT TYPES EXCEPT 6AB7  
455 KC. I.F.

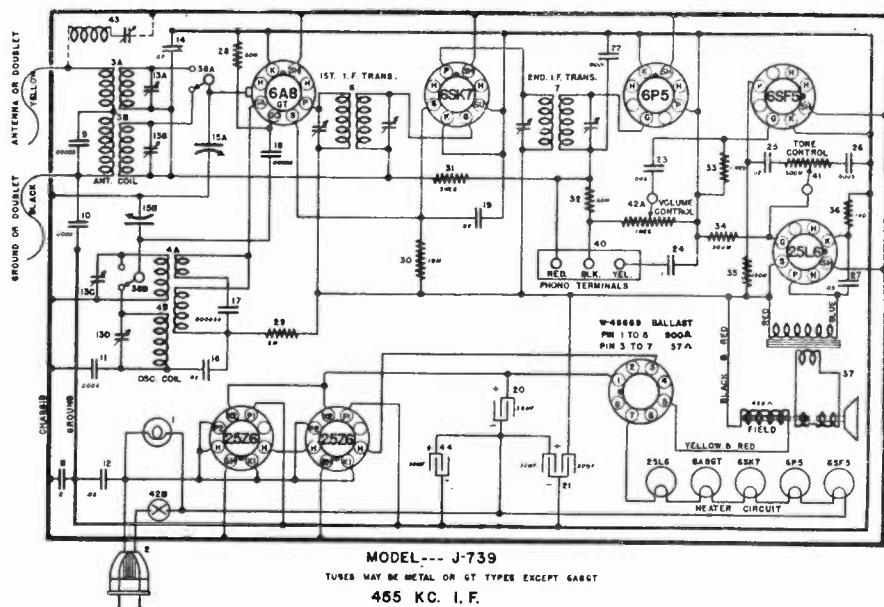
MECHANICAL PUSH BUTTON (NO LOOP)—MODEL 7739—WIRING DIAGRAM  
PARTS LIST

408

1	W	-47977	Bulb, Dial Light 110 V.	24	W	-45780B	Condenser, .02 Mf. 160 V. Paper
2	B	-45769A	Cable and Plug, Power	25	G:3	-34002	Condenser, .0005 Mf. Mica
3A	G201-32000	Coil, S. W. Antenna	26	W	-45817B	Condenser, .05 Mf. 160 V. Paper	
3B		Coil, B. C. Antenna	27		-48293	Resistor, 100 Ohms ½ W. Carb.	
4A	G202-32002	Coil, S. W. Oscillator	28		-38977	Resistor, 220 Ohms ½ W. W. W.	
4B		Coil, B. C. Oscillator	29		-21453	Resistor, 40,000 Ohms ½ W. Carb.	
5	G229-32004	1st I-F. Transformer	30		-31093	Resistor, 2,700 Ohms ½ W. Carb.	
6	G188-32004	2nd I-F. Transformer	31	W	-27503	Resistor, 1,400 Ohms ½ W. Flex.	
7	G2	-47909	Coil, Solenoid	32		-22831	Resistor, 15,000 Ohms ½ W. Carb.
8	G5	-34002	Condenser, .00005 Mf. Mica	33		-26577	Resistor, 3 Megohms ½ W. Carb.
9	G3	-34002	Condenser, .0005 Mf. Mica	34		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
10	G11	-34005	Condenser, .0027 Mf. Mica	35	W	-48031	Resistor, 450 Ohms ½ W. Flex.
11	G18	-34002	Condenser, .0004 Mf. Mica	36		-21453	Resistor, 40,000 Ohms ½ W. Carb.
12	W	-41247A	Condenser Shunt Trimmer Assy.	37		-46497	Resistor, 11 Megohms ½ W. Carb.
13	W	-45782B	Condenser, .05 Mf. 120 V. Paper	38		-23785	Resistor, 500,000 Ohms ½ W. Carb.
14	W	-35936	Condenser, .05 Mf. 200 V. Paper	39		-23403	Resistor, 150,000 Ohms ½ W. Carb.
15A	G80	-33001	Var. Condenser, Antenna Section	40	W	-47857	Resistor, 57 Ohms 7 W. Flex.
15B			Var. Condenser, Oscillator Section	41	W	-47512	Resistor, 140 Ohms ½ W. Flex.
16	G5	-34002	Condenser, .00005 Mf. Mica	42	C	-47920	Speaker, 495-BP-10
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper	43A		-47993	Switch, Band Change
18	W	-45780B	Condenser, .02 Mf. 160 V. Paper	43B			Switch, Band Change
19	W	-47702	Condenser, 30 Mf. 125 V. Elect.	44		-48020B	Tone Control, 500M.
20	W	-47809	Cond., 30-30-10 Mf. 135 V. Elect.	45A		-48019	Volume Control, 1 Meg.
21	G2	-34002	Condenser, .0001 Mf. Mica	45B			Switch, Power
22	W	-45810B	Condenser, .006 Mf. 160 V. Paper	46	G193-32004		Wave Trap
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper				

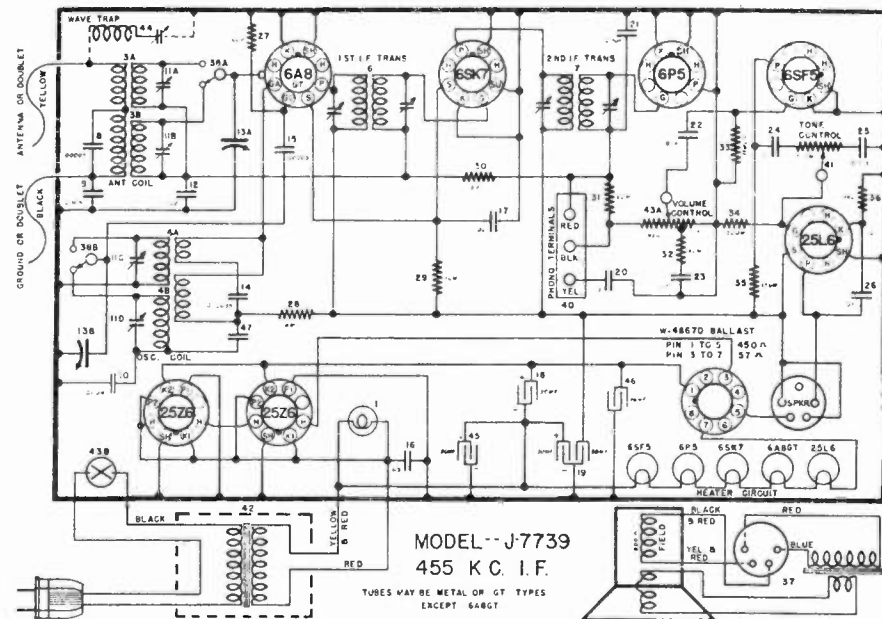
MODEL 7739

1	W	-47977	Bulb, Dial Light 110 V.	24	W	-45810B	Condenser, .006 Mf. 160 V. Paper
2	B	-45769A	Cable and Plug, Power	25	W	-45780B	Condenser, .02 Mf. 160 V. Paper
3A	G201-32000	Coil, S. W. Antenna	26	W	-45817B	Condenser, .05 Mf. 160 V. Paper	
3B		Coil, B. C. Antenna	27	G3	-34002	Condenser, .0005 Mf. Mica	
4A	G206-32002	Coil, S. W. Oscillator	28		-21237A	Resistor, 60,000 Ohms ½ W. Carb.	
4B		Coil, B. C. Oscillator	29		-37905	Resistor, 8,000 Ohms ½ W. Ins.	
5	G221-32004	1st I-F. Transformer	30		-36317	Resistor, 10,000 Ohms ½ W. Ins.	
6	G188-32004	2nd I-F. Transformer	31		-26577	Resistor, 3 Megohms ½ W. Carb.	
7	W	-50105	Condenser, .1 Mf. 160 V. Paper	32		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
8	G5	-34002	Condenser, .00005 Mf. Mica	33	W	-47857	Resistor, 57 Ohms 7 W. Flex.
9	G3	-34002	Condenser, .0005 Mf. Mica	34		-21453	Resistor, 40,000 Ohms ½ W. Carb.
10	G18	-34002	Condenser, .0004 Mf. Mica	35	W	-47873	Resistor, 900 Ohms 7 W. Flex.
11	W	-45782B	Condenser, .05 Mf. 120 V. Paper	36		-46497	Resistor, 11 Megohms ½ W. Carb.
12	W	-41247A	Condenser Shunt Trimmer Assy.	37		-23785	Resistor, 500,000 Ohms ½ W. Carb.
13	W	-45780B	Condenser, .02 Mf. 160 V. Paper	38		-23403	Resistor, 150,000 Ohms ½ W. Carb.
14A	G80	-33001	Var. Condenser, Antenna Section	39	W	-47512	Resistor, 140 Ohms ½ W. Flex.
14B			Var. Condenser, Oscillator Section	40			
15	G13	-34002	Condenser, .000035 Mf. Mica	41			
16	G5	-34002	Condenser, .00005 Mf. Mica	42	C	-47920	Speaker, 495-BP-10
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper	43A		-47993	Switch, Band Chg., Antenna
18	W	-48122	Condenser, 12 Mf. 250 V. Elect.	43B			Switch, Band Chg., Oscillator
19	W	-47702	Condenser, 30 Mf. 150 V. Elect.	44	G41	-26719	Terminal Board, Phono.
20	W	-47702	Condenser, 30 Mf. 50 V. Elect.	45		-48020	Tone Control, 500M.
21	W	-47892	Condenser, 30-30 Mf. 135 V. Elect.	46A		-48019	Volume Control, 1 Meg.
22	G2	-34002	Condenser, .0001 Mf. Mica	46B			Switch, Power
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper	47	G193-32004		Wave Trap



MODEL--- J-739  
TUBES MAY BE METAL OR GT TYPES EXCEPT 6ABGT  
455 KC. I.F.

MODEL J-739—WIRING DIAGRAM  
PARTS LIST



MODEL--- J-7739  
455 KC. I.F.  
TUBES MAY BE METAL OR GT TYPES EXCEPT 6ABGT

MODEL J7739—WIRING DIAGRAM  
PARTS LIST

MODELS J739, J7739

1	-47977	Dial Lamp, 110 Volt	24	-50105	Condenser, .1 Mf. 160 V.
2	-45769	Power Cord and Plug	25	-45780	Condenser, .02 Mf. 160 V.
3	G201-32000	Antenna Coils Assy.	26	G3 -34002	Condenser, .0005 Mf. Mica
		A—Short Wave Antenna Coil	27	-45817	Condenser, .05 Mf. 160 V.
		B—Broadcast Antenna Coil	28	-21237	Resistor, 60,000 Ohms 1/2 W.
4	G208-32002	Oscillator Coils Assy.	29	-37905	Resistor, 8,000 Ohms 1/4 W.
		A—Short Wave Oscillator Coil	30	-36317	Resistor, 10,000 Ohms 1/4 W.
		B—Broadcast Oscillator Coil	31	-26577	Resistor, 3 Megohms 1/2 W.
5	None		32	-21237	Resistor, 60,000 Ohms 1/2 W.
6	G221-32004	1st I-F. Assy.	33	-46497	Resistor, 11 Megohms 1/2 W.
7	G188-32004	2nd I-F. Assy.	34	-23785	Resistor, 500,000 Ohms 1/2 W.
8	-48686	Condenser, .2 Mf. 160 V.	35	-23403	Resistor, 150,000 Ohms 1/2 W.
9	G5 -34002	Condenser, .00005 Mf. Mica	36	-48753	Resistor, 140 Ohms 1W.
10	G3 -34002	Condenser, .0005 Mf. Mica	37	281-UL-7	Speaker
11	G18 -34002	Condenser, .0004 Mf. Mica	38	-47993	Band Switch (No Loop)
12	-45782	Condenser, .05 Mf. 120 V.		-49058	Band Switch (With Loop)
13	-41247	4 Sect. Shunt Trimmer Cond. Assy.	39	None	
14	-45780	Condenser, .02 Mf. 160 V.	40	G41 -26719	Phono Terminal Board
15	G80 -33001	2 Section Var. Tuning Gang Cond.	41	-48181	Tone Control, 500,000 Ohms
16	-45780	Condenser, .02 Mf. 160 V.	42	-47858	Line Sw. and Vol. Control (1 Meg.)
17	G13 -34002	Condenser, .000035 Mf. Mica	43	G193-32004	Wave Trap (Not Used on Any Loop Models)
18	G5 -34002	Condenser, .00005 Mf. Mica			
19	-45780	Condenser, .02 Mf. 160 V.	44	-47702	Condenser, 30 Mf. 125 V.
20	-47702	Condenser, 30 Mf. 125 V.		-48795	Instruction Booklet
21	-48596	Condenser, 30-30 Mf. 135 V.		MG31-48576	Instruction Envelope Assy.
22	G2 -34002	Condenser, .0001 Mf. Mica		-48669	Ballast Resistor
23	-45810	Condenser, .006 Mf. 160 V.			

For miscellaneous parts not listed use Model 739 Parts List.

1	-47977	Dial Lamp, 110 Volt	24	-45780	Condenser, .02 Mf. 160 V.
2	-45769	Power Cord and Plug	25	G3 -34002	Condenser, .0005 Mf. Mica
3	G201-32000	Antenna Coils Assy.	26	-45817	Condenser, .05 Mf. 160 V.
		A—S. W. Antenna Coil	27	-21237	Resistor, 60,000 Ohms 1/2 W.
		B—B. C. Antenna Coil	28	-37905	Resistor, 8,000 Ohms 1/4 W.
4	G206-32002	Oscillator Coils Assy.	29	-36317	Resistor, 10,000 Ohms 1/4 W.
		A—S. W. Oscillator Coil	30	-26577	Resistor, 3 Megohms 1/2 W.
		B—B. C. Oscillator Coil	31	-21237	Resistor, 60,000 Ohms 1/2 W.
5	None		32	-21453	Resistor, 40,000 Ohms 1/2 W.
6	G221-32004	1st I-F. Assy.	33	-46497	Resistor, 11 Megohms 1/2 W.
7	G188-32004	2nd I-F. Assy.	34	-36322	Resistor, 500,000 Ohms 1/2 W.
8	G5 -34002	Condenser, .00005 Mf. Mica	35	-23403	Resistor, 150,000 Ohms 1/2 W.
9	G3 -34002	Condenser, .0005 Mf. Mica	36	-48753	Resistor, 140 Ohms 1W.
10	G18 -34002	Condenser, .0004 Mf. Mica	37	195-BP-10	Speaker
11	-41247	4 Sect. Shunt Trimmer Cond. Assy.	38	-47993	Band Switch (No Loop)
12	-45780	Condenser, .02 Mf. 160 V.		-49058	Band Switch (With Loop)
13	G80 -33001	2 Section Var. Tuning Condenser	39	None	
14	G13 -34002	Condenser, .000035 Mf. Mica	40	G41 -26719	Phono Terminals
15	G5 -34002	Condenser, .00005 Mf. Mica	41	-48020	Tone Control, 500,000 Ohms
16	-45782	Condenser, .05 Mf. 120 V.	42	-48650	Power Transformer
17	-45780	Condenser, .02 Mf. 160 V.	43	-48019	Line Sw. and Vol. Control (1 Meg.)
18	-47702	Condenser, 30 Mf. 125 V.	44	C193-32004	Wave Trap
19	-48596	Condenser, 30-30 Mf. 135 V.	45	-47702	Condenser, 30 Mf. 125 V.
20	-50105	Condenser, .1 Mf. 160 V.	46	-48122	Condenser, 16 Mf. 250 V.
21	G2 -34002	Condenser, .0001 Mf. Mica	47	-45760	Condenser, .02 Mf. 160 V.
22	-45810	Condenser, .006 Mf. 160 V.		-48670	Ballast Resistor
23	-45780	Condenser, .02 Mf. 160 V.			

For miscellaneous parts not listed use Model 7739 Parts List.



**MODEL 746-61  
MODEL 746-62**

**VALVE HOLDER VOLTAGE READINGS**

Valve	Function	H	P	S	G	Su	K	Ga	Go
6K7	R. F. Amp.	6.3	95	52	—	1.3	1.3	—	—
6A8	Osc. Mod.	6.3	95	52	—	—	1.7	90	—
6K7	I. F. Amp.	6.3	95	52	—	1.5	1.5	—	—
6Q7	Det. A. F. Amp. A. V. C.	6.3	25	—	—	—	—	—	13
25A6	Output	25	90	96	—	—	—	—	1.2
25Z6	Rectifier	25	96	—	—	—	—	—	—
W-40655	Ballast	Variable							

Power output approximately 1 watt (2 watts on 220 V. supply mains).

Power consumption approx. 60 watts.

Voltage drop across speaker field approx. 105 V.

All readings taken on 117.5 Volt A. C. supply mains.

All voltages except filaments will be approx. 40% higher when measured on 220 Volt supply mains.

**1. Tuning the I.F. Amplifier to 462 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I. F. amplifier valve leaving the valve's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd. or larger condenser to the frame of the variable condenser gang.

(b) Set the station selector to read between 60 and 70 on the dial, turn the band selector to the Yellow Band, turn volume control to the right (on) and the tone control to the left (Treble).

(c) Set the signal generator to 462 Kilocycles.

(d) Adjust both trimmers on top of the 2nd I. F. transformer (Item 13) Fig. 2, for maximum output.

(e) Transfer the output lead of the signal generator from the 6K7 to the grid cap of the 6A8 Osc.-Mod. valve leaving the valve's grid clip in place.

(f) Close the middle trimmer on the 1st I. F. transformer (Item 12) Fig 2, so that it is moderately tight (DO NOT FORCE ADJUSTING SCREW).

(g) Adjust top and bottom trimmer for maximum output on the 1st I. F.

(h) Transfer the lead of the signal generator from the 6A8 valve to the Ant. terminal of the receiver and increase the output of the signal generator if necessary.

(i) Check the adjustment of the bottom trimmer of the 1st I. F. transformer. Then adjust the middle trimmer by opening until maximum output is obtained. DO NOT READJUST TOP OR BOTTOM TRIMMER AFTER THE MIDDLE TRIMMER HAS BEEN ADJUSTED.

**ALIGNING R-F AMPLIFIER**

When aligning the R. F. amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the YELLOW and RED bands a .0002 mf. condenser must be in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (YELLOW and RED band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc.," "R-F" (Fig 4) and "Ant" (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

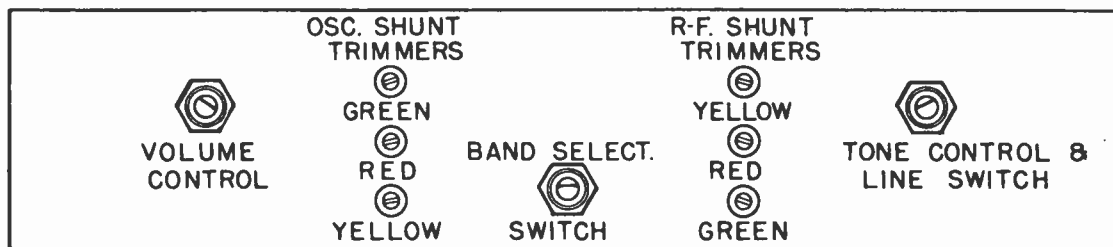
(b) To align the "OSC" series trimmers, Fig. 2, set the band selector switch to the band to be aligned and the signal generator as indicated in (C) for each adjustment; then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

**(C) SIGNAL INPUT FREQUENCIES**

	<b>Shunt Aligned</b>	<b>Series Aligned</b>
YELLOW	1700 Kc. (176.5M.)	600 Kc. (500 M.)
RED	370 Kc. (812 M.)	150 Kc. (2000 M.)
GREEN	18000 Kc. 16.65 M.)	

**NOTE:** Chassis number 746-62 (Balmoral) alignment procedure is the same as for chassis model 746-61 (Norma) except for the omitting of the 760--2050 Metre

(RED) band and complementary parts. Compare wiring diagrams and be governed accordingly.



**Fig. 4 Front View 746-61**



## MODEL 746-61 and 62—PARTS LIST

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W — 4099B	Dial Light Bulb		MG54 —42793	Drive Assy. Complete—746-62 Only
	G6 —27134	Socket Assembly		W —43475	Dial Glass (Calibrated) — 746-62 Only
2	G4 —28859	Filter Choke		B —43401	Escutcheon
3	G110—32000	Ant. Coil, 180-550 Metres		B —43402	Lens—Escutcheon
4	G122—32000	Ant. Coil, 760-2050 Metres—746-61 Only		—43403	Rubber Gasket (Escutcheon)
5	G112—32000	Ant. Coil, 17-53 Metres		—7670	Screw—Escutcheon Mtg.
6	G76 —32001	R-F Coil, 180-550 Metres	30ABC	W —35931A	3 Sect. Shunt Trimmer Cond.—746-61
7	G86 —32001	R-F Coil, 760-2050 Metres—746-61 Only	30ABC	W —35033	2 Sect. Shunt Trimmer Cond.—746-62
8	G92 —32001	R-F Coil, 17-53 Metres		B —33906A	Power Cord and Plug
9	G124—32002	Osc. Coil, 180-550 Metres	31	—31093	Resistor, 2,700 Ohm ¼W.
10	G125—32002	Osc. Coil, 760-2050 Metres—746-61 Only	32	—36317	Resistor, 10,000 Ohm ¼W.
11	G126—32002	Osc. Coil, 17-53 Metres	33	—36760	Resistor, 20,000 Ohm ¼W.
12	G133—32004	1st I-F Assembly—462 Kc.	34	—35928	Resistor, 60,000 Ohm ¼W.
13	G134—32004	2nd I-F Assembly—462 Kc.	35AB	—35600	Resistor, 100,000 Ohm ¼W.
14ABC	W —36057	Condenser, 40 Mfd. 300 V.	36	—35601	Resistor, 300,000 Ohm ¼W.
15	W —41081	Condenser, 16 Mfd. 250 V.	37	—36322	Resistor, 500,000 Ohm ¼W.
16AB	G1 —34002	Condenser, .00025 Mfd. 200 V.	38AB	—38623	Resistor, 750,000 Ohm ¼W.
17ABCD	G2 —34002	Condenser, .0001 Mfd. 200 V.	39AB	—35927	Resistor, 2. Megohm ¼W.
18AB	G5 —34002	Condenser, .00005 Mfd. 200 V.	40AB } CD		
19	G11 —34002	Condenser, .000175 Mfd. 200 V.	41ABC	W —28589	Resistor, 350 Ohm ¼W. Flex.
20ABC } DE }	W —36541	Condenser, .02 Mfd. 160 V.	45	G2 —35696	Cable for Speaker
21	W —32379	Condenser, .02 Mfd. 200 V.	46	W —35979A	Resistor Filament Series
22ABC	W —35936	Condenser, .05 Mfd. 200 V.	47AB	G151—36400	Socket Type 6K7
23	W —32780B	Condenser, .05 Mfd. 400 V.	48	G156—36400	Socket Type 6A8
24Z } 24Y }	W —31052	Condenser, .05 Mfd. } 400 V. Condenser, .004 Mfd. }	49	G160—36400	Socket Type 6Q7
25	W —31935	Condenser, .25 Mfd. 300 V.	50	G161—36400	Socket Type 25A6
26	W —30321	Condenser, 1. Mfd. 160 V.	51	G162—36400	Socket Type 25Z6
27	G20 —34000	Condenser, 4910 Mmfd.	52	G163—36400	Socket for W—40655
28	W —42426	2 Sect. Osc. Series Trimmer Cond.—746-61 Only	53	448CJ4 "M" —43171 —43175 —43179	Speaker Spec. No. 1-D-698 Cone Assembly for above Speaker Field Coil for above Speaker
28	—42830	Osc. Series Trimmer—746-62 Only	54	C —40910	Output Trans. for above Speaker
29	G50 —33002	3 Sect. Var. Tuning Condenser	54	C —42844	Band Selector Sw. for 746-61
	D —42314B	Dial Glass (Calibrated) 746-61 Only	55	W —27554A	Band Selector Sw. for 746-62
	B —41982A	Dial Mask (Metal)	56Z }		110V—220V Switch
	W —42684A	Pointer	56Y }		Tone Control
	W —40486	Screw—Pointer Mtg.	57	G27 —28719	Line Switch
	—42814	Drive Unit	58	—42290	Ant. and Gnd. Terminal Assembly
	—41582	Cable—Drive		W —41605	Volume Control, 3 Megohm
	—41584	Coupling—Flexible		W —37339	Knob—Station Sel. (1)
MG29	—42793	Drive Assy. Complete — 746-61 Only		W —42860	Knob, V. C. & T. C. (2)
				W —42490	Knob, Band Sel. (1) 746-61 Knob, Band Sel. (1) 746-62

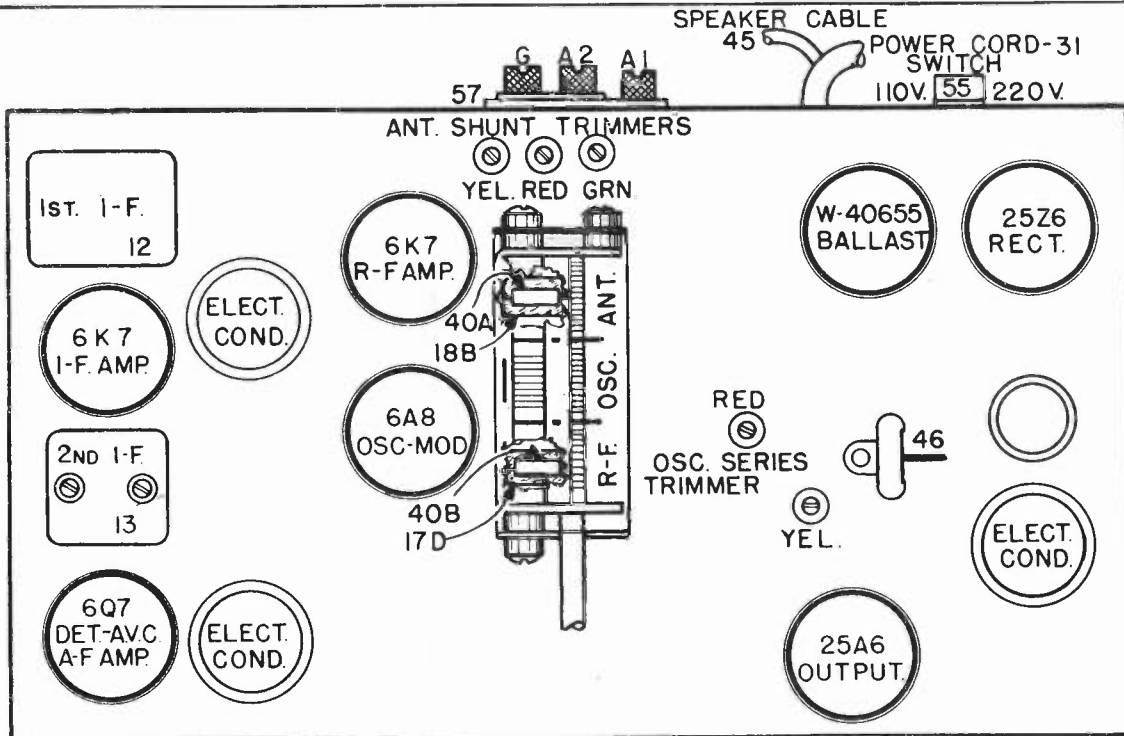


Fig. 2 Top View 746-61

**SPECIFICATIONS**

This model Crosley is a seven-valve (including the ballast resistor) superheterodyne receiver. It is de-

- BAND No. 1—(orange) 1712-540 Kilocycles or 175- 556 Meters
- BAND No. 2—(green) 2.5- 7.0 Megacycles or 120- 428 Meters
- BAND No. 3—(blue) 7.2- 22 Megacycles or 41.7-13.6 Meters

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .0002 mf. condenser to the antenna lead. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B. C.)

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig 2, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the Medium Wave Band (ORANGE) use a .0002 mf. condenser and for the Short Wave Bands (GREEN & BLUE) a 250 ohm carbon resistor instead of the condenser.

(a) Set the signal generator to 1712 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to the Medium Wave Band, adjust the "OSC" Band No. 1 trimmer condenser for maximum output. It is necessary that the receiver just tune through this signal.

signed for operation on 210 to 250 volt power mains either D.C. or 50-60 cycle A.C. The tuning range is divided into three bands as follows:

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser "ANT" Band No. 1 for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 7.25 Megacycles, turn band switch to middle position (BLUE BAND). Connect 250 ohm carbon resistor in series with signal generator lead.

(h) Open gang condenser all the way then adjust OSC. Band No. 2 trimmer condenser for maximum output.

(i) Set signal generator to 7.0 Megacycles.

(j) Tune-in generator signal on receiver for maximum output.

(k) While rocking tuning condenser slowly back and forth adjust the ANT. Band No. 2 trimmer condenser for maximum output.

(l) Set signal generator to 23 megacycles, turn band switch all the way to the right and open gang all the way.

(m) Adjust "OSC" Band No. 3 trimmer condenser for maximum output.

(n) Set signal generator to 22 megacycles.

(o) Tune in 22 mc. signal on receiver, then adjust the "ANT" Band No. 3 trimmer condenser for maximum output while slowly rocking condenser back and forth.

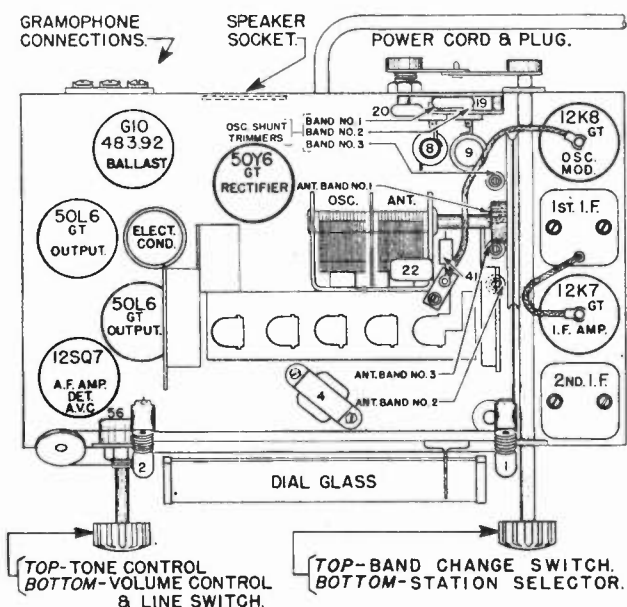


Fig. 2—Top View Model 749

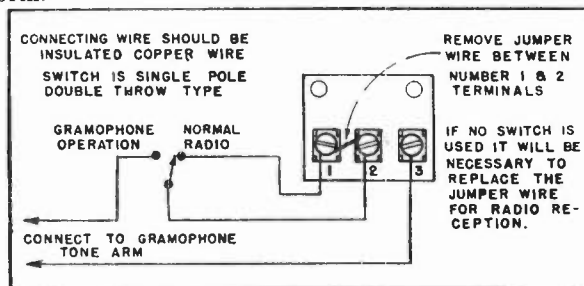


Fig. 4—Gramophone Connections

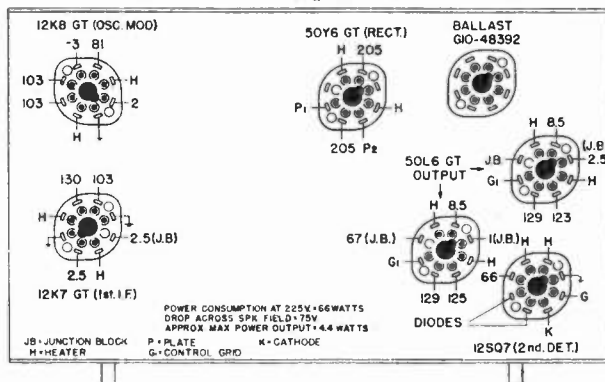
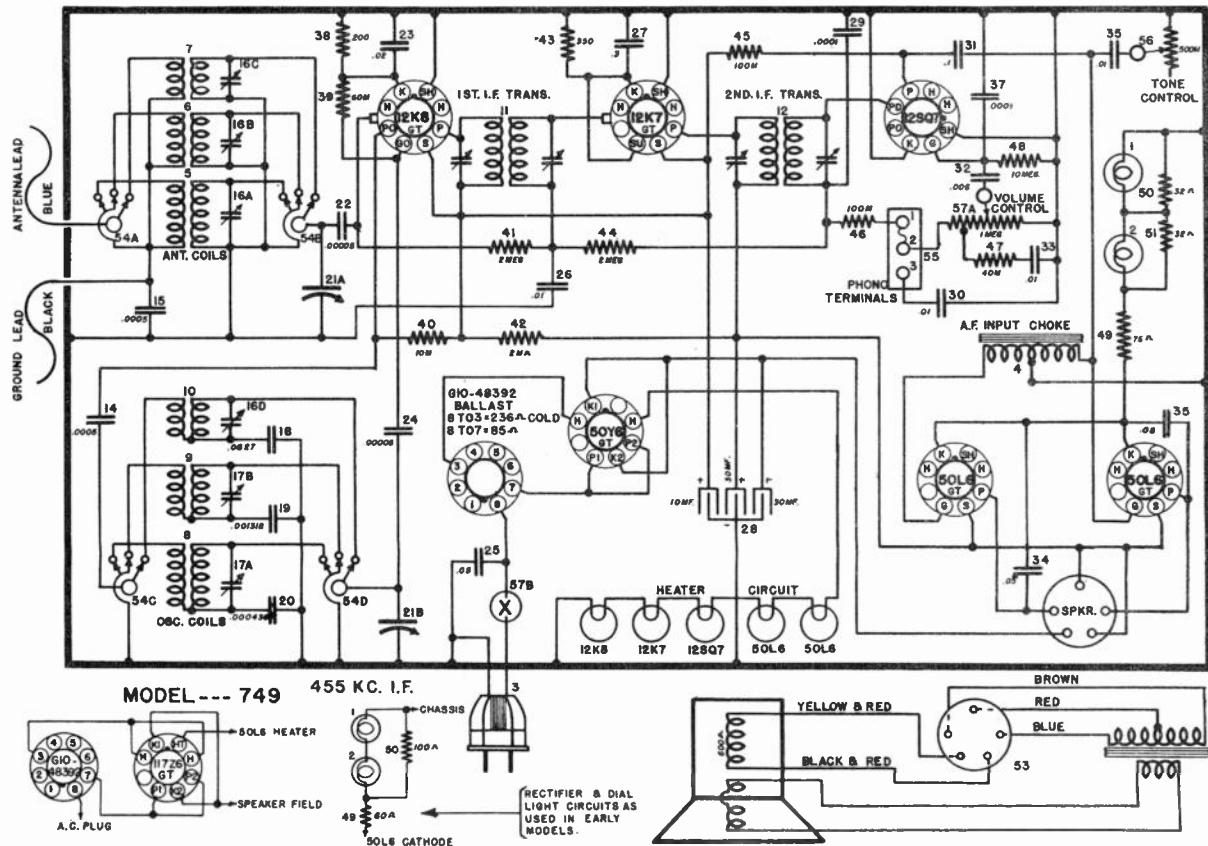


Fig. 5—Voltage Chart

MODEL 749



Item No.	Part No.	Description	Item No.	Part No.	Description
1	-37188	Dial Lamp	51	-37631	Resistor, 32 Ohms 1/4W.
2	-37188	Dial Lamp	52	None	
3	G6 -27134	Socket Assy.—Dial Lamp	53	394-BP-11 "M"	Speaker—Mfg. Spec. No. 1-D-1642
4	-45769	Power Mains Cord and Plug		-49432	V. C. and Cone Assy.
5	G28 -29535	Choke—Audio Input		-49433	Field Coil (600 Ohms)
6	G210-32000	Antenna Coil—1,712-540 Kilocycles		-49434	Output Transformer
7	G211-32000	Antenna Coil—2.5-7.0 Megacycles		-43674	Cardboard Ring—Cone Mounting
8	G212-32000	Antenna Coil—7.2-22 Megacycles	54	-49172	Band Change Switch
9	G220-32002	Oscillator Coil—1,712-540 Kilocycles	G8 -44470	Toggle Arm (On Extension Shaft)	
10	G219-32002	Oscillator Coil—2.5-7.0 Megacycles	G9 -44470	Toggle Arm (On Band Switch)	
11	G218-32002	Oscillator Coil—7.2-22 Megacycles	(G50 -26719	Gramophone Terminal Board	
12	G236-32004	1st I-F. Assy.—455 Kc.	-48020	Tone Control (1 1/2 Meg.)	
13	None	2nd I-F. Assy.—455 Kc.	56	-48019	Switch and Volume Control (1 Meg.)
14	G3 -34002	Condenser, .0005 Mf. Mica	G10 -48392	Plug-In Ballast Resistor	
15	G3 -34002	Condenser, .0005 Mf. Mica	-46729	Socket—8 Prong—No Marking	
16	-41247	Condenser—Shunt Trimmer Assy. A—M. W. Ant. (Orange Band) B—S. W. Ant. (Green Band) C—S. W. Ant. (Blue Band) D—S. W. Osc. (Blue Band)	G103-28807	Socket—Marked "Speaker"	
17	-37986	Condenser—Shunt Trimmer Assy. A—M. W. Osc. (Orange Band) B—S. W. Osc. (Green Band)	-48992	Dial Glass Face	
18	G11 -34005	Condenser, .002700 Mf. Mica	-49180	Bracket—Dial Glass Mtg. (FS-71)	
19	G15 -34005	Condenser, .001318 Mf. Mica	-49182	R. H. Clip—Dial Glass Mtg.	
20	G19 -34002	Condenser, .000436 Mf. Mica	-49181	L. H. Clip—Dial Glass Mtg.	
21	G89 -33001	Condenser—Variable Tuning Gang	-49183	Pointer—Dial Hand (FS-77)	
22	G5 -34002	Condenser, .00005 Mf. Mica	-46035	Pointer Guide—Metal Bar	
23	-28621	Condenser, .02 Mf. 200 V.	G12 -43564	Pulley and Hub Assy. (On Gang)	
24	G5 -34002	Condenser, .00005 Mf. Mica	MG13-46167	Idler Pulley and Brkt. Assy. (R. H.)	
25	-23615	Condenser, .05 Mf. 400 V.	MG14-46167	Idler Pulley and Brkt. Assy. (L. H.)	
26	-23191	Condenser, .01 Mf. 400 V.	-47969	Drive Shaft	
27	-37732	Condenser, .3 Mf. 160 V.	-43542	Bracket—Drive Shaft Mtg.	
28	-49343	Condenser, 30-30-10 Mf. Electrolytic	G2 -41582	Drive Cord (44" or 115 Cm.)	
29	-34002	Condenser, .0001 Mf. Mica	-50690	Spring—Drive Cord Tension	
30	-23191	Condenser, .01 Mf. 400 V.	-49184	B. Switch Extension Shaft	
31	-24049	Condenser, .1 Mf. 200 V.	-50325	"C" Washer—Exten. Shaft Retainer	
32	-49488	Condenser, .006 Mf. 400 V.	MG31-48571	Riveted Bottom Cover	
33	-30805	Condenser, .01 Mf. 400 V.	G23 -35954	Single Junction Block	
34	-45817	Condenser, .05 Mf. 160 V.	-45580	Rubber Grommet—Gang Brkt. Mtg.	
35	-49489	Condenser, .01 Mf. 400 V.	-46460	Headed Bushing—Gang Brkt. Mtg.	
36	-45817	Condenser, .05 Mf. 160 V.	-6495	No. 8—32 x 1/4" Screw—Gang Brkt. Mtg.	
37	-34002	Condenser, .0001 Mf. Mica	9FD	Cabinet	
38	-50699	Resistor, 20 Ohms 1/4W.	-49200	Shipping Carton	
39	-35928	Resistor, 60,000 Ohms 1/4W.	-49213	Cabinet Back	
40	-36317	Resistor, 10,000 Ohms 1/4W.	-49219	Bracket (3 Req.) Speaker Mtg.	
41	-35927	Resistor, 2 Megohms 1/4W.	-48736	Rubber Grommet—Speaker Mtg.	
42	-23013	Resistor, 2,000 Ohms 1/4W.	-46460	Headed Bushing—Speaker Mtg.	
43	-38616	Resistor, 350 Ohms 1/4W.	-45090	Flat Washer—Chassis Mtg.	
44	-35927	Resistor, 2 Megohms 1/4W.	-18900	No. 8—1/4" Screw—Chassis Mtg.	
45	-35600	Resistor, 100,000 Ohms 1/4W.	-78	No. 4—1/2" Screw—Cabinet Back Mtg. (FS-18)	
46	-35600	Resistor, 100,000 Ohms 1/4W.	-46953	Knob (4 Req.)	
47	-36761	Resistor, 40,000 Ohms 1/4W.	-49612	Instruction Booklet	
48	-33490	Resistor, 10 Megohms 1/4W.	MG31-49037	Instruction Envelope Assy.	
49	-47699	Resistor, 75 Ohms 1/4W.	-49284	Short Wave Station Chart	
50	-37631	Resistor, 32 Ohms 1/4W.			

MODEL 758 & 118 FACIMILE PRINTER

TUBE	FUNCTION	H	P	K	S	GO	GA
6K8	Osc.-Mod.	6.3	100	-	100	Neg.	100
6SK7	1st I.F. Amp.	6.3	288	-	100		
1852	2nd I.F. Amp.	6.3	265	-	158		
6SQ7	Det, AVC, 1st AF Amp.	6.3	88	-			
6Q7G	AVC Amp.	6.3	288	17			
6N6	Output	6.3	272	P2	238		
5Y3G	Rectifier	5.0					

Power output approximately 6½ watts.

Power consumption approximately 82 watts at 117.5 volts.

Voltage drop across speaker field approximately 70 volts.

-74 volts chassis to #7 pin on cable socket.

ALIGNMENT PROCEDURE

1. TUNING I.F. AMPLIFIER TO 455 KILOCYCLES.

a. Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the black lead of the receiver.

KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

b. Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

c. Turn the band selector switch to the Broadcast Band.

d. Set the signal generator to 455 kilocycles.

e. Adjust the two REAR trimmers located on the top of the 3rd I.F. diode transformer for maximum output.

The following alignment procedure must be followed step by step to insure correct alignment of the 3000 kilocycles I.F. as this alignment is very important.

2. TUNING I.F. AMPLIFIER TO 3000 KILOCYCLES.

a. Connect the signal generator lead, through an .02 mfd. condenser to the grid of the 6SK7. Clip on the green lead with spade lug soldered to the band switch.

b. Set signal generator to 3000 kilocycles, condenser gang all the way open, and band switch in H.F. position.

c. Open the FRONT trimmer on the 2nd (H.F.) I.F.

d. Adjust the FRONT trimmer on the 3rd I.F. (Diode Transformer) and then the REAR trimmer on the 2nd (H.F.) I.F. transformer, for maximum output. Repeat the operation until no further improvement in output is to be had.

e. Align the FRONT trimmer on the 2nd (H.F.) I.F. transformer for MINIMUM output.

f. Touch up FRONT trimmer ONLY on the 3rd I.F. (Diode).

g. Transfer signal generator lead to top cap of 6K8 (leave grid cap in place).

h. Align both trimmers on top of (H.F.) 1st I.F. for maximum output. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

ALIGNING R.F. AMPLIFIER.

When aligning the R.F. Amplifier the output lead of the signal generator is connected to the blue lead of the receiver. For the broadcast band a .0002 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 250 ohm carbon resistor should be used in place of the condenser.

B.C., R.F. ALIGNMENT

a. Connect the signal generator output through a .002 mfd. condenser to the blue lead and ground lead to the black lead.

b. Set band switch to broadcast band (left) and open gang condenser all the way.

c. Set signal generator to 1570 kilocycles.

d. Adjust B.C. oscillator trimmer for maximum output (second trimmer from end of rear chassis flange).

e. Set signal generator to 1400 kilocycles.

f. Adjust B.C. antenna trimmer for maximum output (first trimmer from end of rear chassis flange). Repeat for maximum output.

UHF, R.F. ALIGNMENT

a. Connect the signal generator output through a 250 ohm carbon resistor to the blue lead (antenna).

b. Close gang condenser and open UHF oscillator shunt trimmer ¾ turn, right trimmer on top of gang.

c. Set signal generator to 24 megacycles.

d. Peak 24 megacycles signal by adjusting the position of the insulated lead, fastened from oscillator trimmer to gang, with relation to end of coil.

e. Set signal generator to 47 megacycles and open gang condenser to minimum position.

f. Adjust UHF oscillator shunt trimmer for maximum output.

g. Set signal generator to 45 megacycles.

h. Tune-in 45 megacycles signal with gang and then adjust antenna shunt trimmer (left on top of gang) for maximum output.

i. Set signal generator to 25 megacycles and then tune-in with gang.

MODEL 758 & 118 FACIMILE PRINTER

j. Repeak antenna circuit by adjusting position on wire from antenna trimmer to gang, with relation to end of antenna coil.

NOTE: If this wire requires a great deal of movement, the antenna alignment at 45 megacycles should be checked.

PARTS LIST -- MODEL 758

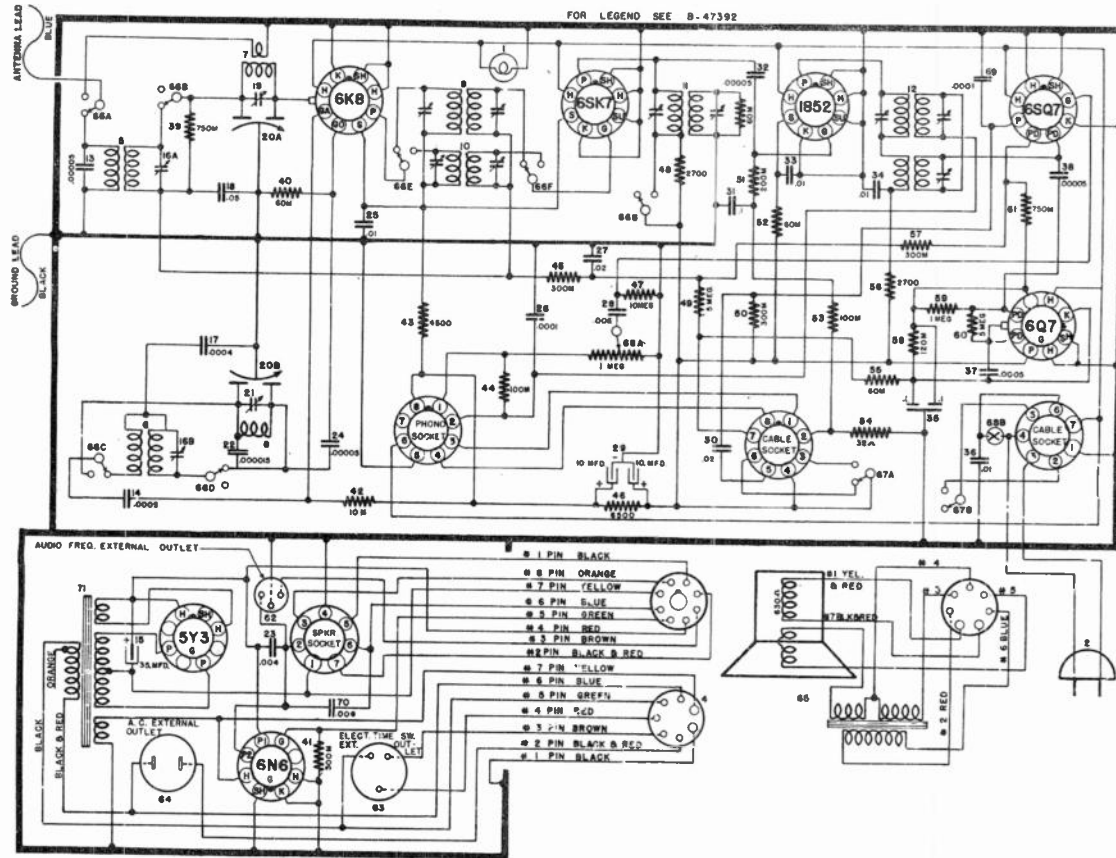
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37922	Dial Light, 6-8 v.	48	36316	2700 ohm $\frac{1}{2}$ w. Ins. Res.
3	B-45154	8 Lead Cable & Plug	49	47131	5 meg. $\frac{1}{2}$ w. Ins. Res.
4	B-45153	7 Lead Cable & Plug	50	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
5	G192-32000	BC Ant. Coil	51	35930	200,000 ohm $\frac{1}{2}$ w. Ins. Res.
6	G190-32002	BC Osc. Coil	52	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.
7	G191-32000	UHF Osc. Coil	53	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.
8	G189-32002	UHF Osc. Coil	54	45981	32 ohm $\frac{1}{2}$ w. Ins. W.W. Res.
9	G214-32004	1st I.F. Trans. BC	55	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.
10	G213-32004	1st I.F. Trans. HF	56	36316	2700 ohm $\frac{1}{2}$ w. Ins. Res.
11	G215-32004	2nd I.F. Trans.	57	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
12	G212-32004	Dual I.F. Trans.	58	36320	120,000 ohm $\frac{1}{2}$ w. Ins. Res.
13	G5-34002	.00005 mfd. Cond.	59	35602	1 meg $\frac{1}{2}$ w. Ins. Res.
14	G3-34002	.0005 mfd. Cond.	60	47131	5 meg $\frac{1}{2}$ w. Ins. Res.
15	W-36055-B	35 mfd. 400 v. Elec. Cond.	61	38623	750,000 ohm $\frac{1}{2}$ w. Ins. Res.
16A	W-47147	BC Ant. Sec. Trim. Cond.	62	W-47133	Socket A.F. Ext. Outlet
16B		BC Osc. Sec.	63	W-50243	Socket Elec. Time Sw.
17	G18-34002	.0004 mfd. Cond.	64	W-47163	Socket A.C. Ext. Outlet
18	W-35936	.05 mfd. 200 v. Cond.	65	388 BP-6"O"	Speaker Spec. 6-150
19	W-45979	UHF Ant. Trim. Cond. Ant. Sec.	66A	47509	Speaker Cone
20A		Osc. Sec. Var. Cond.	66B	47536	Output Trans.
20B	G70-33001	Pulley & Hub Assy.	66C		
	D-47191	Dial Glass	66D	B-47157	Band Change Sw.
	W-45890-A	Dial Hand	66E		
	G60-45683	Riveted Bracket Assy.	66F		
21	W-47126	UHF Osc. Trim. Cond.	66G		
22	G1-34009	.000015 mfd. Cond. (Temp. Comp.)	67A	47155-A	Function Change Sw.
23	W-35139	.004 mfd. 400 v. Cond.	67B		A.C. Power Sw.
24	G2-34009	.00005 mfd. Cond. (Temp. Comp.)	68A	47138-A	Vol. Cont. 1 meg.
25	W-23191-A	.01 mfd. 400 v. Cond.	68B	G2-34002	.0001 mfd. Cond.
26	G2-34002	.0001 mfd. Cond.	69	W-35758	.008 mfd. 400 v. Cond.
27	W-28621	.02 mfd. 200 v. Cond.	70		Power Trans., 60 cy.
28	W-34713	.006 mfd. 160 v. Cond.	71	47177-A	110 v. Push Button Unit Assy.
29	W-47256	10-10 mfd. 300 v. Elec. Cond.		G35-45683	Riveted Key Assy.
30	W-30488	.02 mfd. 400 v. Cond.		G32-45683	Rocket Plate Assy.
31	W-24049-C	.1 mfd. 200 v. Cond.		G22-45683	Key Plate
32	G5-34002	.00005 mfd. Cond.		W-50547	Key Clip
33-34	W-23191-A	.01 mfd. 400 v. Cond.		W-50542	Key Return Spring (5 req.)
35	W-28622	.1-.1 mfd. 200 v. Cond.		W-47390	Shortening Plug
36	W-30805	.0005 mfd. Cond.		8 GE	Cabinet
37	G3-34002	.0005 mfd. Cond.		46417	Push Buttons (5 req.)
38	G5-34002	.00005 mfd. Cond.		46408	Knob (1 req.)
39	38623	750,000 ohm $\frac{1}{2}$ w. Res.		47295-A	Knob (3 req.)
40	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.		46887	Call Letter Sheet
41	36322	500,000 ohm $\frac{1}{2}$ w. Ins. Res.			
42	36317	10,000 ohm $\frac{1}{2}$ w. Ins. Res.			
43	31094	4500 ohm $\frac{1}{3}$ w. Carb. Res.			
44	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.			
45	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.			
46	47101	6500 ohm $2\frac{1}{2}$ w. Ins. Res.			
47	50956	10 meg. $\frac{1}{2}$ w. Ins. Res.			

PARTS LIST -- MODEL 118 PRINTER

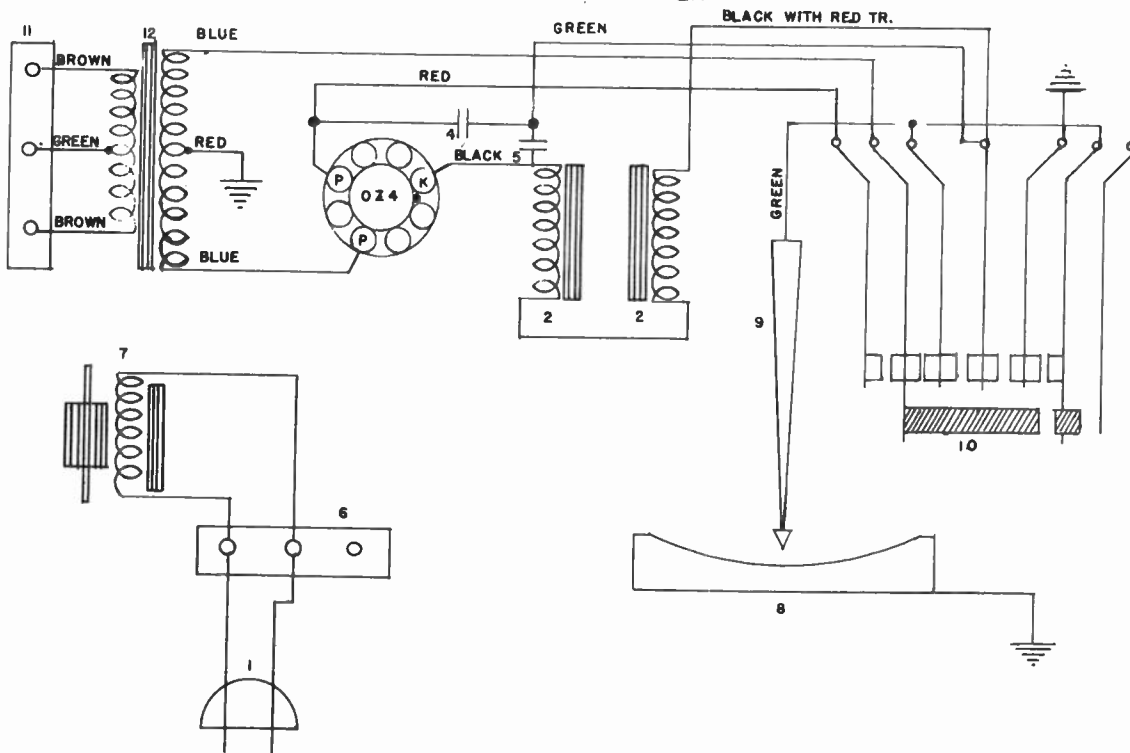
1	B-33906-A	Cable, Power Supply	8	C-46615	Platen, Paper
2	G4-50368	Coil, Synchronizing	9	W-46582	Stylus, Arm
4	W-41445	.036 mfd. 400 v. Cond.	10	W-46550	Sw. Jack
5	W-23615	.05 mfd. 400 v. Cond.	11	G43-26719	Term. Board
6	G60-35954	Junction Block	12	G1-46616	Input Trans.
7	B-46576	Motor			

MODEL 758 & 118 FACSIMILE PRINTER

FOR LEGEND SEE B-47392



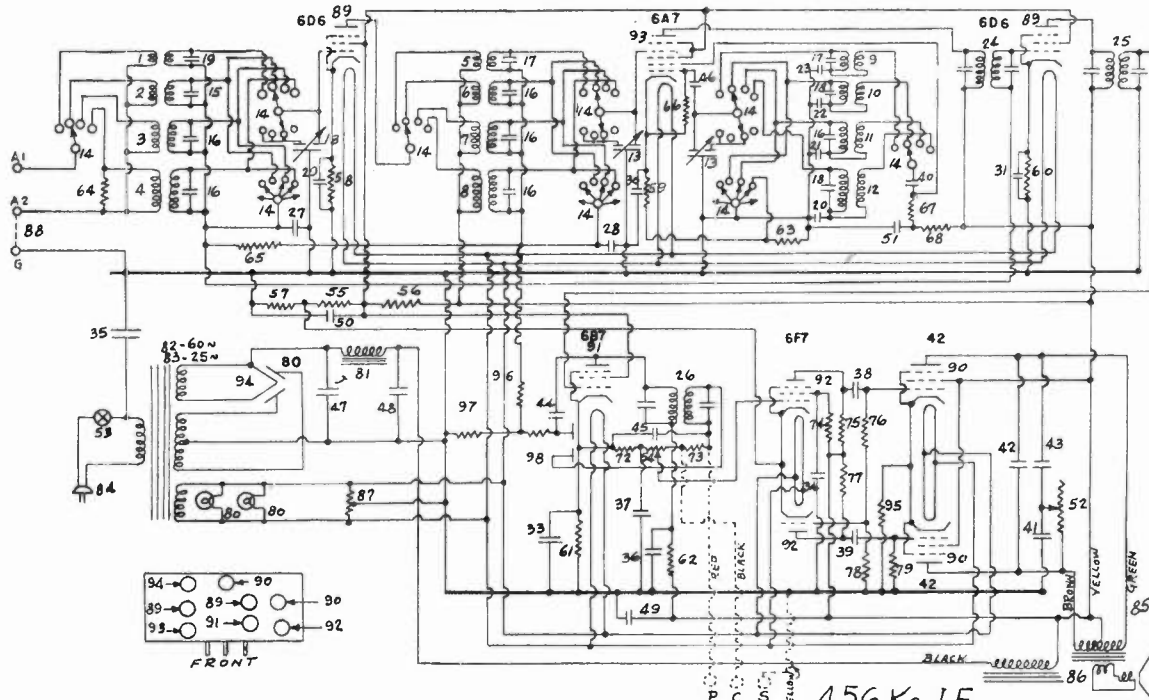
118 FACSIMILE PRINTER







MODEL 814



1	G30	—32000	Ant. Coil (10.0-22.0 Mc)	51	W	—32258	8 Mfd. 300 Volt
2	G29	—32000	Ant. Coil (4.0-10.0 Mc)	52	W	—32063	{ Tone Control
3	G4	—32000	Ant. Coil (1.5-4.0 Mc)	53	W	—33378	{ Switch
4	G3	—32000	Ant. Coil (Broadcast)	54	W	—32301	Level Control
5	G16	—32001	Inter. Coil (10.0-22.0 Mc)	55	W	—30127	{ 15,000 Ohms
6	G15	—32001	Inter. Coil (4.0-10.0 Mc)	56	W	—25937	{ 10,000 Ohms
7	G8	—32001	Inter. Coil (1.5-4.0 Mc)	57	W	—27503	450 Ohms Flex.
8	G2	—32001	Inter. Coil (Broadcast)	58	W	—27503	275 Ohms Flex.
9	G23	—32002	Osc. Coil (10.0-22.0 Mc)	59	W	—30127	1,400 Ohms Flex.
10	G22	—32002	Osc. Coil (4.0-10.0 Mc)	60	W	—22514	1,400 Ohms Flex.
11	G3	—32002	Osc. Coil (1.5-4.0 Mc)	61	W	—29585	450 Ohms Flex.
12	G17	—32002	Osc. Coil (Broadcast)	62	W	—31094	750 Ohms Flex.
13	G24	—33002	Variable Condenser	63	W	—24814	600 Ohms Flex.
14	B	—34083-A	Band Change Switch	64		—21455	4,500 Ohms
15	G17	—33009	Padding Condenser	65		—21875	300,000 Ohms
16	G7	—33009	Padding Condenser	66		—24814	100,000 Ohms
17	G6	—33009	Padding Condenser	67		—24814	7,000 Ohms
18	G5	—33009	Padding Condenser	68			7,000 Ohms
19	G17	—33006	Padding Condenser	69			
20	G16	—33006	{ Trimmer Condenser	70			
21			{ Trimmer Condenser	71			
22	G2	—34000	3104 Mmfd.	72		—21876	10,000 Ohms
23	G1	—34000	1647 Mmfd.	73		—23785	500,000 Ohms
24	G25	—32004	1st I. F. Transformer	74		—23785	500,000 Ohms
25	G23	—32004	2nd I. F. Transformer	75		—21237-A	60,000 Ohms
26	G24	—32004	3rd I. F. Transformer	76		—23785	500,000 Ohms
27	W	—32379	0.02 Mfd. 200 Volt	77		—23403	150,000 Ohms
28	W	—32379	0.02 Mfd. 200 Volt	78		—21237-A	60,000 Ohms
29	W	—28621	0.02 Mfd. 200 Volt	79		—23785	500,000 Ohms
30	W	—28621	0.02 Mfd. 200 Volt	80	W	—4099-A	6.3 V. Dial Lamp
31	W	—28621	0.02 Mfd. 200 Volt	81		—24628	Filter Choke
32				82		—25669	60 Cy. Power Trans.
33	W	—28621	0.02 Mfd. 200 Volt	83		—25669	25 Cy. Power Trans.
34	W	—23142	0.02 Mfd. 400 Volt	84	B	—33906-A	Cord & Plug
35	W	—30805	0.01 Mfd. 400 Volt	85	W	—31007-A	Speaker Cable
36	W	—23191-A	0.01 Mfd. 400 Volt	86		—68C	Speaker
37	W	—30321	1.0 Mfd. 160 Volt	87	W	—32337	10 Ohms-10 Ohms
38	W	—23615	0.05 Mfd. 400 Volt	88	G14	—26719	Ant.-Gnd. Term.
39	W	—23615	0.05 Mfd. 400 Volt	89	G75	—27975	6D6 Socket
40	W	—23635	0.006 Mfd. 400 Volt	90	G25	—27975	42 Socket
41	W	—30270	0.001 Mfd. 400 Volt	91	G48	—27975	6B7 Socket
42	W	—31052	{ 0.004 Mfd. 400 Volt	92	G49	—27975	6F7 Socket
43			{ 0.05 Mfd. 400 Volt	93	G2	—33070	6A7 Socket
44	W	—32741-A	0.0005 Mfd.	94	G6	—27975	80 Socket
45	W	—31937	0.0001 Mfd.	95	W	—22873	220 Ohms
46	W	—30741	0.00025 Mfd.	96		—26577	3 Megohm
47	W	—26194-B	12 Mfd. 475 Volt	97		—23785	500,000 Ohms
48			{ 8 Mfd. 450 Volt	98		—23785	500,000 Ohms
49	W	—29097-D	{ 8 Mfd. 450 Volt				
50			{ 8 Mfd. 250 Volt				

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R. F. Amplifier	2.0	135	67.5	—	—	—
1C6	Osc.-Mod.	2.0	135	67.5	—	85	-5 to -10
34	1st I-F Amplifier	2.0	135	67.5	-3	—	—
34	2nd I-F Amplifier	2.0	135	67.5	-3	—	—
30	Diode Detector	2.0	—	—	—	—	—
30	A-F Amplifier	2.0	70	—	-3	—	—
30	A-F Driver	2.0	135	—	-9	—	—
19	Double Triode Output	2.0	135	—	-1.5	—	—

POWER OUTPUT APPROXIMATELY 2.5 WATTS.

"A" BATTERY DRAIN APPROXIMATELY .74 AMPERES AT 2 VOLTS.

"B" BATTERY DRAIN 20 TO 35 MILLIAMPERES—DEPENDING UPON VOLUME CONTROL ADJUSTMENT.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1C6 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 3rd I-F transformer for maximum output. (Screw and nut).

(f) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(g) Adjust both trimmers for the 1st I-F transformer (26Y and 26Z located on end of chassis) for maximum output.

(h) Repeat operations (e), (f) and (g) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm carbon resistor (Non-Inductive).

Each band should be shunt aligned, series aligned and then shunt aligned again in order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" (24), "R-F" (23) and "ANT" (22) shunt trimmers, Z—Broadcast and Y—High Frequency Bands, in the order given for maximum output. Retune the station selector to the generator signal for maximum output. Readjust the "R-F" and "Ant" trimmers for maximum output. Do not readjust the "OSC" shunt trimmer.

To adjust the "series" trimmers 25Z—Broadcast and 25Y—High Frequency Bands, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

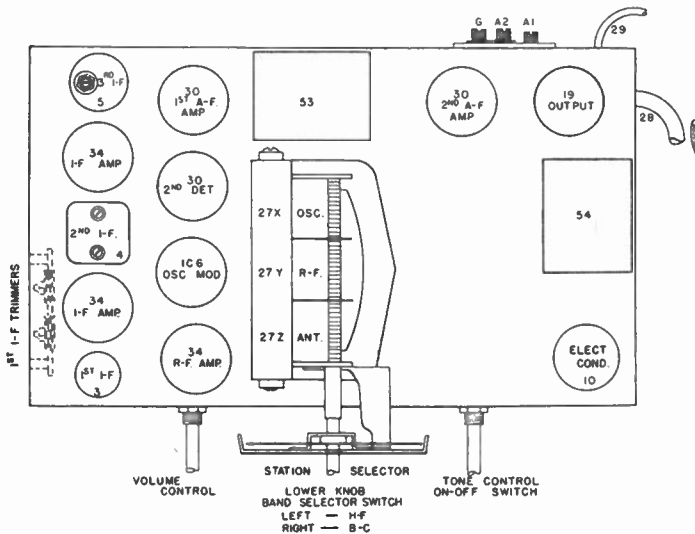


Fig. 2. Top View 815

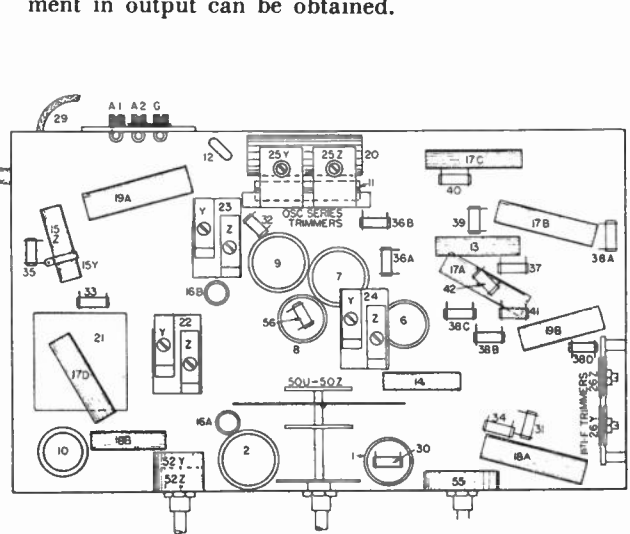
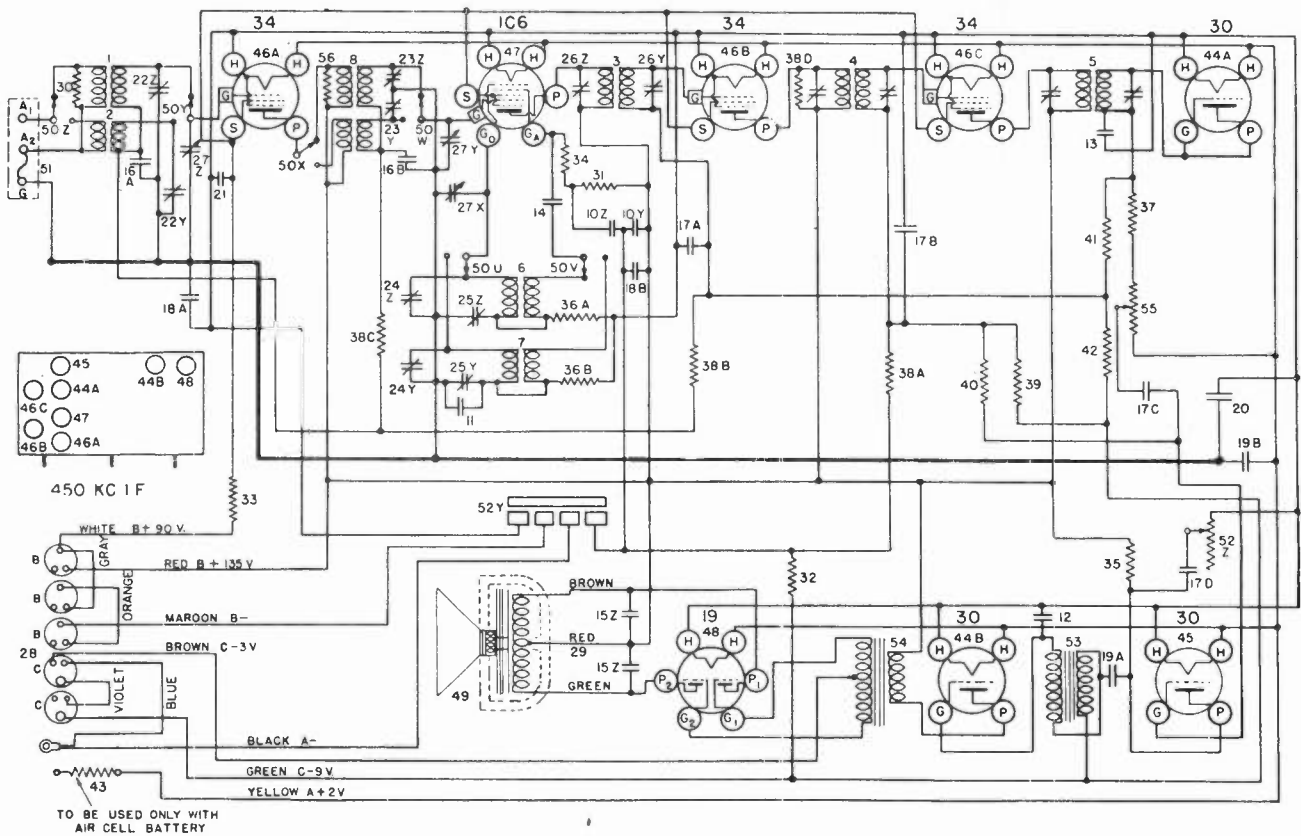


Fig. 3. Bottom View 815

(b) Signal Generator Frequencies.

	Shunt Alignment	Shunt Alignment
High Frequency Band	1400 Kc.	600 Kc.
Broadcast Band	15000 Kc.	6000 Kc.

# MODEL 815



Item No.	Part No.	Description	Item No.	Part No.	Description
1	G3-32000	Ant. Coil 540-1720 Kc.	26Z	G6-33006	2 Section 1st I. F. Trimmer
	W-25025A	Coil Shield	26Y	G33-33002	3 Section Tuning Condenser Gang
	W-26891	Insulating Washer	27Z	MG26-36493	Dial Drive Complete
	W-21541C	Retaining Ring	27Y	C-35113	Dial Face
	W-25200	Coil Socket	27X	W-37198	Dial Pointer
2	G28-32000	Ant. Coil 5.7-15.5 Mc.		W-32293	Pointer Nut (2)
	W-30802A	Coil Shield	28	C-36517C	Battery Cable
	W-30026A	Retaining Ring		W-28164	Cable Clamp
	W-33438	Centering Washer	29	W-31008	Speaker Cable
3	G1-32004	1st I. F. Coil (only)	30	31094	Resistor, 4,500 Ohm, 1/4 W.
	G1-24064	Shield	31	27121	Resistor, 5,000 Ohm, 1/4 W.
	W-26891	Insulating Washer	32	23868	Resistor, 6,500 Ohm, 1/4 W.
4	G21-32004	2nd I. F. Assm.	33	24814	Resistor, 7,000 Ohm, 1/4 W.
5	G22-32004	3rd I. F. Assm.	34	21876	Resistor, 10,000 Ohm, 1/4 W.
6	G2-32002	Osc. Coil, 540-1720 Kc.	35	22196	Resistor, 20,000 Ohm, 1/4 W.
	W-25025A	Coil Shield	36A	21875	Resistor, 100,000 Ohm, 1/4 W.
	W-26891	Insulating Washer	36B	21875	Resistor, 100,000 Ohm, 1/4 W.
	W-21541C	Retaining Ring	37	23403	Resistor, 150,000 Ohm, 1/4 W.
	W-25200	Coil Socket	38A	21455	Resistor, 300,000 Ohm, 1/4 W.
7	G21-32002	Osc. Coil, 5.7-15.5 Mc.	38B	21455	Resistor, 300,000 Ohm, 1/4 W.
	W-30802A	Coil Shield	38C	21455	Resistor, 300,000 Ohm, 1/4 W.
	W-30026A	Retaining Ring	38D	21455	Resistor, 300,000 Ohm, 1/4 W.
	W-33438	Centering Washer	39	23785	Resistor, 500,000 Ohm, 1/4 W.
8	G2-32001	R. F. Coil, 540-1720	40	21454	Resistor, 1.0 Megohm, 1/4 W.
	W-25024B	Coil Shield	41	26577	Resistor, 3.0 Megohm, 1/4 W.
	W-26891	Insulating Washer	42	26578	Resistor, 5.0 Megohm, 1/4 W.
	W-21541C	Retaining Ring	43	G4-23300	Resistor, 0.25 Megohm (Wire Wound)
	W-25200	Coil Socket	44A	G9-28807	Socket 30
9	G18-32001	R. F. Coil, 5.7-15.5 Mc.	44B	G9-28807	Socket 30
	W-30802A	Coil Shield	44C	G9-33070	Socket 30
	W-30026A	Retaining Ring	45	G31-28807	Socket 34
	W-33438	Centering Washer	46A	G31-28807	Socket 34
10Z	W-33900	Condenser, 8. Mfd., 200 V.	46B	G31-28807	Socket 34
10Y	G3-34000	Condenser, 8. Mfd., 200 V.	46C	G31-28807	Socket 34
11	G1-34000	Condenser, 2200 Mmfd., 300 V.	47	G84-33070	Socket 10G
12	G1-34002	Condenser, 0.00025 Mfd., 200 V.	48	G44-28807	Socket 19
13	W-27932	Condenser, 0.0001 Mfd., 200 V.		W-33072	Socket Cushion (2)
14	W-25435	Condenser, 0.003 Mfd., 400 V.		W-27981A	Tube Shield Base (1)
15Z	W-31158	Condenser, 0.006 Mfd., 400 V.		W-26231	Tube Shield (1)
15Y	W-32379	Condenser, 0.006 Mfd., 400 V.		42-PS-3	Speaker
16A	W-32379	Condenser, 0.02 Mfd., 200 V.	49		
16B	W-32379	Condenser, 0.02 Mfd., 200 V.	50Z		
17A	W-27216	Condenser, 0.05 Mfd., 200 V.	To		
17B	W-27216	Condenser, 0.05 Mfd., 200 V.	50Y		
17C	W-27216	Condenser, 0.05 Mfd., 200 V.	51		
17D	W-27216	Condenser, 0.05 Mfd., 200 V.	52Z		
18A	W-24049B	Condenser, 0.1 Mfd., 200 V.	52Y		
18B	W-24049B	Condenser, 0.1 Mfd., 200 V.	53		
19A	W-29910A	Condenser, 0.25 Mfd., 200 V.	54	MG40-36493	1st Audio Transformer
19B	W-29910A	Condenser, 0.25 Mfd., 200 V.	55	MG41-36493	2nd Audio Transformer
20	W-30321A	Condenser, 1.0 Mfd., 160 V.	56	32062	Volume Control (1 Meg.)
21	W-28869	Condenser, 2.0 Mfd., 200 V.		22831	Resistor, 15,000 Ohm, 1/4 W.
22Z	G1-33008	2 Section Ant. Trimmer	B-	35528	Escentechon
22Y			W-	33084	Escentechon Gasket
23Z	G9-33009	2 Section R. F. Trimmer	D-	28	Escentechon Screw (4)
23Y			W-	33061	Knob (1)
24Z	G18-33009	2 Section Osc. Trimmer	W-	31585B	Knob (3)
24Y					
25Z	G20-33006	2 Section Osc. Series Trimmer			
25Y					

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>1</sub>	S	Su	G	K	Ga	Go
6K7	R-F Amplifier	6.3	245	—	100	4.0	0	4.0	—	—
6A8	Osc-Modulator	6.3	245	—	130	—	0	4.5	150	-5 to -30
6K7	I-F Amplifier	6.3	230	—	130	4.0	0	4.0	—	—
6R7	Diode Detector & A-F Amplifier	6.3	130	—	—	—	0	4.0	—	—
6N6	(2) Output	6.3	245	230	—	—	0	4.0	—	—
SZ4MG	Rectifier	5.0	345	—	—	—	—	—	—	—

W-41187 Phantom Conductor Tube—All Voltages Variable  
 Voltage drop across speaker field 100 volts.  
 Power Output at approximately 8 watts.  
 Power Consumption approximately 115 watts.  
 All readings taken on 117.5 volt power supply.

PHONOGRAPH PICKUP

Chassis equipped with a 25 cycle power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P C S and the pickup is connected through a double pole single throw switch to these terminals as shown in Fig. 7.

ALIGNMENT PROCEDURE

This is a High Fidelity receiver and in order to secure maximum performance the alignment of its circuits should be done with precision instruments.

Tuning I-F Amplifier to 450 Kilocycles.

The I-F amplifier employs two triple-tuned I-F transformers and under no condition should their trimmer condensers be readjusted just to determine if they are properly tuned. Fig. 5 shows the selectivity curve of a receiver whose I-F amplifier was slightly mis-tuned while Fig. 6 shows a curve made from actual measurements of a receiver which was properly aligned with the use of an oscilloscope. (See Note 3, next page).

1. Conventional Method—

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—Not Electrolytic to the plate terminal of the 6R7 tube. (Be sure the oscilloscope is protected from D. C. by connecting a condenser, 0.1 to .05 mf., in series with the lead to the plate of the 6R7 tube).

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control to the right (ON), turn the tone control to the left (TREBLE) and turn the Phantom Conductor switch to the left (OFF).

(d) Set the signal generator to 450 kilocycles. See Instructions supplied with signal generator and oscilloscope.

(e) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum amplitude and symmetry of the selectivity curve on the resonance line (R).

NOTE: Keep the signal generator output as low as possible in order to prevent AVC action in the receiver.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer (TERT) of the 1st. tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (DO NOT FORCE ADJUSTING SCREW).

(h) Adjust the top (Sec) and then the bottom (Pri) trimmers of the 1st. I-F transformer for maximum output.

(i) Transfer the lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom (Pri) trimmer of the 1st. I-F transformer. Then adjust the middle trimmer by opening until maximum output is obtained. DO NOT READJUST TOP OR BOTTOM TRIMMERS AFTER THE MIDDLE TRIMMER HAS BEEN ADJUSTED.

2. Oscilloscope Method.

(a) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows: The binding post marked "GND" should be connected to the receiver chassis and the other binding post should be connected

—to P2 of the other Output tube.

(b) Connect the output of the signal generator through a .02 mf. condenser, to the top cap of the 6K7 I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GND. terminal of the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE), and turn the Phantom Control Switch to the left (OFF).

(d) Set the signal generator to 450 Kilocycles.

(e) Adjust the trimmer condensers on the top of the 2nd. I-F transformer for maximum output. Fig. 2 (Item 12).

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc-Mod. I-F transformer so that it is moderately tight. (Do not force adjustment screw).

(h) Increase the output of the signal generator and adjust the top trimmer (Sec) of the 1st. I-F transformer for maximum symmetry and amplitude.

(i) Adjust the bottom trimmer (Pri) of the 1st. I-F transformer for maximum amplitude.

(j) Reduce the output of the signal generator and adjust the middle trimmer of the 1st. I-F transformer for maximum symmetry and amplitude.

Aligning R-F Amplifier.

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be in series with the output lead of the signal generator and for the high-frequency band a 400 Ohm carbon resistor should be used in place of the condenser.

Each band should be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc.," "R-F" (Fig. 4) and "Ant." (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 Kilocycles less than the fundamental frequency. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 Kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the B-C "OSC" series trimmer, Illus. -27, Fig. 4, set the signal generator to 600 Kilocycles and then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

(C) SIGNAL INPUT FREQUENCIES

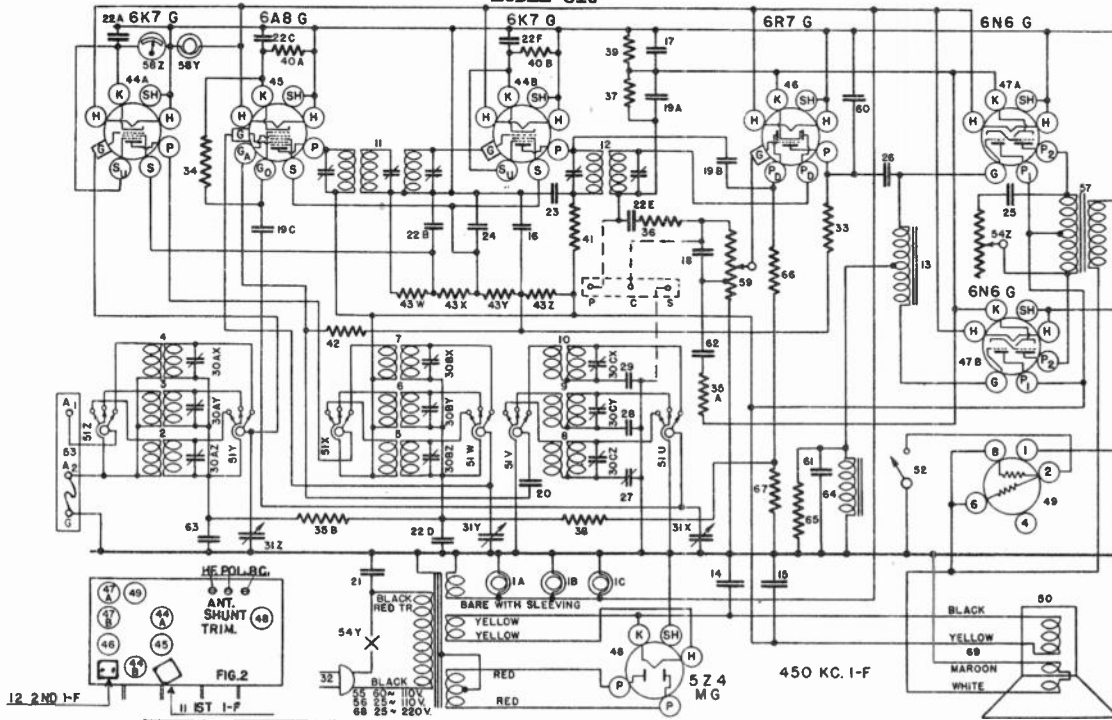
	Shunt Aligned	Series Aligned
American Broadcast (BLUE)	1700 Kc.	600 Kc.
Pol. & Amateur (RED)	8000 Kc.	
High-Frequency (GREEN)	18000 Kc.	

NOTE 3: The high frequency oscillator on this receiver is neutralized by the addition of some small capacity coupling between the oscillator grid and the R-F grid of the 6A8 tube. This is accomplished by loosely wrapping a piece of insulated hook-up wire around the

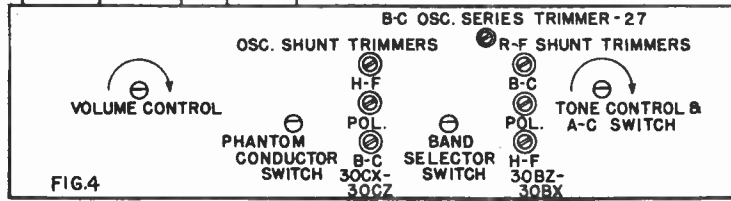
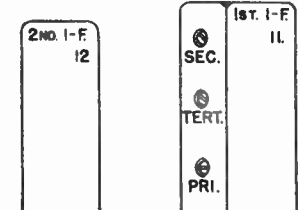
R-F grid lug and connecting it to the oscillator grid lug on the band selector switch.

It is necessary on some sets to adjust or even remove this coupling, in which case the wire should be unwrapped and threaded through the extra hole in the grid end of the R-F coil.

MODEL 816



Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W -37922	Dial Light	37	-36321	Resistor, 400,000 Ohm 1/4W. Insulated
	G3 -37965	Dial Light Socket Assembly	38	-37245	Resistor, 1.5 Megohm 1/4W. Carbon
	W -40570	Dial Light Shield (2)	39	W -24537	Resistor, 60 Ohm 1/4W. Flexible
2	G110-32000	Ant. Coil-B-C-B.	40A	W -28589	Resistor, 350 Ohm 1/4W. Flexible
3	G111-32000	Ant. Coil-Pol-B.	40B	W -28589	Resistor, 350 Ohm 1/4W. Flexible
4	G112-32000	Ant. Coil-H-F-B.	41	W -23013	Resistor, 2,000 Ohm 1/4W. Flexible
5	G76-32001	R-F. Coil-B-C-B.	42	W -37987	Resistor, 15,000 Ohm 1W. Wire Wound
6	G83-32001	R-F. Coil-Pol-B.	43Z		1000 Ohm
7	G84-32001	R-F. Coil-H-F-B.	43Y	W -41484	7000 Ohm Candohm
8	G98-32002	Osc. Coil-B-C-B.	43X		3500 Ohm
9	G99-32002	Osc. Coil-Pol-B.	43W		15000 Ohm
10	G107-32002	Osc. Coil-H-F-B.	44A	G151-36400	Socket Type 6K7
11	G112-32004	1st I-F Assembly	44B	G151-36400	Socket Type 6K7
12	G114-32004	2nd I-F Assembly	45	G156-36400	Socket Type 6A8
13	G12-29535	A-F Driver Choke	46	G164-36400	Socket Type 6R7
14	W -36065	Condenser, 35 Mfd. 400 V. Electrolytic	47A	G165-36400	Socket Type 6N6
15	W -41080	Condenser, 12 Mfd. 200 V. Electrolytic	47B	G165-36400	Socket Type 6N6
16	W -41081	Condenser, 16 Mfd. 250 V. Electrolytic	48	G154-36400	Socket Type 5Z4
17	W -41598	Condenser, 50 Mfd. 25 V. Electrolytic	49	G167-36400	Socket Type 5 Prong (W41187 tube)
18	G6-34002	Condenser, .00025 Mfd. Molded	W -27981A		Tube Shield Base
19A	G2-34002	Condenser, .0001 Mfd. Molded	W -40911		Tube Shield
19B	G2-34002	Condenser, .0001 Mfd. Molded	50	C -40910	Speaker 542 CJ 4
19C	G2-34002	Condenser, .0001 Mfd. Molded	51	W -41486	Band Selector Switch
20	W -35139	Condenser, .04 Mfd. 400 V.	52	W -41508	Phantom Control Switch
21	W -30805	Condenser, .01 Mfd. 400 V.	53	G26-26719	Ant. & Grid Terminal Assembly
22A	W -36541	Condenser, .02 Mfd. 200 V.	54Z		Tone Control
to	W -36541	Condenser, .02 Mfd. 200 V.	54Y		A-C Switch
22F	W -36541	Condenser, .02 Mfd. 200 V.	55		Power Transformer 110 V. 60 Cy.
23	W -30488	Condenser, .02 Mfd. 400 V.			Power Transformer 110 V. 25 Cy.
24	W -35936	Condenser, .05 Mfd. 200 V.			Power Transformer 220 V. 25 Cy.
25	W -23615	Condenser, .05 Mfd. 400 V.	57	G53	Audio Output Transformer
26	W -29910A	Condenser, .25 Mfd. 200 V.	58Z	W -41259	Tuning Meter
27	G7-40769	B-C Osc. Series Trimmer Condenser	58Y	W -41464	Tuning Meter Bulb
28	G7-34000	Pol. Osc. Series Trimmer Cond. (1450Mmfd.)	59		Volume Control 3 Megohm tap 1 Meg.
29	G20-34000	H-F Osc. Series Fixed Cond. (4910Mmfd.)	60	G1-34002	Condenser .00025 Mfd. Molded
30	W -35951	3 Section Shunt Trimmer Cond. Assy.	61	W -27216	Condenser .05 Mfd. 200 V.
31	C52-33002	3 Section Var. Tuning Condenser	62	W -34713	Condenser .035 Mfd. 180 V.
	MG-22-41475	Dial Drive Assembly Complete	63	W -32379	Condenser .02 Mfd. 200 V.
	C -41501	Dial	64	G13-29535	Compensator Choke
	W -41136A	Dial Mask	65		Resistor 20,000 Ohm 1/4W. Carbon
	W -40485	Long Hand	66		Resistor 200,000 Ohm 1/4W. Insulate
	W -41145	Short Hand	67		Resistor 500,000 Ohm 1/4W. Carbon
	W -40486	Hand Mtg. Screw		C	Escutcheon
	W -41157	Driver Belt		G	Escutcheon Retaining Spring
32	B -33906	Power Cord & Plug		B	Glass Lens (Bezel)
33	W -24990	Resistor, 25,000 Ohm 1/4W. Carbon		B	Lens Retaining Spring
34	W -21237A	Resistor, 60,000 Ohm 1/4W. Carbon		W	Knob (3)
35A	W -35600	Resistor, 100,000 Ohm 1/4W. Insulated		W	Knob (2)
35B	W -35600	Resistor, 100,000 Ohm 1/4W. Insulated		W	Rubber Mtg. Foot
36	W -23403	Resistor, 150,000 Ohm 1/4W. Carbon			



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6A8G	Modulator	6.3	240	85	Neg	0	Neg	85
6K6G	Oscillator	6.3	145	145	Neg	0	—	—
6U7G	1st I-F Amp	6.3	240	85	Neg	0	—	—
6U7G	2nd I-F Amp	6.3	210	85	Neg	0	—	—
6Q7G	Det., AVC & 1st A-F Amp	6.3	120	—	Neg	0	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
5Y3G	Rectifier	5.0	—	—	—	240	—	—

Power output approximately 5.5 watts.  
 Power consumption approximately 70 watts at 117.5 volts  
 Voltage drop across speaker field 80 volts

CONNECTING OUTPUT METER

Connect the output meter to the plates of the two 6K6G Output tubes. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier to 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F assm. for maximum output. (Item 9, Fig. 2)

(f) Adjust both trimmers located on top of the 1st I-F assm. for maximum output. (Item 8, Fig. 2)

(g) Check operations (e) and (f) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd. condenser should be connected in series

with the output lead of the signal generator and for the High Frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated for each adjustment, paragraph (c) below.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

NOTE: When shunt aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, to try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(b) To align the B. C. OSC. series trimmer (Fig 2), set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
 Police & Amateur Band  
 Foreign Band

Shunt Alignment  
 1700 Kilocycles  
 6000 " "  
 18 Megacycles

Series Align.  
 600 Kilocycles

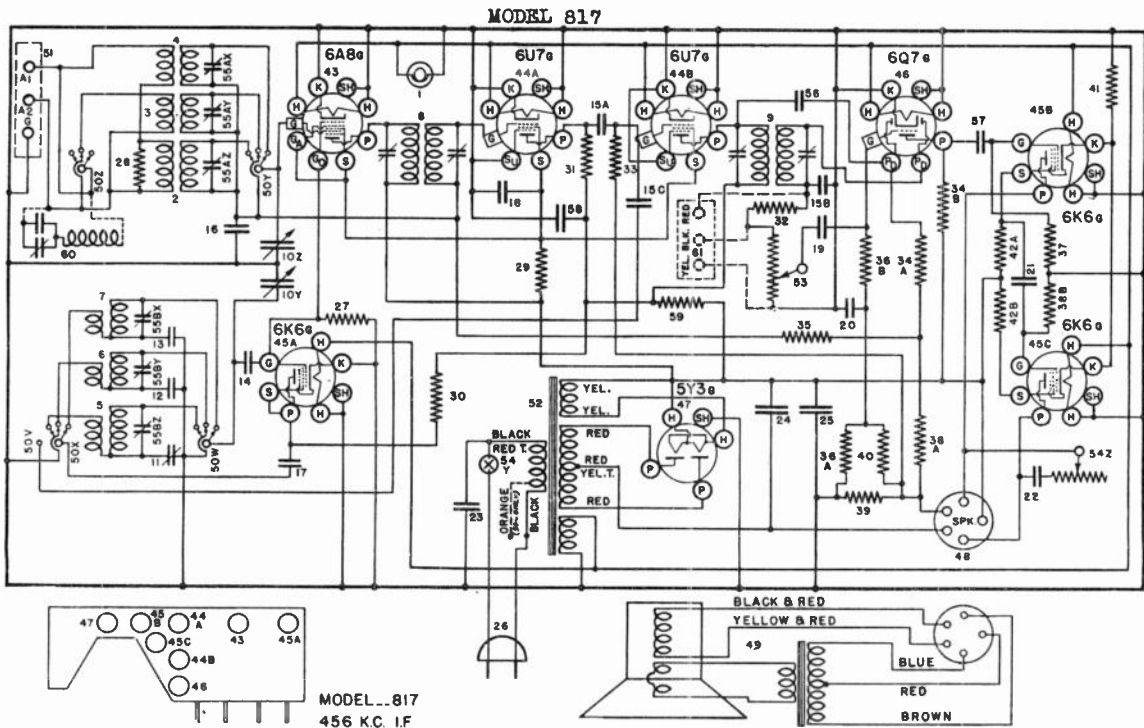
WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 60).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

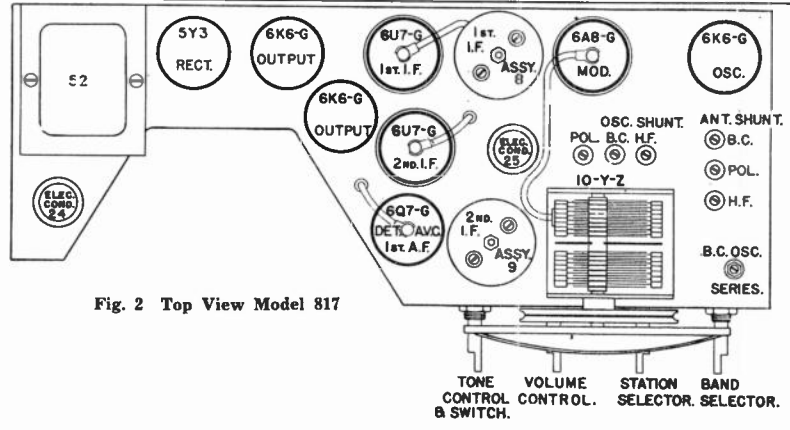
denser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Function	Item No.	Part No.	Name	Function
1	W - 43567	Bulb, Dial Light, 6-8 V.		34A	-21455C	Resistor, 300,000 Ohm. 1/4 W.	
2	W - 44364	Bracket, for Dial Light		35	-21454	Resistor, 1 Megohm 1/4 W.	
3	G138-32000	Ant. Coil, 535-1850 Kc.		36AB	-26577	Resistor, 3 Megohm 1/4 W.	
4	G140-32000	Ant. Coil, 1900-6600 Kc.		37	-36322C	Resistor, 500,000 Ohm. 1/4 W.	
5	G139-32002	Osc. Coil, 535-1850 Kc.		38AB	-23785	Resistor, 500,000 Ohm. 1/4 W.	
6	G138-32002	Osc. Coil, 1900-6600 Kc.		39	-23012A	Resistor, 40 Ohm. 1/4 W. Flex.	
7	G140-32002	Osc. Coil, 6.5-22 Mc.		40	-34883	Resistor, 2 Megohm 1/4 W.	
8	G153-32004	1st I-F Assy.		41	W - 21965	Resistor, 375 Ohm. 1 W. Flex.	
9	G154-32004	2nd I-F Assy.		42AB	-14009	Resistor, 3,000 Ohm. 1/4 W.	
10ZY	G41 - 33001	2 Section Gang Cond.		43	G156-36400	Socket, Type 6A8	
	D - 44080	Glass Dial Face		44AB	G171-36400	Socket, Type 6U7	
	W - 44085B	Dial Mask (Paper)		45ABC	G172-36400	Socket, Type 6K6	
	W - 44084	Dial Support Ring		46	G160-36400	Socket, Type 6Q7	
	C - 44082	Support Brkt., Dial Glass		47	G173-36400	Socket, Type 5Y3	
	G1 - 43564	Pulley and Hub Assy.		48	G103-28807	Socket, Type Speaker	
	W - 41582	Drive Cord (11 1/4 in. Req.)		W - 40911		Tube Shield	
	W - 44134	Drive Shaft		W - 27981A		Base, Tube Shield	
	W - 43549	Shaft Ret. Ring		49	465B1"-12"M"	Speaker Spec., 1-D-1049 "M" V. C. and Cone Assy. for 465BP12"M" Spkr.	
	W - 43542B	Brkt. for Drive Shaft			-44272		
	W - 43561	Drive Spring			-44273	Field Coil for 465BP12"M" Spkr.	
	W - 44299	Dial Hand			-44274	Output Trans. for 465BP12"M" Spkr.	
	W - 40486	Pointer Mtg. Screw		50	W - 43552	Spk. Plug Clamp	
11	W - 40769	B-C. Osc. Series Trimmer			-44049	Band Selector Switch	
12	G23 - 34000	Condenser, 1560 Mmf.		51	G27 - 26719	A1-A2-G. Terminal Assy.	
13	G20 - 34000	Condenser, 4910 Mmf.		52	-44057	Power Trans., 110 V. 60 Cy.	
14	G13 - 34002	Condenser, 35 Mmf.			-44058	Power Trans., 110 V. 50 Cy.	
15ABC	G2 - 34002	Condenser, 100 Mmf.			-44059	Power Trans., 220 V. 50 Cy.	
16	W - 35936	Condenser, .05 Mf. 200 V.			-44060	Power Trans., 110 V. 25 Cy.	
17	W - 35139	Condenser, .004 Mf. 400 V.			-44061	Power Trans., 220 V. 25 Cy.	
18	W - 22688	Condenser, .1 Mf. 400 V.		53	W - 44061	Volume Control, 1 Meg.	
19	W - 27652	Condenser, .003 Mf. 200 V.		54Z	-44081	Tone Control, 100,000 Ohm.	
20	W - 28621	Condenser, .02 Mf. 400 V.		54Y	-44024	Line Switch	
21	W - 30488	Condenser, .05 Mf. 400 V.		55	W - 35951	3 Sect. Shunt Trimmer Assy.	
22	W - 23615	Condenser, .01 Mf. 400 V.		56	G3 - 34002	Condenser, 500 Mmf.	
23	W - 30805	Condenser, .01 Mf. 400 V.		57	W - 34647	Condenser, .006 Mf. 400 V.	
24	W - 44054	Condenser, 30 Mf. 350 V.		58	W - 32378	Condenser, .01 Mf. 400 V.	
25	W - 36057	Condenser, 40 Mf. 300 V.		59	W - 23013	Resistor, 2,000 Ohm. 1 1/4 W. Flex.	
26	B - 33906A	Power Cord and Plug		W - 44088	W - 50164A	Knob	
27	-21237A	Resistor, 60,000 Ohm. 1/4 W.		W - 43553	W - 43553	Rubber Mtg. Foot	
28	-22196	Resistor, 20,000 Ohm. 1/4 W.		W - 44225	W - 44225	Grille Bar (2)	
29	-44008	Resistor, 10,000 Ohm. 2 W.		W - 44092	W - 44092	Grille Cloth	
30	-23616	Resistor, 15,000 Ohm. 1 W.		W - 7C	W - 7C	Cabinet	
31	-31093	Resistor, 2,700 Ohm. 1/4 W.		B - 44226B	B - 44226B	Escutcheon	
32	-35600	Resistor, 100,000 Ohm. 1/4 W.		G165-32004	G165-32004	Wave Trap	
33	-21875	Resistor, 100,000 Ohm. 1/4 W.					





# MODEL 818

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Co	Ca
6A8G	Modulator	6.3	240	85	Neg	0	Neg	85
6K6G	Oscillator	6.3	145	145	Neg	0	—	—
6U7G	1st I-F Amp	6.3	240	85	Neg	0	—	—
6U7G	2nd I-F Amp	6.3	210	85	Neg	0	—	—
6Q7G	Det., AVC & 1st A-F Amp	6.3	120	—	Neg	0	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
5Y3G	Rectifier	5.0	—	—	—	240	—	—

Power output approximately 5.5 watts.  
 Power consumption approximately 70 watts at 117.5 volts.  
 Voltage drop across speaker field 80 volts.

### Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F assm. for maximum output. (Item 9, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F assm. for maximum output. (Item 8, Fig. 2).

(g) Check operations (e) and (f) for more accurate adjustment.

### Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated for each adjustment, ¶ (C) below.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

### (C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
 Police & Amateur Band  
 Foreign Band

Shunt Align.  
 1700 Kilocycles  
 6000 Kilocycles  
 18 Megacycles

Series Align.  
 600 Kilocycles

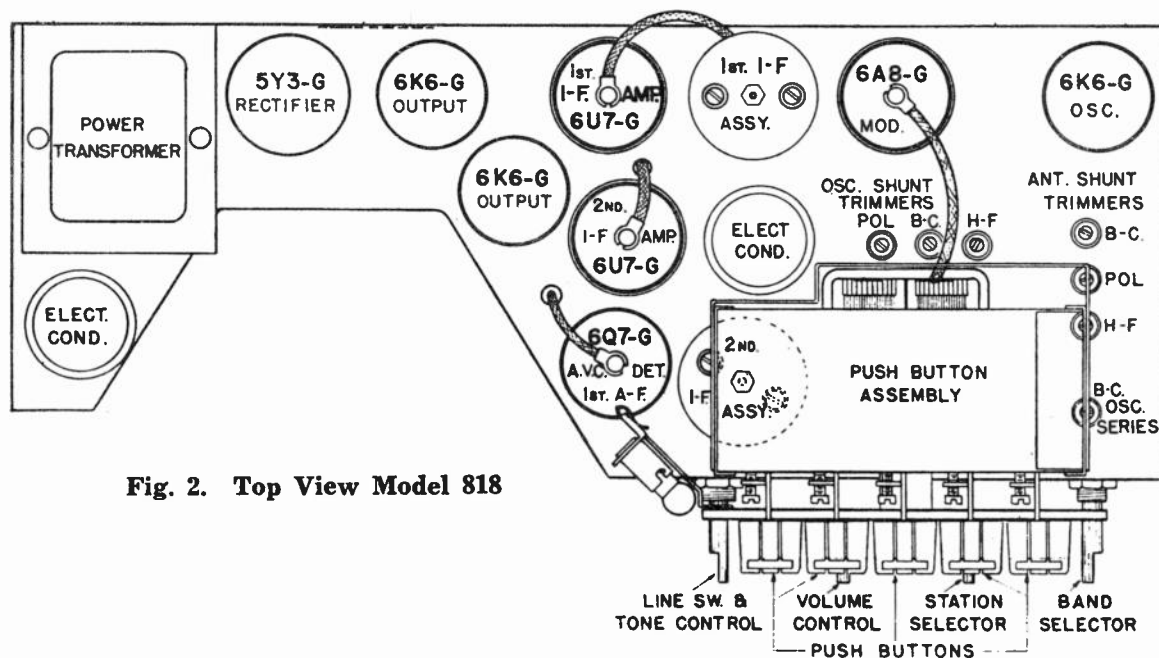


Fig. 2. Top View Model 818

MODEL 818

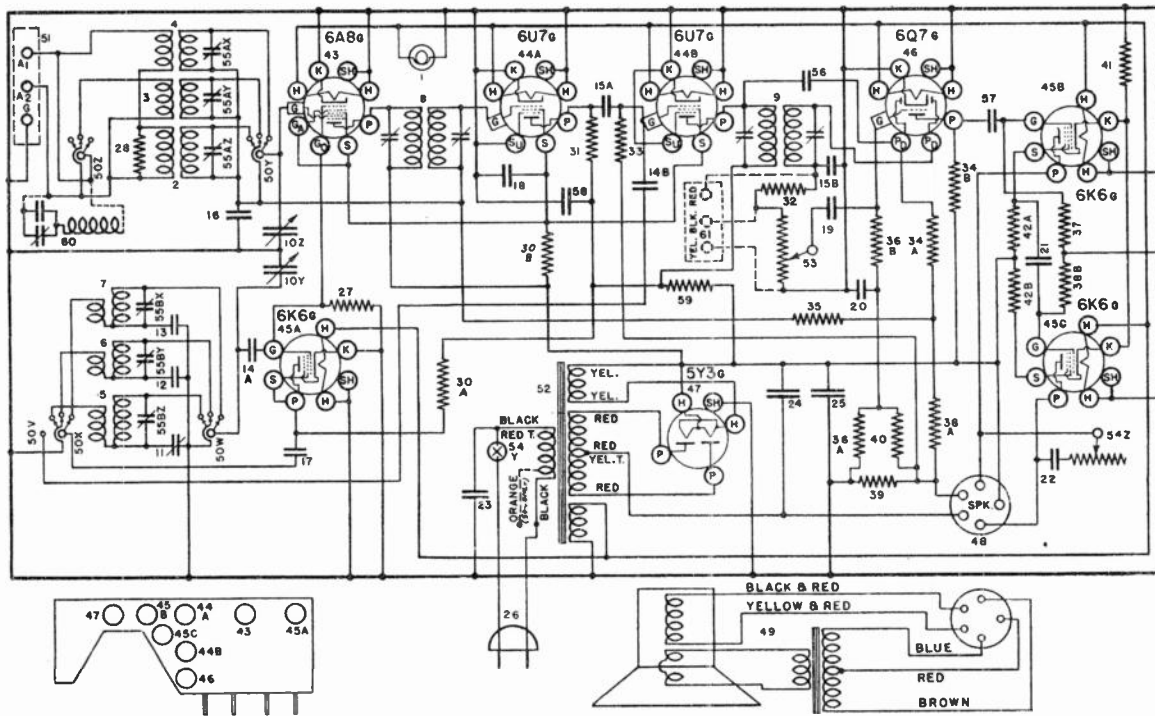


FIG. 1—WIRING DIAGRAM—MODEL 818

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Bulb, Dial Light, 6-8 V.	44AB	G171-36400	Socket, Type 6U7
2	G4-45398	Bracket, for Dial Light	45ABC	G172-36400	Socket, Type 6K6
3	G138-32000	Ant. Coil, 535-1850 Kc.	46	G160-36400	Socket, Type 6Q7
4	G140-32000	Ant. Coil, 1900-6600 Kc.	47	G173-36400	Socket, Type 5Y3
5	G139-32002	Osc. Coil, 535-1850 Kc.	48	G103-28807	Socket, Type Speaker
6	G171-32002	Osc. Coil, 1900-6600 Kc.	W	-40911	Tube Shield
7	G172-32002	Osc. Coil, 6.5-22 Mc.	W	-27981A	Basic, Tube Shield
8	G153-32004	1st I-F. Assy.	49	465BP12" M"	Speaker Spec., 1-D-1049 "M" V. C. and Cone Assy. for 465BP12" M"
9	G154-32004	2nd I-F. Assy.		-44272	Spkr.
10ZY	G41-33001	2 Section Gang Cond.		-44273	Field Coil for 465BP12" M" Spkr.
	D-4480C	Glass Dial Face		-44274	Output Trans. for 465BP12" M" Spkr.
	W-44085B	Dial Mask (Paper)	W	-43552	Spk. Plug Clamp
	W-44081A	Dial Support Ring	50	-44049	Band Selector Switch
	C-44082E	Support Brkt., Dial Glass	51	G27-26719	A1-A2-G. Terminal Assy.
	G10-43564	Pulley and Hub Assy. (Pointer Shaft)	52	-44057	Power Trans., 100 V. 60 Cy.
	G11-43564	Pulley and Hub Assy. (Cond. Gang)		-44058	Power Trans., 110 V. 50 Cy.
	-41582	Drive Cord		-44059	Power Trans., 220 V. 50 Cy.
	MG29-45607	Drive Mtg. Bracket and Pulley Assy.		-44060	Power Trans., 110 V. 25 Cy.
	W-45644	Pointer Shaft		-44061	Power Trans., 220 V. 25 Cy.
	W-50325A	Retaining Ring (Pointer Shaft)	53	-44081	Volume Control, 1 Meg.
	W-44299	Dial Pointer	54Z	-44024B	(Tone Control, 100,000 Ohm Line Switch
	W-40486	Screw (Pointer Mtg.)	54Y		
	W-43561	Cord Tension Spring	55	W-35951A	3 Sect. Ant. Shunt Trimmer Assy.
	W-45716	Drive Shaft (Manual)	W	-45714	3 Sect. Osc. Shunt Trimmer Assy.
	W-43549	Retaining Ring (Drive Shaft)	W	-32741	Condenser, 500 Mmf.
	W-43542B	Drive Shaft Mtg. Bracket	57	W-34647	Condenser, .006 Mf., 400 V.
	W-44701C	Grommet for Drive Shaft	58	W-32378	Condenser, .01 Mf., 400 V.
	-40769	B-C. Osc. Series Trimmer	59	W-23013	Resistor, 2,000 Ohm 1 1/4 W. Flex.
11	G23-34000	Condenser, 1560 Mmf.			
12	G20-34000	Condenser, 4910 Mmf.			
13	G13-34002	Condenser, 35 Mmf.			
14AB	G2-34002	Condenser, 100 Mmf.			
15AB	G2-34002	Condenser, 100 Mmf.			
16	W-35936	Condenser, .05 Mf., 200 V.			
17	W-35139	Condenser, .004 Mf., 400 V.			
18	W-22688	Condenser, .1 Mf., 400 V.			
19	W-27652	Condenser, .003 Mf., 200 V.			
20	W-28621	Condenser, .02 Mf., 200 V.			
21	W-30488	Condenser, .02 Mf., 400 V.			
22	W-23615	Condenser, .05 Mf., 400 V.			
23	W-30805	Condenser, .01 Mf., 400 V.			
24	W-44054	Condenser, 30 Mf., 350 V.			
25	W-36057	Condenser, 40 Mf., 300 V.			
26	B-33906A	Power Cord and Plug			
27	-21237A	Resistor, 60,000 Ohm 1/4 W.			
28	-22196	Resistor, 20,000 Ohm 1/4 W.			
30A	-23616	Resistor, 15,000 Ohm 1 W.			
30B	-23616	Resistor, 15,000 Ohm 1 W.			
31	-24814	Resistor, 7,000 Ohm 1/2 W.			
32	-35600	Resistor, 100,000 Ohm 1/4 W.			
33	-21875	Resistor, 100,000 Ohm 1/4 W.			
34AB	-21455C	Resistor, 300,000 Ohm 1/4 W.			
35	-21454	Resistor, 1 Megohm 1/4 W.			
36AB	-26577	Resistor, 3 Megohm 1/4 W.			
37	-36322C	Resistor, 500,000 Ohm 1/4 W.			
38AB	-23785	Resistor, 500,000 Ohm 1/4 W.			
39	W-23012A	Resistor, 40 Ohm 3/4 W. Flex.			
40	-34883	Resistor, 2 Megohm 3/4 W.			
41	W-21965	Resistor, 375 Ohm 1 W. Flex.			
42AB	-44009	Resistor, 3,000 Ohm 1/4 W.			
43	G156-36400	Socket, Type 6A8			
			44AB	G171-36400	Socket, Type 6U7
			45ABC	G172-36400	Socket, Type 6K6
			46	G160-36400	Socket, Type 6Q7
			47	G173-36400	Socket, Type 5Y3
			48	G103-28807	Socket, Type Speaker
			W	-40911	Tube Shield
			W	-27981A	Basic, Tube Shield
			49	465BP12" M"	Speaker Spec., 1-D-1049 "M" V. C. and Cone Assy. for 465BP12" M"
				-44272	Spkr.
				-44273	Field Coil for 465BP12" M" Spkr.
				-44274	Output Trans. for 465BP12" M" Spkr.
			W	-43552	Spk. Plug Clamp
			50	-44049	Band Selector Switch
			51	G27-26719	A1-A2-G. Terminal Assy.
			52	-44057	Power Trans., 100 V. 60 Cy.
				-44058	Power Trans., 110 V. 50 Cy.
				-44059	Power Trans., 220 V. 50 Cy.
				-44060	Power Trans., 110 V. 25 Cy.
				-44061	Power Trans., 220 V. 25 Cy.
			53	-44081	Volume Control, 1 Meg.
			54Z	-44024B	(Tone Control, 100,000 Ohm Line Switch
			54Y		
			55	W-35951A	3 Sect. Ant. Shunt Trimmer Assy.
			W	-45714	3 Sect. Osc. Shunt Trimmer Assy.
			W	-32741	Condenser, 500 Mmf.
			57	W-34647	Condenser, .006 Mf., 400 V.
			58	W-32378	Condenser, .01 Mf., 400 V.
			59	W-23013	Resistor, 2,000 Ohm 1 1/4 W. Flex.
			60	G165-32004	Wave Trap

## MODELS 819, J819, 1019

Model 1019 is the same as model 819 except for the cabinet, dial, escutcheon and knobs used. There are two versions of the model 819 in the field. The first few releases had an electrical (magnetune) push button tuning system and two 2526GT Rectifier tubes. The later releases had a mechanical push button tuning system, loop antenna, two 5Y3G Rectifier tubes and a power transformer. Models J-819 and 1019 falls in this group.

### Aligning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output lead of the signal generator through a .0002 mf. condenser to the receiver antenna lead (Blue). Connect the signal generator ground lead through a .01 mf. or smaller condenser to the receiver ground lead (Black).

(b) Set the signal generator to 455 kilocycles. Turn the receiver band switch to the Broadcast band (left), the tone control switch to the speech position (left) open the gang condenser all the way then turn the volume control on full (all the way to the right).

(c) Adjust the two trimmer condensers on the second I-F assembly for maximum output (Fig. 2).

(d) Adjust the two trimmer condensers on the first I-F assembly for maximum output. (Fig. 2).

(e) Repeat (c) and (d) for more accurate adjustments.

### Aligning The R-F Amplifier.

(a) For aligning the broadcast band the setup remains the same. Using a .0002 mf. condenser for a dummy antenna and etc.

(b) For models without loop antenna set the signal generator to 1725 kilocycles. For models with a loop antenna set the signal generator to 1550 kilocycles. Open condenser gang all the way, turn band switch to left (B. C.), tone control to left (speech) and the volume control on full.

(c) For models without the loop antenna adjust B. C. oscillator shunt trimmer condenser (Fig. 2) for maximum output (gang does not have to tune through this signal). For models with a loop antenna there are two oscillator shunt trimmer condensers as will be noted in figure 2. Close the front oscillator shunt trimmer all the way, then open about 1/2 turn. Proceed to tune in with the other (rear) trimmer the 1550 kilocycle signal for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to generator signal for maximum output (approximately 140 on the dial).

(f) On models without the loop adjust the B. C. antenna shunt trimmer for maximum output, see (Fig. 2). On models with a loop a B. C. antenna shunt trimmer is located on top the loop antenna; adjust for maximum output.

Models equipped with a loop antenna have provisions for series aligning the oscillator circuit:

(1) Set signal generator to 600 kilocycles.

(2) Tune in generator signal on receiver.

(3) While rocking tuning condenser back and forth adjust oscillator series trimmer (Fig. 2) for maximum output. Then repeat (d) and (f) for more accurate alignment.

(g) Change dummy antenna from a .0002 mf. condenser to a 250 carbon resistor.

(h) For models without loop antenna set the signal generator to 5.8 megacycles. Open gang condenser, turn band switch to center position, T. C. to left (speech) and volume on full. For models with a loop antenna set signal generator to 5.0 megacycles.

(i) Adjust "Pol." oscillator shunt trimmer condenser (Fig. 2) for maximum output.

(j) For models without loop antenna set signal generator to 5.5 megacycles. For models with a loop antenna set signal generator to 4.0 megacycles.

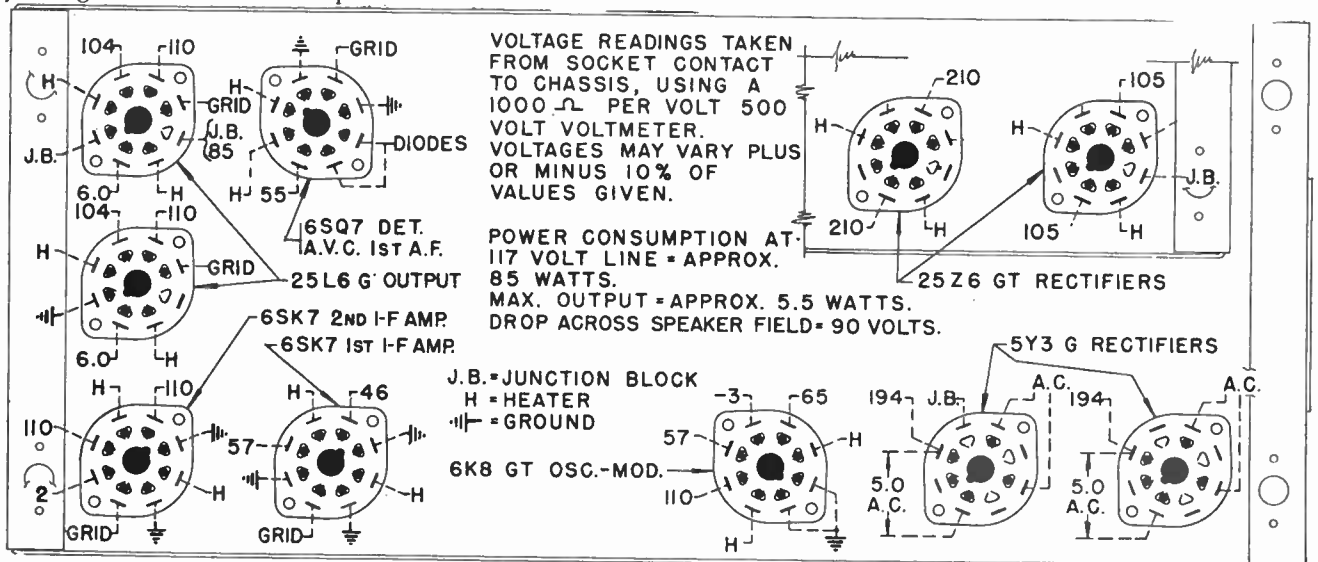
(k) Tune in generator signal with manual control for maximum output (approximate 5.5 or 4.0 megacycles on the dial). Adjust the "Pol." antenna shunt trimmer condenser for maximum output.

(l) Set signal generator to 18.3 megacycles.

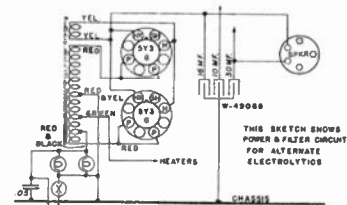
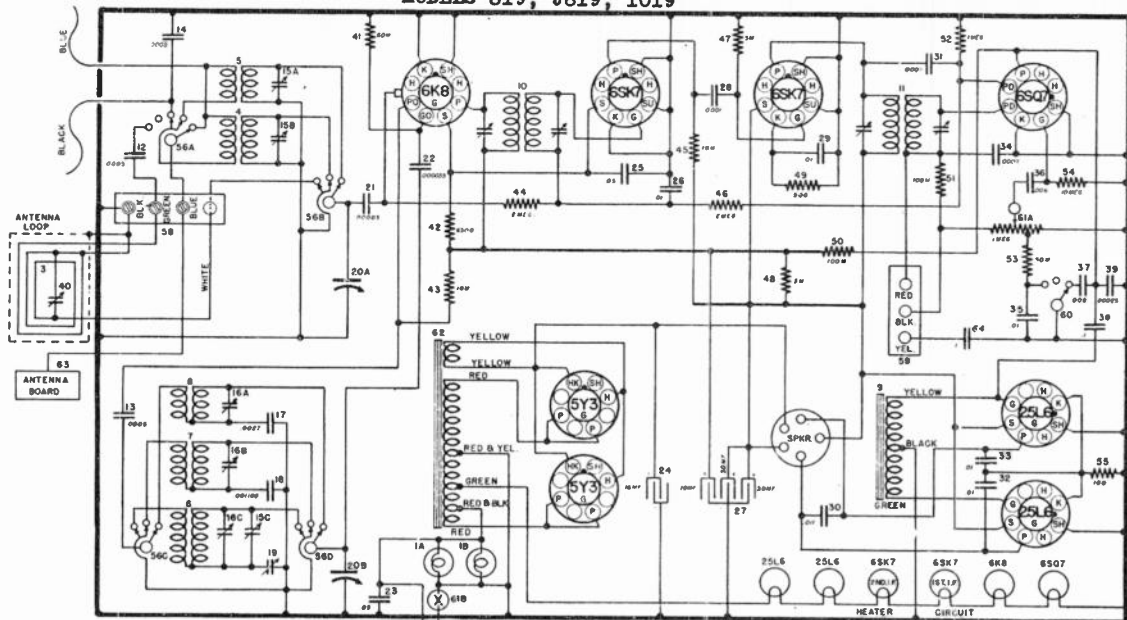
(m) With gang open and band switch turned to the right (H. F.), adjust the H. F. (high frequency) oscillator trimmer (Fig. 2) for maximum output. Care should be taken to align the oscillator on the fundamental and not the image frequency. When correctly aligned the image should be heard approximately 17.4 on the dial but will be comparatively weak compared to the fundamental signal.

(n) Set signal generator to 18.0 megacycles.

(o) Tune in the signal generator signal for maximum output; then adjust the H. F. antenna shunt trimmers for maximum output.



MODELS 819, J819, 1019



MODEL -- 819 B 1019

455 KC. I.F.  
BLACK - GROUND  
BLUE - ANTENNA

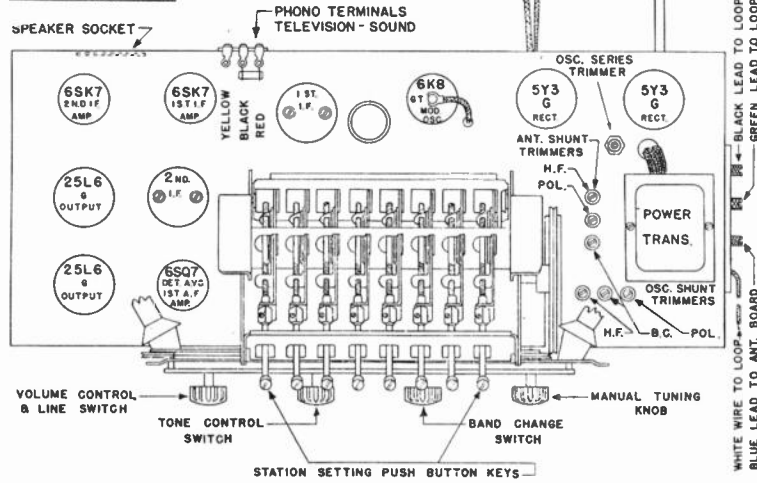


Fig. 2 -Top View Models 819 and 1019

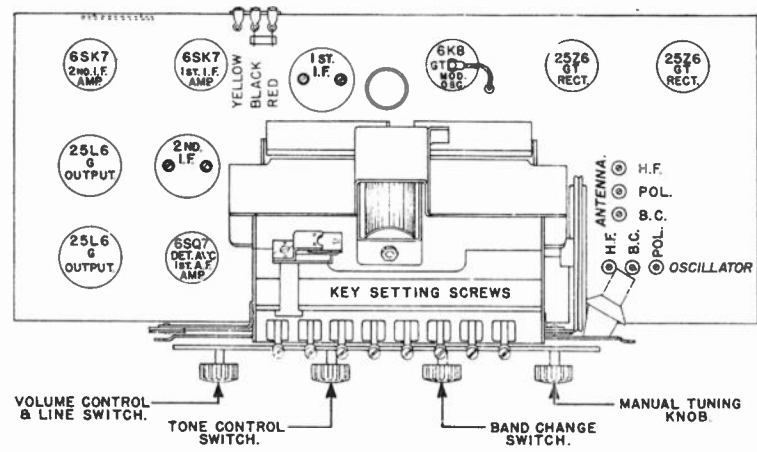
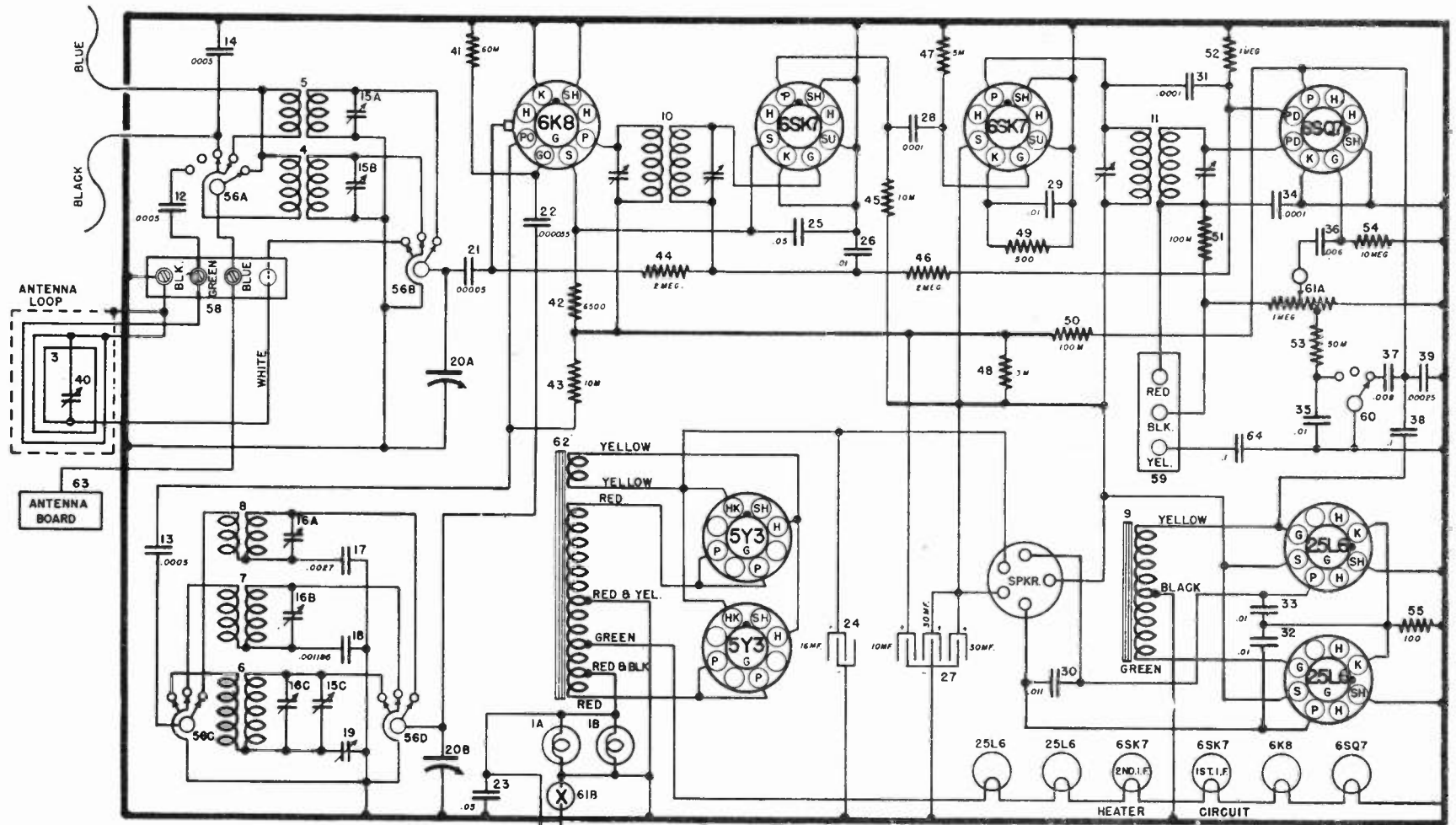
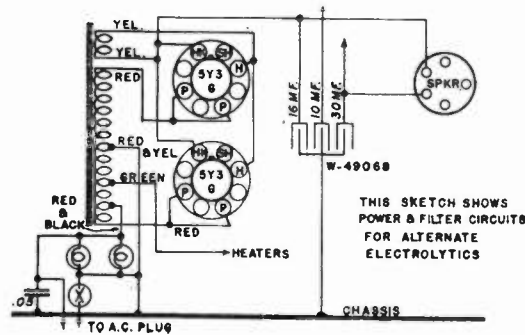


Fig. 3 -Top View Model 819 (No Loop)



MODELS 819, 1019



MODEL -- 819 & 1019  
455 KC. I.F.

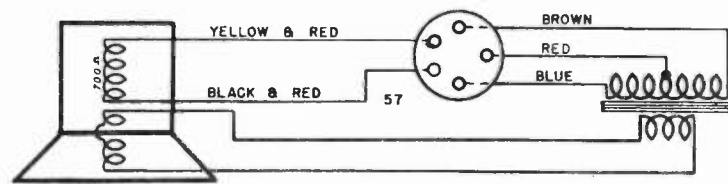


FIG. 1—WIRING DIAGRAM—MODELS 819 and 1019

**PARTS LIST—MODEL 819**  
(Series Using 25Z6 Rectifiers)

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48318	Dial Lamp—110 Vo't		—48622	V. C. and Cone Assy.—"R"
	G1 —48303	Socket—Dial Lamp		—43979	Cardboard Ring—Cone Mounting
	—48302	Cover—For Dial Lamp		—48624	Field Coil (700 Ohms) "R"
2	—45784	Power Cord and Plug		—48623	Output Transformer
3	G198—32000	Antenna Coil, H. F.	56	—48241	Band Change Switch
4	G197—32000	Antenna Coil, Pol.	57	G41 —26719	Phono Terminal Board Assy.
5	G196—32000	Antenna Coil, B. C.	58	—48243	Tone Control Switch
6	G199—32002	Oscillator Coil, H. F.	59	—48242	Switch and Volume Control—1 Meg. tapped
7	G198—32002	Oscillator Coil, Pol.			
8	G197—32002	Oscillator Coil, B. C.	60	G193—32004	455 Kc. Wave Trap
9	G4 —47909	Solenoid Tuning Coil	61	G8 —47866	Switch—Push Button
10	G12 —29535	Audio Input Choke		—44635	Spring—Switch Blade
11	G222—32004	1st I-F. Assy.—455 Kc.		G2 —47866	Contact and Blade Assy.
12	G228—32004	2nd I-F. Assy.—455 Kc.		G3 —47866	Bottom and Contact Assy. (Switch)
13	G3 —34002	Condenser, .0005 Mf. Mica		G2 —47880	Push Button Tuning Unit—Complete
14	G3 —34002	Condenser, .0005 Mf. Mica		G32 —47880	Riveted Key Assy.
15	—35951A	3 Section Ant. Shunt Trimmer		G29 —47880	Rocker Plate and Gear Assy.
16	—35936	Condenser, .05 Mf. 200 V.		MG23—47810	Riveted Switch Rocker Bar
17	—45713	3 Section Csc. Shunt Trimmer		G27 —47880	Armature and Pin Assy.
18	G11 —34005	Condenser, .0027 Mf. Mica		—48263	Magnet Mtg. Plate
19	G14 —34005	Condenser, .001185 Mf. Mica		—48368	Push Button Switch
20	G14 —34002	Condenser, .0004 Mf. Mica		—48652	Magnet Rocker Plate
21	G77 —33001	2 Section Var. Tuning Condenser		—47849C	Glass Dial
22	G13 —34002	Condenser, .000035 Mf. Mica		MG27—47810	Bracket—Dial Support
23	—32380	Condenser, .05 Mf. 200 V.		—48187	R. H. Clip—Dial Mtg.
24	—23615	Condenser, .05 Mf. 400 V.		—46020	L. H. Clip—Dial Mtg.
25	—23191A	Condenser, .01 Mf. 400 V.		—48280	Clip—Dial Mtg.
26	—47702	Condenser, 30 Mf. 125 V.		—48301	Cushion—Dial Glass
27	G2 —34002	Condenser, .0001 Mf. Mica		—48285A	Pointer—Dial Hand
28	—47809	Condenser, 30-30-10 Mf. 135 V.		G21 —43564	Pulley and Hub Assy.
29	—23191A	Condenser, .01 Mf. 400 V.		—48292	Drive Shaft and Pulley
30	—23191A	Condenser, .01 Mf. 400 V.		—43878A	Bracket—Shaft Mtg.
31	—23191A	Condenser, .01 Mf. 400 V.		—51071	"C" Washer—Shaft Retaining
32	G2 —34002	Condenser, .0001 Mf. Mica		34—41582	Drive Cord (85½" Long)
33	—24049C	Condenser, .1 Mf. 200 V.		—46290	Cord Clamp—Drive Cord
34	—48667	Condenser, .01 Mf. 160 V.		—50590	Spring—Cord Tension
35	G2 —34002	Condenser, .0001 Mf. 200 V.		—48402	Felt Light Guard
36	—34713	Condenser, .006 Mf. 160 V.		—49285A	Guide—Cord on Pulley
37	—48560	Condenser, .008 Mf. 160 V.		9HM	Cabinet
38	—24049C	Condenser, .1 Mf. 200 V.		—47854	Shipping Carton
39	G1 —34002	Condenser, .00025 Mf. Mica		MG32—47811	Push Button Hinge Assy.
40	—35928	Resistor, 60,000 Ohms ¼W. Ins.		—47767	Push Button—Magnetune
41	—36317	Resistor, 10,000 Ohms ¼W. Ins.		—48277	Rod—Push Button Mtg.
42	—35934	Resistor, 6,500 Ohms ¼W. Ins.		—48284	Cabinet Back
43	—35600	Resistor, 100,000 Ohms ¼W. Ins.		—48185	Escutcheon
44	—44009	Resistor, 3,000 Ohms ¼W. Ins.		—46464	Thumb Screw—Back Mtg.
45	—27121	Resistor, 5,000 Ohms ½W. Carb.		—48283	Speaker Baffle
46	—27121	Resistor, 5,000 Ohms ½W. Carb.		—47217	Grommet—Speaker Baffle
47	—35927	Resistor, 2 Megohms ¼W. Ins.		—47219	Headed Bushing—Speaker Baffle
48	—47815	Resistor, 500 Ohms ½W. W. W.		—48393	Dust Cloth—Speaker Baffle
49	—35600	Resistor, 100,000 Ohms ¼W. Ins.		—49440	Escutcheon Mtg. Strip
50	—35600	Resistor, 100,000 Ohms ¼W. Ins.		—47843	Escutcheon Mtg. Screw, FS-18
51	—35602	Resistor, 1 Megohm ¼W. Ins.		MG31—47811	Instruction Envelope Assy.
52	—37472	Resistor, 50,000 Ohms ½W. Carb.		—48751	Call Letter Sheet
53	—50956	Resistor, 10 Megohms ¼W. Ins.		—48749	Celluloid Call Letter Cover
54	—47814	Resistor, 100 Ohms ½W. W. W.		—48297	Knob—Band Switch
55	594-BP-15"M"	Speaker—Mfg. Spec. No. 1-D-1581		—48999	Knob—Tone Control
	—48891	V. C. and Cone Assy.—"M" only		—48298	Knob—V. C.—Tuning
	—48892	Field Coil (700 Ohms) "M"		—45055	Grommet—Chassis Mtg.
	—48893	Output Transformer—"M"		—44772	Chassis Hold Down Screw, FS-58
	—43678	Cardboard Ring—Cone Mounting		—45579	Chassis Hold Down Washer, FS-58
	—44682	5 Prong Speaker Plug			
	594-BP-15"R"	Speaker—Mfg. Spec. No. F-5735			

**PARTS LIST — MODELS 819, J-819, 1019**  
(Model with 5Y3G Rectifiers)

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —48318	Dial Lamp—110 Volt	62	—48902	Power Trans., 110 V.—60 Cycle
	G1 —48303	Socket—Dial Lamp		—49018	Power Trans., 110 V.—50-60 Cycle
	—48302	Cover—For Dial Lamp		—49067	Power Trans., 110 V.—25-60 Cycle
2	B —45784	Power Cord and Plug		—49019	Power Trans., 220 V.—50-60 Cycle
	B —45769	Power Cord and Plug—220 Volt only and J819	62	—48996	Power Trans., 110 V.—60 Cycle—J819
3	G1 —48821	Loop Antenna—B. C.		—49706	Push Button Tuning Unit
4	G205—32000	Antenna Coil—Pol.	G32	—47880	Riveted Key Assy.
5	G206—32000	Antenna Coil—S. W.	G31	—48762	Rocker Plate and Gear Assy.
6	G210—32002	Oscillator Coil—B. C.		—50561	Screws—Rocker Plate Bearing
7	G211—32002	Oscillator Coil—Pol.		—47877	Adjusting Screw
8	G212—32002	Oscillator Coil—S. W.		—48769	Shafts (End of Adjusting Screw)
9	G12 —29535	Audio Coupling Choke		—38056	No. 8—32 x 1/8" Headless Set Screw
10	G222—32004	1st I-F. Assy.—455 Kc.		—48826	Spring—Push Button Return
11	G228—32004	2nd I-F. Assy.—455 Kc.	MG27	—47849	Bracket—Dial Support
12	G3 —34002	Condenser, .0005 Mf. Mica		—48857	Glass Dial
13	G3 —34002	Condenser, .0005 Mf. Mica		—48187	R. H. Clip—Dial Mtg. (1 Req.)
14	G3 —34002	Condenser, .0005 Mf. Mica		—46020	L. H. Clip—Dial Mtg. (1 Req.)
15	—35951	3 Section—Shunt Trimmer Cond.		—48280	Clip—Dial Mtg. (2 Req.)
16	—45713	3 Section—Shunt Trimmer Cond.		—48301	Cushion—Dial Mtg.
17	G11 —34005	Condenser, .00270 Mf. Mica		—48285	Pointer—Dial Hand
18	G14 —34005	Condenser, .001185 Mf. Mica	G21	—43564	Pulley and Hub Assy.
19	—38989	Condenser, B. C. Csc. Series Trimmer		—48292	Drive Shaft and Pulley
20	G85 —33001	2 Section Var. Tuning Condenser		—43878	Bracket—Drive Shaft Mtg.
21	G5 —34002	Condenser, .00005 Mf. Mica		—51071	"C" Washer—Shaft Retaining
22	G13 —34002	Condenser, .000035 Mf. Mica	G34	—41582	Drive Cord (85 1/2")
23	—23615	Condenser, .05 Mf. 400 V.		—46290	Cord Clamp
23	—30805	Condenser, .01 Mf. 400 V.—J819		—50590	Spring—Cord Tension
24	—46128	Condenser, 16 Mf. 250 V.		—48402	Felt Light Guard
25	—32380	Condenser, .05 Mf. 200 V.		—49285	Guide—Cord on Pulley
26	—23191	Condenser, .01 Mf. 400 V.		9HM	Cabinet
27	—47809	Condenser, 30-30-10 Mf. 135 V.		—47854	Shipping Carton
28	G2 —340C2	Condenser, .0001 Mf. Mica		—48284	Cabinet Back
29	—23191	Condenser, .01 Mf. 400 V.		—46464	Thumb Screws—Back Mtg.
30	—48993	Condenser, .011 Mf. 400 V.		—47843	Screw—Escutcheon Mtg.—FS18
31	G2 —34002	Condenser, .0001 Mf. Mica		—48185	Escutcheon
32	—23191	Condenser, .01 Mf. 400 V.	MG32	—47811	Riveted Push Button Hinge
33	—23191	Condenser, .01 Mf. 400 V.		—48277	Rod—Button to Hinge Mtg.
34	G2 —34002	Condenser, .0001 Mf. Mica		—48729	Push Button—Mech. Unit
35	—48667	Condenser, .01 Mf. 160 V.		—48766	Light Deflector Felt—Escutcheon
36	—34713	Condenser, .006 Mf. 160 V.		—48751	Call Letter Tabs
37	—48560	Condenser, .008 Mf. 160 V.		—48749	Celluloid Cover—Call Tab
38	—24049	Condenser, .1 Mf. 200 V.		—49440	Escutcheon Mtg. Strip
39	G1 —34002	Condenser, .00025 Mf. Mica		—48297	Knob—Band Switch
40	—48822	Single Trimmer—Loop Antenna		—48999	Knob—Tone Control
41	—35928	Resistor, 60,000 Ohms 1/4 W.		—48298	Knob—V. C.—Tuning
42	—35934	Resistor, 6,500 Ohms 1/4 W.		—47843	Bristol Screw—Escut. Mtg.—FS18
43	—36317	Resistor, 10,000 Ohms 1/4 W.		—48283	Speaker Baffle
44	—35927	Resistor, 2 Megohms 1/4 W.		—48393	Dust Cloth—Speaker Baffle
45	—36317	Resistor, 10,000 Ohms 1/4 W.		—47217	Grommet—Baffle Mtg.
46	—35927	Resistor, 2 Megohms 1/4 W.		—47219	Headed Bushing—Baffle Mtg.
47	—27121	Resistor, 5,000 Ohms 1/3 W.	MG31	—47811	Instruction Envelope Assy.
48	—44009	Resistor, 3,000 Ohms 1/4 W.			
49	—47815	Resistor, 500 Ohms 1/2 W.			
50	—35600	Resistor, 100,000 Ohms 1/4 W.			
51	—35600	Resistor, 100,000 Ohms 1/4 W.		9HP	Cabinet
52	—35602	Resistor, 1 Megohm 1/4 W.		—47854	Shipping Carton
53	—37472	Resistor, 50,000 Ohms 1/3 W.		—48284	Cabinet Back
54	—50956	Resistor, 10 Megohms 1/4 W.		—46464	Thumb Screws—Back Mtg.
55	—47814	Resistor, 100 Ohms 1 1/2 W.		—47843	Screw—Escut. Mtg.—FS18 (Bristol)
56	—48241	Band Change Switch		—48275	Screw—Escutcheon Mtg. (Mach.)
57	594-BP-15"M"	Speaker—Mfg. Spec. No. 1-D-1581		—49143	Escutcheon
	—48891	V. C. and Cone Assy.—"M" only	MG32	—47811	Riveted Push Button Hinge
	—43678	Cardboard Ring—Cone Mtg.		—48277	Rod—Button to Hinge Mtg.
	—48892	Field Coil (700 Ohms) "M"		—49125	Push Button
	—48893	Output Transformer		—48751	Call Letter Sheet
	594-BP-15"R"	Speaker—Mfg. Spec. No. F-5735		—48749	Celluloid Cover—Call Letter
	—48622	V. C. and Cone Assy.—"R"		—49440	Escutcheon Mtg. Strip
	—43979	Cardboard Ring—Cone Mtg.		—49123	Knob—Vol. Control—Tuning
	—48624	Field Coil (700 Ohms) "R"		—49130	Knob—Tone Control
	—48623	Output Transformer		—49131	Knob—Band Switch
	—44682	5 Prong Plug—Speaker	MG31	—49106	Instruction Envelope Assy.
58	G48 —26719	Terminal Board—For Loop Connections		—44772	Screw—Chassis Mtg.—FS58
				—45579	Washer—Chassis Mtg.
59	G41 —26719	Phono Terminal Board			
60	—48243	Tone Control Switch			
61	—48242	Switch and Volume Control—1 Meg. Tapped			

**1019 MISCELLANEOUS**

MODEL 828

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Po
6 J5G	Oscillator	6.3	145	—	—	0-	—	—
6A8G	Modulator	6.3	265	82	-3	0	—	82
6U7G	I-F Amplifier	6.3	265	82	-3	0	—	—
6Q7G	Detector A.V.C. 1st A-F	6.3	200	—	-3	0	—	—
6 J5G	Phase Inverter	6.3	165	—	-4	78	—	—
6K6G(2)	Output	6.3	260	265	—	17	—	—
5Y3G	Rectifier	5.0						

Max. power output approx. 10 watts.  
Power consumption at 117.5 line 85 watts.  
Voltage across speaker field 62 volts.

Tuning I-F Amplifier to 455 Kilocycles.

- (a) Connected the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the Broadcast Band. Right.
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F asm. for maximum output. (Item 10, Fig. 2)
- (f) Adjust both trimmers located on top of the 1st I-F asm. for maximum output. (Item 9, Fig. 2)

Aligning R-F Amplifier.

- When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd condenser should be connected in series with the output lead of the signal generator and for the High Frequency band a 250 ohm carbon resistor should be used in place of the condenser.
- (a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustment of the "ANT" trimmer DO NOT READJUST THE "OSC" TRIMMER.
  - (b) To align the B. C. OSC. series trimmer (Fig. 2), set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
Police and Amateur Band  
Foreign Band

Shunt Alignment  
1400 Kilocycles  
6000 " "  
18 Megacycles

Series Align.  
600 Kilocycles

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light—6-8 Volt	48	-23785	Resistor, 500,000 Ohm 1/4 W.
2	W -37922	Dial Light—6-8 Volt	49	-27121	Resistor, 5,000 Ohm 1/4 W.
	G16 -45398	Socket and Brkt. Assy., Dial Light	50	-21875	Resistor, 100,000 Ohm 1/4 W.
3	G170-32000	Antenna Coil—H-F.	51	-21875	Resistor, 100,000 Ohm 1/4 W.
4	G168-32000	Antenna Coil—Pol.	52	-23785	Resistor, 500,000 Ohm 1/4 W.
5	G169-32000	Antenna Coil—B-C.	53	-23785	Resistor, 500,000 Ohm 1/4 W.
6	G170-32002	Oscillator Coil—H-F.	54	W -22873	Resistor, 220 Ohm 2 1/4 W.
7	G168-32002	Oscillator Coil—Pol.	55	G103-28807	Socket—(5 Prong Spkr.)
8	G169-32002	Oscillator Coil—B-C.		W -43552	Spkr. Plug Clamp
9	G175-32004	1st I-F. Assy., 455 Kc.	56	583-CP-18"K"	Speaker, Spec. No. V. C. and Cone Assy.
10	G176-32004	2nd I-F. Assy., 455 Kc.			Field Coil—(525 Ohm)
11	W -46713	3 Section Trimmer (Osc. Shunt)			Output Transformer
12	W -35951A	3 Section Trimmer (Ant. Shunt)			Cardboard Ring
13	W -35936	Condenser, .05 Mf. 200 V.			Speaker, Spec. No. S-4893N3
14	G20 -34000	Condenser, .004910 Mf. Mica		583-CP-18"H"	V. C. and Cone Assy.
15	G23 -34000	Condenser, .001560 Mf. Mica		-46786	Field Coil (525 Ohm)
16	-40789	B-C. Osc. Series Trimmer		-46787	Output Transformer
17	G13 -34002	Condenser, .000035 Mf. Molded		-46788	Cardboard Ring
18	G59 -33001	2 Section Gang Condenser		-46789	Speaker, Spec. No. E10K326
	D -46317	Calibrated Dial Glass—Domestic		583-CP-18"Z"	V. C. and Cone Assy.
	D -46749	Calibrated Dial Glass—International		-46758	Field Coil (525 Ohm)
	C -46275B	Dial Support—Flocked Mask		-46759	Output Transformer
	W -46941	Rubber Cushion—Dial Glass		-46780	Cardboard Ring
	W -46099	Dial Class Clip—(2 Req.) Mtg.		-46761	Band Selector Switch
	W -46096	Dial Class Clip—(R. H.) Mtg.	57	B -46276	8 Prong Socket
	W -46095	Dial Class Clip—(L. H.) Mtg.	58 to 65	G178-36400	Power Transformer, 60 Cy.—110 V.
	W -46203	Dial Pointer		-46318	Power Transformer, 50 Cy.—110 V.
	W -46097	Guide—Pointer		-46307	Power Transformer, 50 Cy.—220 V.
	G13 -43564	Pulley and Hub Assy. on Gang		-46308	Power Transformer, 25 Cy.—110 V.
	MG17-46287	Small Brass Idler Pulley and Brkt. Assy.		-46309	Power Transformer, 25 Cy.—220 V.
	MG20-46287	Idler Pulley Assy. (2 Pulleys)		-46310	Power Transformer, 40-100 Cy.—95-267 V.
	-45877B	Drive Shaft and Pulley (Manual)		-46311	Wave Trap—455 Kc.
	W -45878	Bracket—Drive Shaft Mounting	67	MG41-46287	Coil—Only—Wave Trap
	W -46087	Tension Spring—Drive Cord		G188-32000	Tone Control
	G9 -41582	Drive Cord (61 Inches)	68Y	-44024B	Line Switch
	W -46290	Clamp—Drive Cord	69		Volume Control
19	W -23615	Condenser, .05 Mf. 400 V.	70	-44773	Ant. and Gnd. Terminal Assy.
20	W -35139	Condenser, .004 Mf. 400 V.	71	G27 -26719	Phono Terminal Assy.
21	W -28621	Condenser, .02 Mf. 200 V.		G41 -26719	Push Button Unit Assy.
22	W -30805	Condenser, .01 Mf. 400 V.		G10 -45683	Key and Toggle Assy.
23	G2 -34002	Condenser, .0001 Mf. Molded		G29 -45683	Screw—Key Adjusting
24	G2 -34002	Condenser, .0001 Mf. Molded		-45717	Spring—Key Return
25	W -41461	Condenser, .0014 Mf. 200 V.		W -50607C	Clamp—Toggle Lock
26	W -28621	Condenser, .02 Mf. 200 V.		W -50542C	Adjusting Clip—(Heart Shaped)
27	W -36057B	Condenser, 40 Mf. 300 V.		W -50588B	Adjusting Clip—(Hooked)
28	W -44054	Condenser, 30 Mf. 350 V.		W -45646B	Guide Plate—Key
29	W -23615	Condenser, .05 Mf. 400 V.		W -46278	Rocker Plate and Gear Sector Assy.
30	W -23615	Condenser, .05 Mf. 400 V.		G18 -45683	Screw—Rocker Plate Bearing
31	W -35139	Condenser, .004 Mf. 400 V.		W -50561	Bronze Spring—Bearing Thrust
32	W -23615	Condenser, .05 Mf. 400 V.		W -45976	Rubber Band—Used on Keys
33	W -23615	Condenser, .05 Mf. 400 V.		W -50273	Cabinet
34	B -33906A	Power Cord and Plug		-46360A	Knob—4 Req.
35	-22196	Resistor, 20,000 Ohm 1/4 W.		8T	Cabinet (Lowboy Style)
36	-21237A	Resistor, 60,000 Ohm 1/4 W.		-46360A	Knob—Tuning—Volume
37	-35500	Resistor, 100,000 Ohm 1/4 W.		-46784A	Knob—Tone Control—Band Sw.
38	-4921C	Resistor, 10,000 Ohm 1 W.		C -46228C	Escutcheon
39	-21454	Resistor, 1 Megohm 1/4 W.		-46417	Push Button
40	-36952	Resistor, 30,000 Ohm 1 W.		-50841	Station Call List
41	-34020	Resistor, 250,000 Ohm 1/4 W.		W -50551A	Celluloid Call Letter Cover
42	-37590	Resistor, 750,000 Ohm 1/4 W.		-46329	Instruction Booklet
43	-36320	Resistor, 120,000 Ohm 1/4 W.		-46306	Carton for 8R Cabinet
44	-36688	Resistor, 3 Megohm 1/4 W.		-46640	Carton for 8T Cabinet
45	-23785	Resistor, 500,000 Ohm 1/4 W.			
46	W -37631	Resistor, 32 Ohm 1/4 W.			
47	-21875	Resistor, 100,000 Ohm 1/4 W.			





TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.3	245	110	0	-3	0	—	—
6A8	Osc.-Mod.	6.3	245	110	—	-3	0	-5 to -15	175
6K7	I-F Amplifier	6.3	245	110	0	-3	0	—	—
6H6	Detector	6.3	—	—	—	—	0	—	—
6H6	AVC	6.3	—	—	—	—	0	—	—
6C5	A-F Amplifier	6.3	35	—	—	-3	0	—	—
6F6	Output	6.3	235	245	—	-16	0	—	—
5Z4	Rectifier	5.0	250	—	—	—	—	—	—

Power Consumption Approximately 60 Watts.

Measured on 117.5 Volt Line—60 Cycles A. C.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Broadcast band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order.

To align the "series" trimmer set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

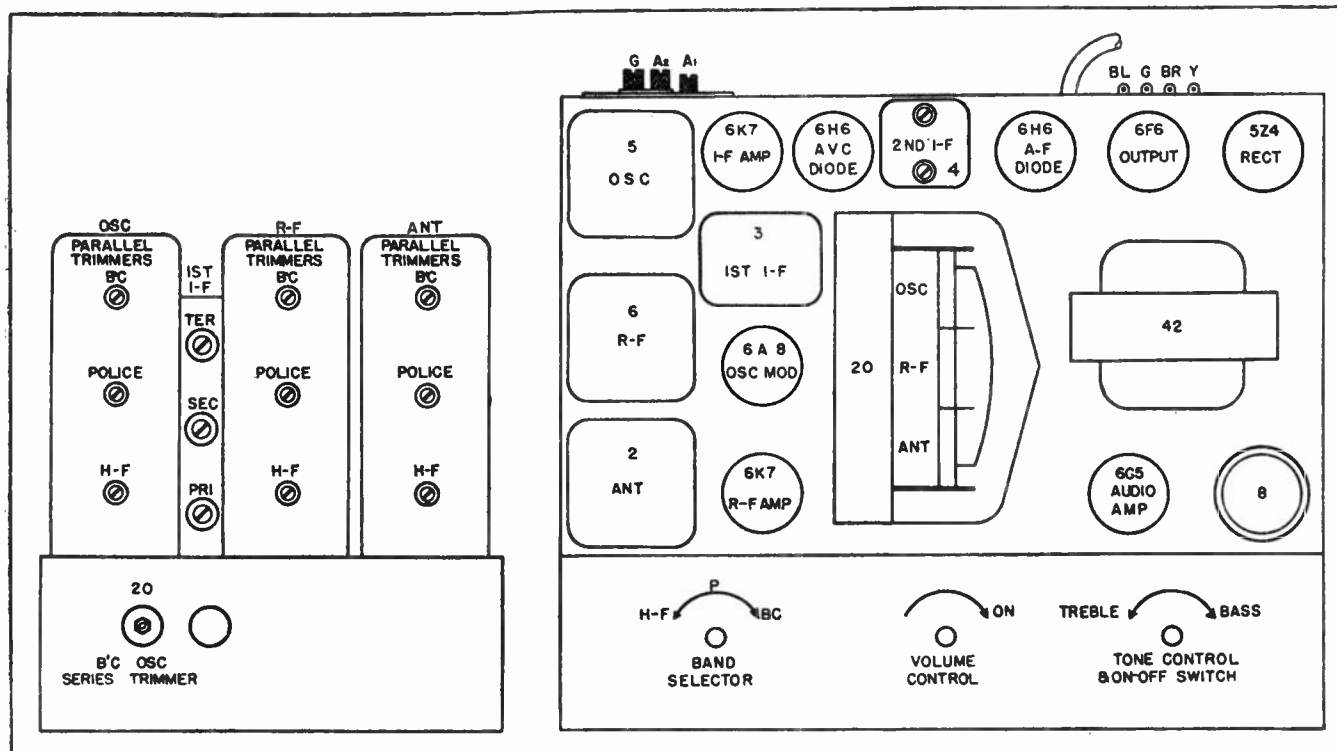
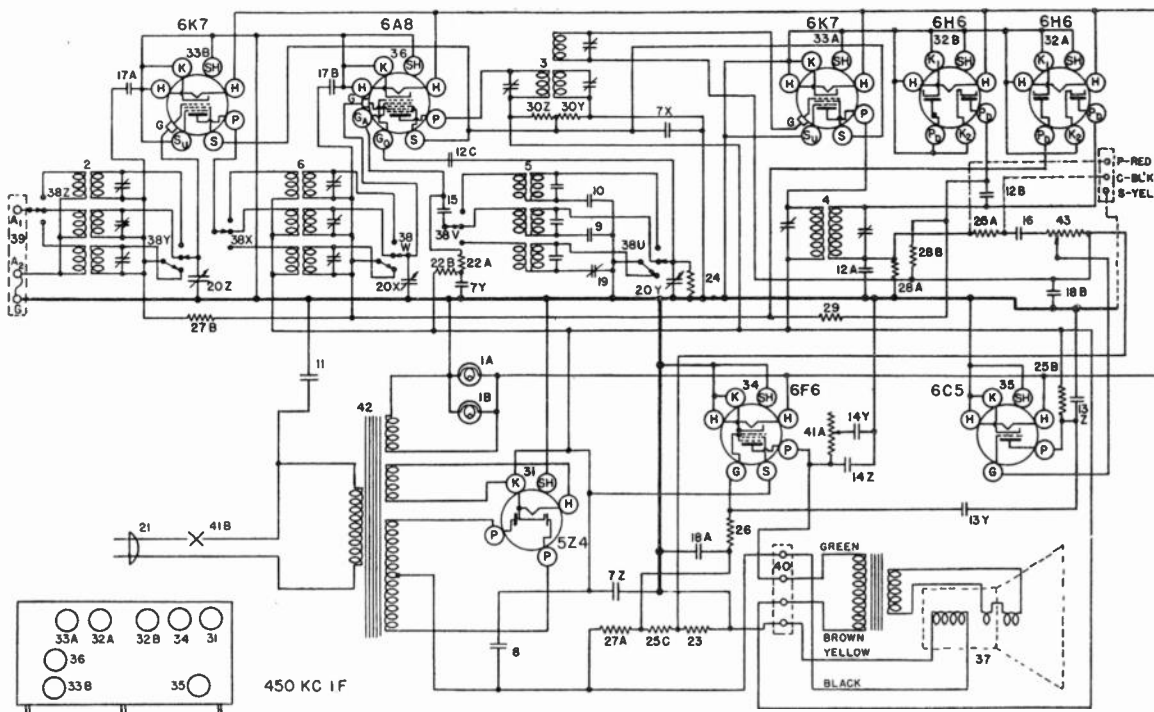


Fig. 2. Top View 855

MODEL 855



(b) Signal Input Frequencies.

American Broadcast Band (BLACK)	Shunt Alignment	Series Alignment
Police and Amateur Band (GREEN)	1400 Kc.	600 Kc.
Night H-F Band (RED)	4000 Kc.	—
	10 Megacycles	—

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 —27134	Dial Light Socket Asm.	21	B —33905A	Cord & Plug
1B	G4 —27134	Dial Light Socket Asm.	22A	—21876	Resistor, 10,000 Ohms
2	G74 —32000	Ant. Coil, Assm. Complete	22B	—21876	Resistor, 10,000 Ohms
	G46 —32000	Ant. Coil, S. W. Band	23	—22196	Resistor, 20,000 Ohms
3	G73 —32000	Ant. Coil, Police Band	24	—21875	Resistor, 100,000 Ohms
	G44 —32000	Ant. Coil, Broadcast Band	25A	—23403	Resistor, 150,000 Ohms
4	G6 —36031	Coil Support Base	25B	—23403	Resistor, 150,000 Ohms
	W —36032	Trimmer Condenser Asm.	25C	—23403	Resistor, 150,000 Ohms
5	G4 —36031	Coil Shield	26	—21455	Resistor, 300,000 Ohms
	G64 —32004	1st I. F. Trans.	27A	—23785	Resistor, 500,000 Ohms
6	G65 —32004	2nd I. F. Trans.	27B	—23785	Resistor, 500,000 Ohms
	G42 —32002	Osc. Coil Assm. Complete	28A	—21454	Resistor, 1 Megohm
7	G38 —32002	Osc. Coil, S. W. Band	28B	—21454	Resistor, 1 Megohm
	G36 —32002	Osc. Coil, B. C. Band	29	—26577	Resistor, 3 Megohm
8	G37 —32002	Osc. Coil, P. Band	30Z	W —35963	Resistor, 8,500 Ohms
	G7 —36031	Coil Support Base	30Y	W —35963	Resistor, 25,000 Ohms
9	W —36032	Trimmer Condenser Asm.	31	G154—36400	Socket, 3Z4
	G5 —36031	Coil Shield	32A	G155—36800	Socket, 6H6
10	G51 —32001	R. F. Coil Assm. Complete	32B	G155—36400	Socket, 6H6
	G45 —32001	R. F. Coil, S. W. Band	33A	G151—36800	Socket, 6K7
11	G46 —32001	R. F. Coil, P. Band	33B	G151—36400	Socket, 6K7
	G54 —32001	R. F. Coil, B. C. Band	34	G153—36400	Socket, 6F6
12A	G6 —36031	Coil Support Base	35	G152—36400	Socket, 6C5
	G6 —36031	Coil Support Base	36	MG45—36781	Socket, 6A8 (Cushion)
12B	W —36032	Trimmer Condenser Asm.	G156—36800	Socket only	
	G4 —36031	Coil Shield	W —33072	Socket Cushion only	
12C	W —36058	Condenser, 4 mfd. 350 V.	W —36828	Socket Plate only	
	W —36055	Condenser, 8 mfd. 450 V.	318BL—18	Speaker, (Table Model)	
12A	G7 —34000	Condenser, 35 mfd. 400 V.	518CL—22M	Speaker, (Console Model)	
	G12 —34000	Condenser, 0.0145 mfd.			
12B	W —30805	Condenser, 0.04725 mfd.	37	—36058B	Band Change Switch
	G2 —34002	Condenser, 0.1 mfd. 400 V.	38Z		
12C	G2 —34002	Condenser, 100 mmf.	T		
	G2 —34002	Condenser, 100 mmf.	38U		
13Z	W —25537A	Condenser, 0.001 mfd. 400 V.	39	G27 —26719	Ant. Grd. Terminal
	W —31052	Condenser, 0.004 mfd. 400 V.	G5 —31128	Speaker Terminal	
14Y	W —32378	Condenser, 0.05 mfd. 400 V.	W —34627	Speaker Term. Cover Insulator	
	W —32379	Condenser, 0.01 mfd. 400 V.	W —34628	Speaker Terminal Cover	
15	W —32379	Condenser, 0.02 mfd. 200 V.	G28 —26719	Phono. Pickup Terminal Board (25 cy sets)	
	W —30321A	Condenser, 0.02 mfd. 200 V.	41A	—36062	Tone Control
17A	W —30321A	Condenser, 1.0 mfd. 160 V.	41B	—36062	On-Off Switch
	W —30321A	Condenser, 1.0 mfd. 160 V.	G6 —30745	Power Trans. 110 V. 60 Cy.	
18A	G10 —33005	Condenser, Trim. (Osc. B. C. Bd)	G7 —30745	Power Trans. 110 V. 25 Cy.	
	G10 —33005	Condenser, Trim. (Osc. B. C. Bd)	G8 —30745	Power Trans. 220 V. 25 Cy.	
20Z	G33 —33002	Var. Tuning Condenser Gang	W —36060	Volume Control, 1 Megohm	
	G33 —33002	Var. Tuning Condenser Gang	W —37340	Knob (Pointer Notch)	
20Y	MG21—36045	Dial Drive Asm.	W —37339	Knob	
	C —36088	Dial	W —36518	Knob (Tail)	
20X	W —37198	Dial Hand	W —36521	Knob (2)	
	W —32293	Dial Hand Nut	B —33528C	Escutcheon	
			W —33984	Escutcheon Gasket	
			W —36309	Escutcheon Indicator	
			W —36312	Band Change Plate	
			W —36313	Tone Control Plate	

## MODEL 865

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.3	245	110	0	-3	0	—	—
6A8	Osc.-Mod.	6.3	245	110	—	-3	0	-5 to -15	175
6K7	I-F Amplifier	6.3	245	110	0	-3	0	—	—
6H6	Detector	6.3	—	—	—	—	0	—	—
6H6	AVC	6.3	—	—	—	—	0	—	—
6C5	A-F Amplifier	6.3	35	—	—	-3	0	—	—
6F6	Output	6.3	235	245	—	-16	0	—	—
5Z4	Rectifier	5.0	250	—	—	—	—	—	—

Measured on 117.5 Volt Line—60 Cycles A.C.  
Power Output Approximately 5 Watts.

Power Consumption Approximately 60 Watts.

### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser (SEC) on the 1st I-F transformer. (Fig. 2).

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers (TERT and PRI) of the 1st I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

### 2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Orange and Black Bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" parallel trimmers in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustments of the "R-F" and "Ant" trimmers in the order given. Do not readjust the "Osc" trimmer.

To align the "series" trimmer (17Y and 17Z, Fig. 2) set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

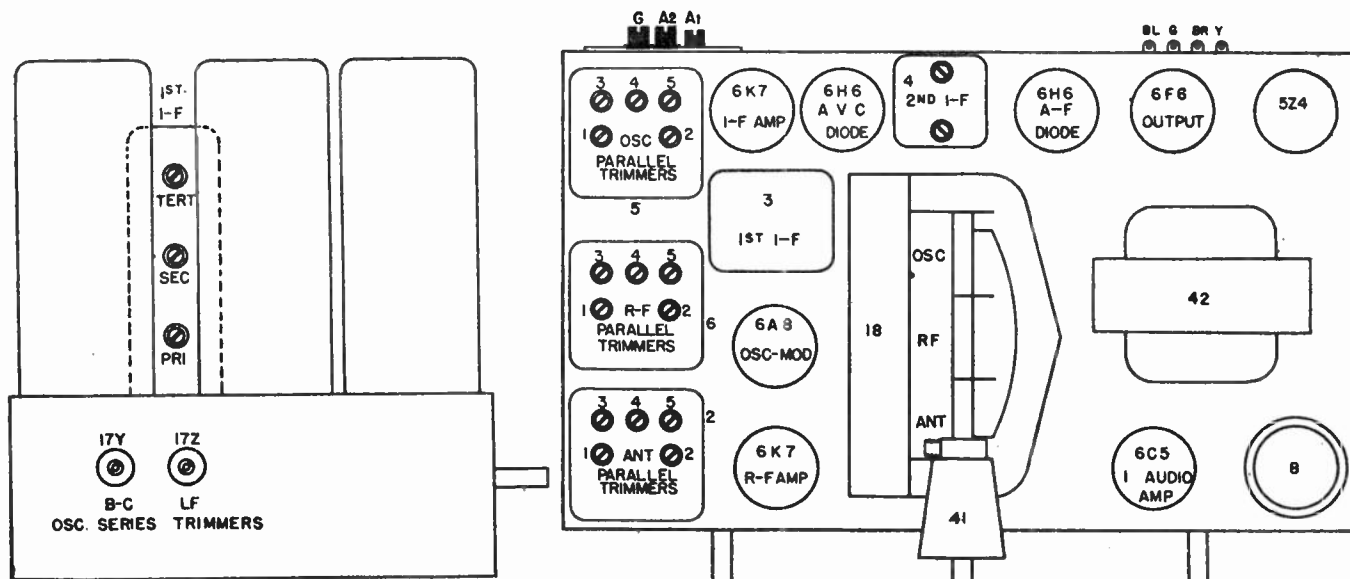


Fig. 2. Top & Side Views 865

**MODEL 865**  
**(b) Signal Input Frequencies**

	<b>Shunt Alignment</b>	<b>Series Alignment</b>
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description		
1A	—36504	Dial Light Socket Assm.		—36528	Dial Face only.		
1B				—37551	Dial Hand only		
2	G72 —32000	Ant. Coil Assm. Complete.		—37553	Second Hand only		
	G48 —32000	Ant. Coil only, 150-400 Kc.		—37484	Dial Hand Screw		
	G70 —32000	Ant. Coil only, 540-1500 Kc.		—37543	Dial Hand Washer		
	G49 —32000	Ant. Coil only, 1500-4000 Kc.	19	B —33905A	A. C. Cord & Plug		
	G71 —32000	Ant. Coil only, 4-10 Mc.	20A	—21876	Resistor, 10,000 Ohms		
	G52 —32000	Ant. Coil only, 10-22 Mc.	20B	—21876	Resistor, 10,000 Ohms		
	W —36028	5 Section Trimmer Condenser	21	—22196	Resistor, 20,000 Ohms		
	MG19 —36168	Coil Support Base	22	—34019	Resistor, 75,000 Ohms		
	MG9 —36168	Coil Shield	23	—21875	Resistor, 100,000 Ohms		
3	G64 —32004	1st I. F. Transformer Assm.	24A	—23403	Resistor, 150,000 Ohms		
4	G65 —32004	2nd I. F. Transformer Assm.	24B	—23403	Resistor, 150,000 Ohms		
5	G46 —32002	Osc. Coil Assm. Complete	25	—21455	Resistor, 300,000 Ohms		
	G39 —32002	Osc. Coil only, 150-400 Kc.	26A	—23785	Resistor, 500,000 Ohms		
	G40 —32002	Osc. Coil only, 540-1500 Kc.	26B	—23785	Resistor, 500,000 Ohms		
	G41 —32002	Osc. Coil only, 1500-4000 Kc.	27A	—21454	Resistor, 1.0 Megohm		
	G45 —32002	Osc. Coil only, 4-10 Mc.	27B	—21454	Resistor, 1.0 Megohm		
	G44 —32002	Osc. Coil only, 10-22 Mc.	28	—26577	Resistor, 3.0 Megohm		
	W —36028	5 Section Trimmer Condenser	29Z	W —36442	Resistor, 17,500 Ohms		
	MG20 —36168	Coil Support Base	29Y		Resistor, 15,000 Ohms		
	MG10 —36168	Shield	30	G154 —36400	Socket, 5Z4		
	G4 —34007	Condenser, 1136 Mmf.	31	G152 —36400	Socket, 6C5		
	G6 —34007	Condenser, 1707 Mmf.	32A	G151 —36400	Socket, 6K7		
	G5 —34007	Condenser, 2757 Mmf.	32B	G151 —36400	Socket, 6K7		
	G6 —34002	Condenser, 25 Mmf.	33	G153 —36400	Socket, 6F6		
6	G49 —32001	R. F. Coil Assm. Complete	34A	G155 —36400	Socket, 6H6		
	G27 —32001	R. F. Coil only, 150-400 Kc.	34B	G155 —36400	Socket, 6H6		
	G47 —32001	R. F. Coil only, 540-1500 Kc.	35	G156 —36400	Socket, 6A8		
	G28 —32001	R. F. Coil only, 1500-4000 Kc.	36	330—CL—22	Speaker, (Table Model)		
	G48 —32001	R. F. Coil only, 4-10 Mc.		630—CL—27	Speaker, (Console Model)		
	G30 —32001	R. F. Coil only, 10-22 Mc.	37U	—36271E	Band Change Switch		
	W —36028	5 Section Trimmer Condenser	To				
	MG19 —36168	Coil Support Base	37Z				
	MG9 —36168	Shield	38	G16 —26719	Ant. Terminal Board		
7Z	W —36056	Condenser, 8 Mfd., 450 Volts	39	G5 —31128	Speaker Terminal Board		
7Y		Condenser, 4 Mfd., 350 V.		W —34628	Speaker Terminal Cover		
7X		Condenser, 4 Mfd., 250 V.		W —34627	Speaker Term. Cover Insulator		
8	W —36055	Condenser, 35 Mfd., 400 V.	40A	W —36539A	Tone Control		
9	W —30805	Condenser, 0.01 Mfd., 400 V.	40B		On & Off Switch		
10A	G2 —34002	Condenser, 100 Mmf.	41	W —36500	Tuning Meter Complete		
10B		Condenser, 100 Mmf.	42	G10 —30745	Power Transformer, 60 Cy., 110 V.		
10C		Condenser, 100 Mmf.		G11 —30745	Power Transformer, 25 Cy., 110 V.		
11Z	W —25537A	Condenser, 0.001 Mfd., 400 V.		G12 —30745	Power Transformer, 25 Cy., 220 V.		
11Y		Condenser, 0.03 Mfd., 400 V.	43	—36066	Volume Control		
12Y		Condenser, 0.004 Mfd.	44	W —36931	Condenser, 17 Mfd., 25 Volt		
12 Z	W —31052	Condenser, 0.05 Mfd.	45	W —29910A	Condenser, 0.25 Mfd., 200 Volt		
13A	W —32378	Condenser, 0.01 Mfd., 400 V.	46	W —25291	Resistor, 500 Ohm (Flex)		
13B	W —32378	Condenser, 0.01 Mfd., 400 V.		B —36515	Escutcheon & Lens Assm.		
14	W —23191A	Condenser, 0.01 Mfd., 400 V.		D —28	Escutcheon Screws (3)		
15A	W —32379	Condenser, 0.02 Mfd., 200 V.		W —36313	Tone Control Plate		
15B	W —32379	Condenser, 0.02 Mfd., 200 V.		W —36311	Band Change Plate		
16	W —30321A	Condenser, 1.0 Mfd., 160 V.		W —36310	Band Chge. Ind., (Celluloid)		
17Z	G15 —33006	Condenser, B. C. Band Osc. Series		W —28760B	Escutcheon Pins		
17Y		Condenser, L. F. Band Osc. Series		W —36519	Knob, Tuning		
18Z	G34 —33002	3 Section Tuning Cond. Gang		W —36520	Knob, Vernier		
18Y			—36499	Dial Drive Assm.		W —36521	Knob, Vol. Control
18X							W —36518

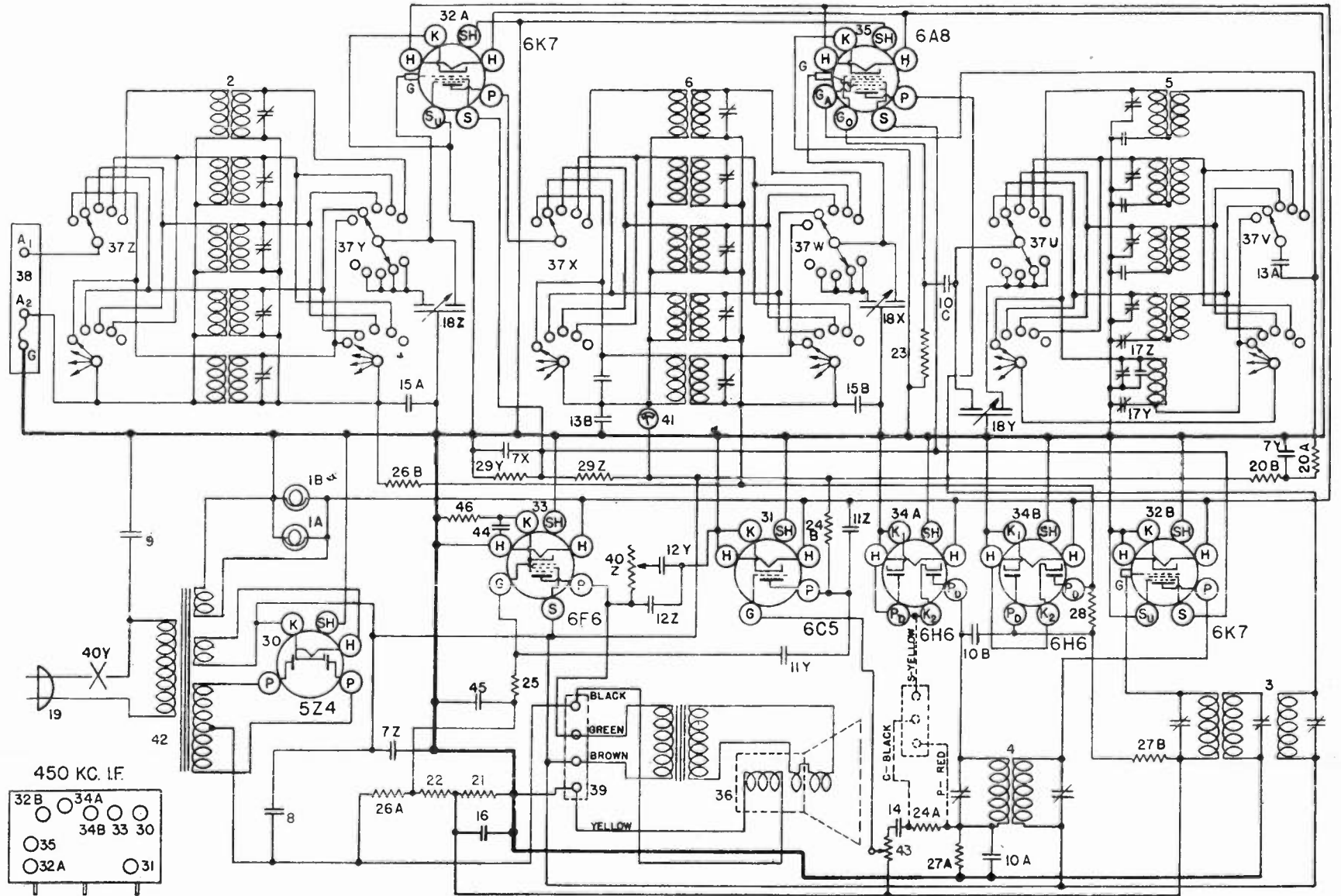


FIG. 1—WIRING DIAGRAM—MODEL 865

# MODEL 915

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.2	238	102	7	0	7	—	—
6A7	Modulator	6.2	238	102	—	0	6	-1 to -30	102
76	Oscillator	6.2	74	—	—	-24	0	—	—
6B7	I-F Amp. & Det.	6.2	238	102	—	0	3	—	—
76	1st. A-F Amp.	6.2	46	—	—	0	3	—	—
42	2nd. A-F Amp.	6.2	208	208	—	0	18	—	—
42	Output	6.2	335	238	—	0	18	—	—
42	Output	6.2	335	238	—	0	18	—	—
5Z3	Rectifier	4.9	345	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

Power Consumption Approximately 122 Watts.

### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the right.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

### 2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather band and Broadcast band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no improvement in output can be obtained.

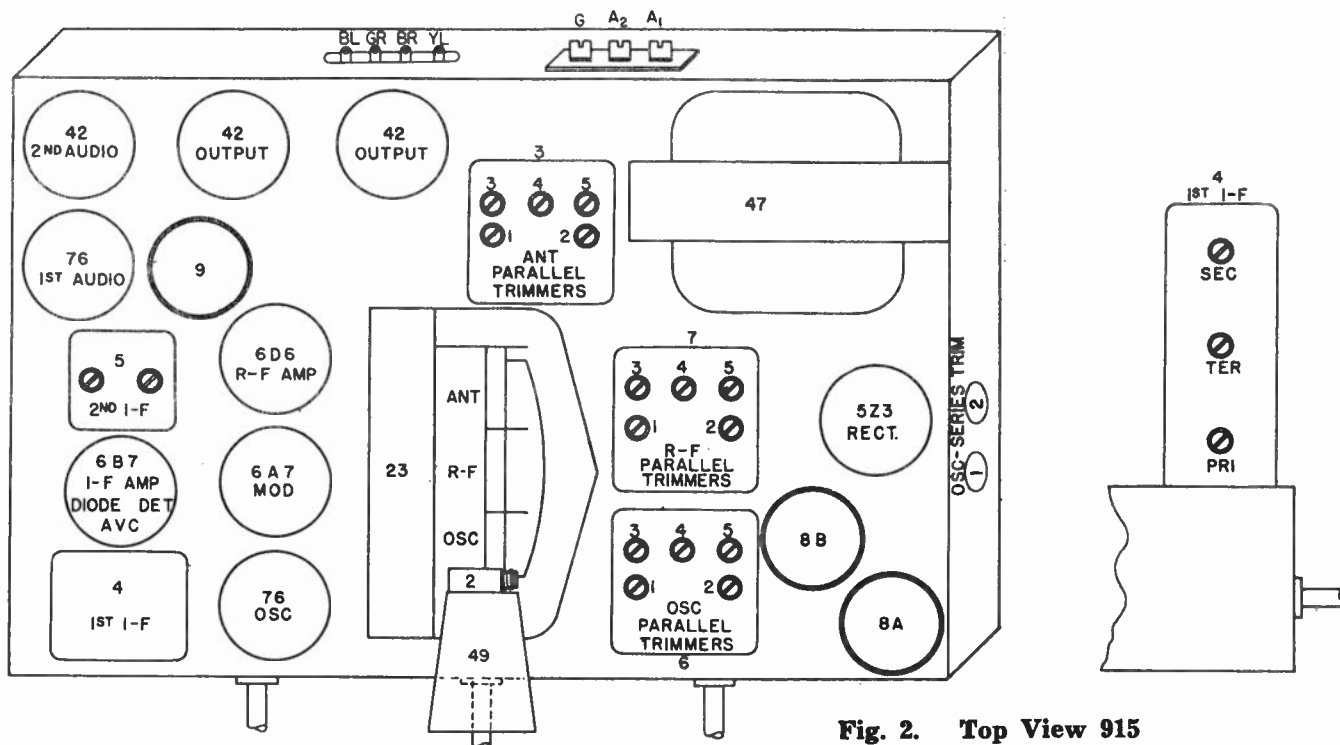


Fig. 2. Top View 915

**MODEL 915**  
**(b) Signal Input Frequencies.**

Weather Band (ORANGE)	<b>Shunt Alignment</b>	<b>Series Alignment</b>
American Broadcast Band (BLACK)	400 Kc.	150 Kc.
Police & Amateur Band (GREEN)	1400 Kc.	600 Kc.
Night H-F Band (RED)	4000 Kc.	—
Day H-F Band (VIOLET)	10 Megacycles	—
	21 Megacycles	—

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	—36504	Dial Light Socket Assm.	23Z	G37—33002	Var. Tuning Condenser Gang
1B	—36504	Dial Light Socket Assm.	23X		
2	—36557	Tuning Meter Bulb	23Y		
3	G63—32000	Ant. Coil Assm. Complete		—37376B	Dial Drive Assm.
	G64—32000	Ant. Coil only, 150-400 Kc.		C —36658	Dial Face only
	G68—32000	Ant. Coil only, 540-1500 Kc.		—37551	Dial Hand
	G65—32000	Ant. Coil only, 1500-4000 Kc.		—37554	Second Hand
	G67—32000	Ant. Coil only, 4-10 Mc.		—37484	Dial Hand Screw
	G68—32000	Ant. Coil only, 10-22 Mc.		—37543	Dial Hand Washer
	MG26—36542	Coil Support Base	24	B —33906A	A.C. Cord & Plug
	W —36028	5 Section Trimmer Cond. Assm.	25	W —36545	Resistor, 30,000 Ohm, 1 Watt
	MG9 —36168	Shield	26	—22196	Resistor, 20,000 Ohm, ¼ Watt
4	G57—32004	1st I. F. Trans. Assm.	27	—23403	Resistor, 150,000 Ohm, ¼ Watt
5	G58—32004	2nd I. F. Trans. Assm.	28A	—21455	Resistor, 300,000 Ohm, ¼ Watt
6	G54—32002	Osc. Coil Assm. Complete	28B	—21455	Resistor, 300,000 Ohm, ¼ Watt
	G55—32002	Osc. Coil only, 150-400 Kc.	29	—23785	Resistor, 500,000 Ohm, ¼ Watt
	G56—32002	Osc. Coil only, 540-1500 Kc.	30	—35927	Resistor, 2 Megohm, ¼ Watt
	G57—32002	Osc. Coil only, 1500-4000 Kc.	31	W —36549	Resistor, 200 Ohm, 6 Watts
	G59—32002	Osc. Coil only, 4-10 Mc.	32 Z	W —32301	Resistor, 10,000 Ohms
	G58—32002	Osc. Coil only, 10-22 Mc.	32Y		
	MG26—36542	Coil Support Base	33	W —22873	Resistor, 220 Ohm (Flex) 2½ W
	W —36028	5 Section Trimmer Cond. Assm.	34	W —25937	Resistor, 275 Ohm (Flex) ½ W
	G7 —34007	Condenser, 1750 mmf.	35	W —22514	Resistor, 750 Ohm (Flex) ½ W
	G8 —34007	Condenser, 4350 mmf. (2)	36	G75—28807	Socket, 6D6, 6 Prong
	G6 —34002	Condenser, 25 mmf. (2)	37A	G80—28807	Socket, 76, 5 Prong
	MG9 —36168	Shield	37B		
7	G39—32001	R. F. Coil Assm. Complete	38	G48—28807	Socket, 6B7, 7 Prong
	G40—32001	R. F. Coil only, 150-400 Kc.	39A	G25—28807	Socket, 42, 6 Prong
	G44—32001	R. F. Coil only, 540-1500 Kc.	39B		
	G41—32001	R. F. Coil only, 1500-4000 Kc.	39C		
	G43—32001	R. F. Coil only, 4-10 Mc.	40	G53—28807	Socket, 5Z3, 4 Prong
	G42—32001	R. F. Coil only, 10-22 Mc.		W —35772	Tube Shield Half
	MG27—36542	Coil Support Base		W —35773	Tube Shield Cap
	W —36028	5 Section Trimmer Cond. Assm.		W —36280	Tube Shield Cap (Osc.)
	MG9 —36168	Shield		W —35774	Tube Shield Base
	G6 —34002	Condenser 25 mmf.	41	427CL—22	Speaker, (Table Model)
	G1 —34002	Condenser, 250 mmf.	42	627CL—27	Speaker, (Console Model)
8A	W —36055	Condenser, 35 mfd. 400 Volts	43	—36547	Band Change Switch
8B	W —36055	Condenser, 35 mfd. 400 Volts	44	G27—26719	Ant. & Grnd. Terminal
9	W —36057	Condenser, 40 mfd. 300 Volts	45Z	G5 —31128	Speaker Terminal
10	W —36548	Condenser, 25 mfd. 25 Volts	45Y	—32063	Tone Control
11	G2 —34002	Condenser, 0.0001 mfd. 200 Volts	46		
12	G1 —34002	Condenser, 0.00025 mfd. 200 Volts	47	G22—24628	A. F. Driver Transformer
13A	W —35758	Condenser, 0.008 mfd. 400 Volts	48	G42—25669	Power Trans. 110 V., 60 Cy.
13B	W —35758	Condenser, 0.008 mfd. 400 Volts	49	B —37685	Universal Power Transformer
14	W —34647	Condenser, 0.006 mfd. 400 Volts		W —36500	Tuning Meter
15	W —32378	Condenser, 0.01 mfd. 400 Volts		W —36501	Tuning Meter Bracket
16	W —30805	Condenser, 0.01 mfd. 400 Volts	50	—32062	Volume Control
17A	W —36541	Condenser, 0.02 mfd. 160 Volts	51	—36688	Resistor, 3 meg. ¼ Watt
17B	W —36541	Condenser, 0.02 mfd. 160 Volts	52	W —21964	Resistor, 165 Ohm (Flex) ½ W
18A	W —28621	Condenser, 0.02 mfd. 200 Volts	53	G47—28807	Socket, 6A7, 7 Prong
18B	W —28621	Condenser, 0.02 mfd. 200 Volts	54	G6 —34002	Condenser, 25 mmf.
19	W —32708	Condenser, 0.05 mfd. 400 Volts		B —36515	Escutcheon
20	W —23615	Condenser, 0.05 mfd. 400 Volts		W —36311	Band Change Escutcheon
21A	W —35936	Condenser, 0.05 mfd. 200 Volts		W —36564	Band Change Escutcheon Indica- tor (Celluloid)
21B	W —35936	Condenser, 0.05 mfd. 200 Volts		W —36519	Knob, Tuning
21C	W —35936	Condenser, 0.05 mfd. 200 Volts		W —36520A	Knob, Vernier
22Z	G27—33006	Series Trimmer Condenser		W —36518	Knob, (Tail) Band Change
22Y				W —36521	Knob (2)
				G25—35954	Terminal Junction for Uni. P. T.



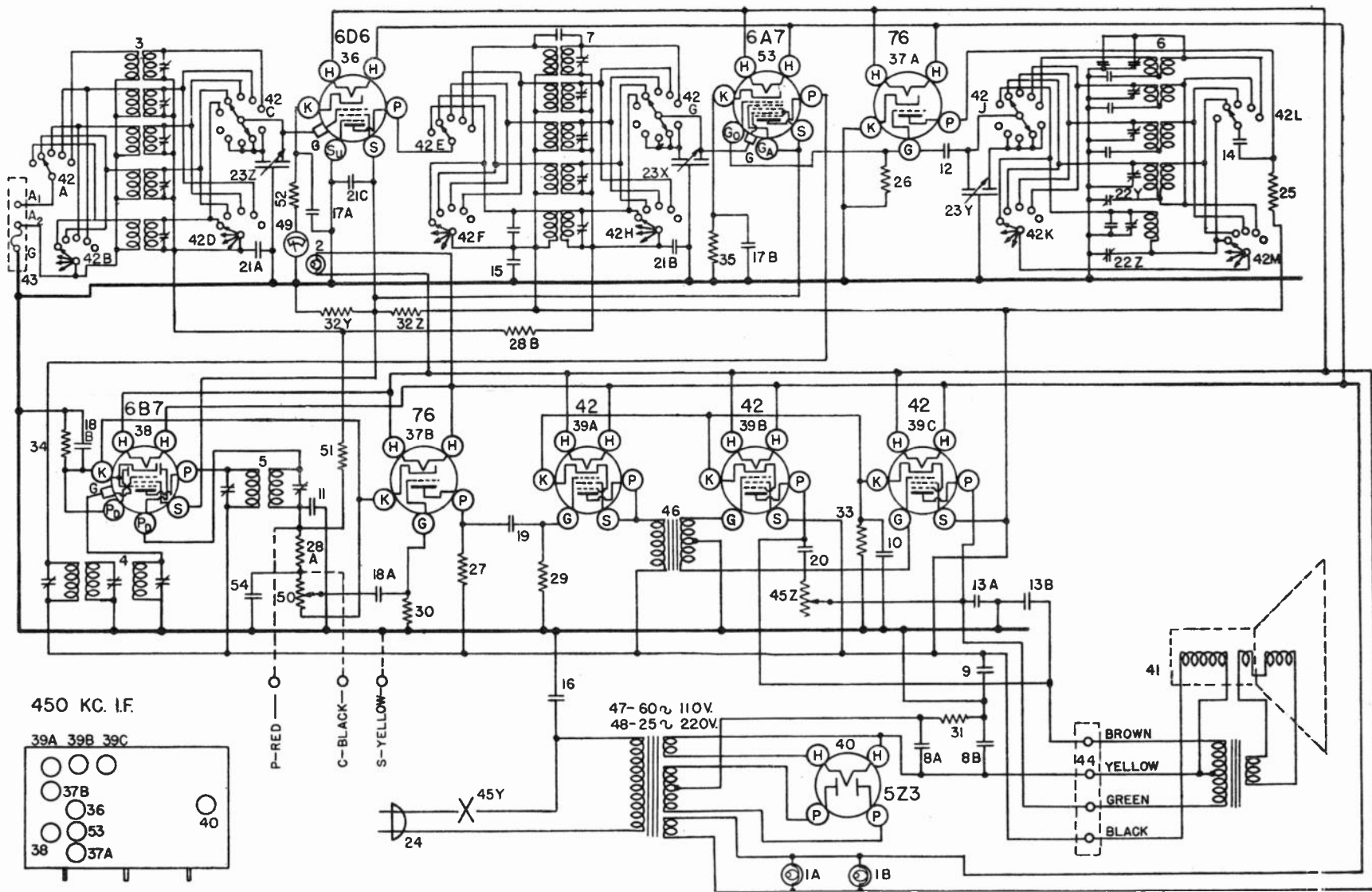


FIG. 1—WIRING DIAGRAM—MODEL 915

## MODEL 916

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga
6K7	R-F Amplifier	6.3	221	—	98	4	0	4	—
6A8	Osc-Mod	6.3	221	—	150	—	0	4.5	138
6K7	I-F Amplifier	6.3	260	—	138	5	0	5	—
6R7	Detector & 1st A-F Amplifier	6.3	130	—	—	—	0	6.5	—
6C5	2nd A-F Amplifier	6.3	150	—	—	—	0	6.5	—
6N6	(2) Output	6.3	285	278	—	—	0	3.2	—
5Z4	Rectifier	4.5	357	—	—	—	—	—	—
Phantom Conductor Tube (W41187)				Varies with power output.					

Voltage drop across speaker field 72 volts.  
 Power Output approximately 9 Watts.  
 Power Consumption approximately 117 Watts.  
 All readings taken on 117.5 volt power supply.

### I. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic—to P2 of the other 6N6 Output tube.

(b) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the Multivox control knob to the Auditorium Position (Third position in the clockwise direction).

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 2nd. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (Do not force the adjustment screw).

(f) Adjust the top trimmer and then the bottom trimmer (Sec. & Pri) of the 2nd. I-F transformer for maximum output. **ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

(g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc.-Mod. tube, leaving the tube's grid clip in place.

(h) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum output.

(j) Transfer the output lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(k) Adjust the middle trimmer of the 2nd. I-F transformer by opening until maximum output is obtained. **DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.**

(l) Adjust the middle trimmer of the 1st. I-F transformer by closing until maximum output is obtained. **DO NOT READJUST TOP AND BOTTOM TRIMMERS.**

American Broadcast Band (BLUE)  
 Police Band (RED)  
 High-Frequency Band (GREEN)

### Aligning R-F Amplifier.

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

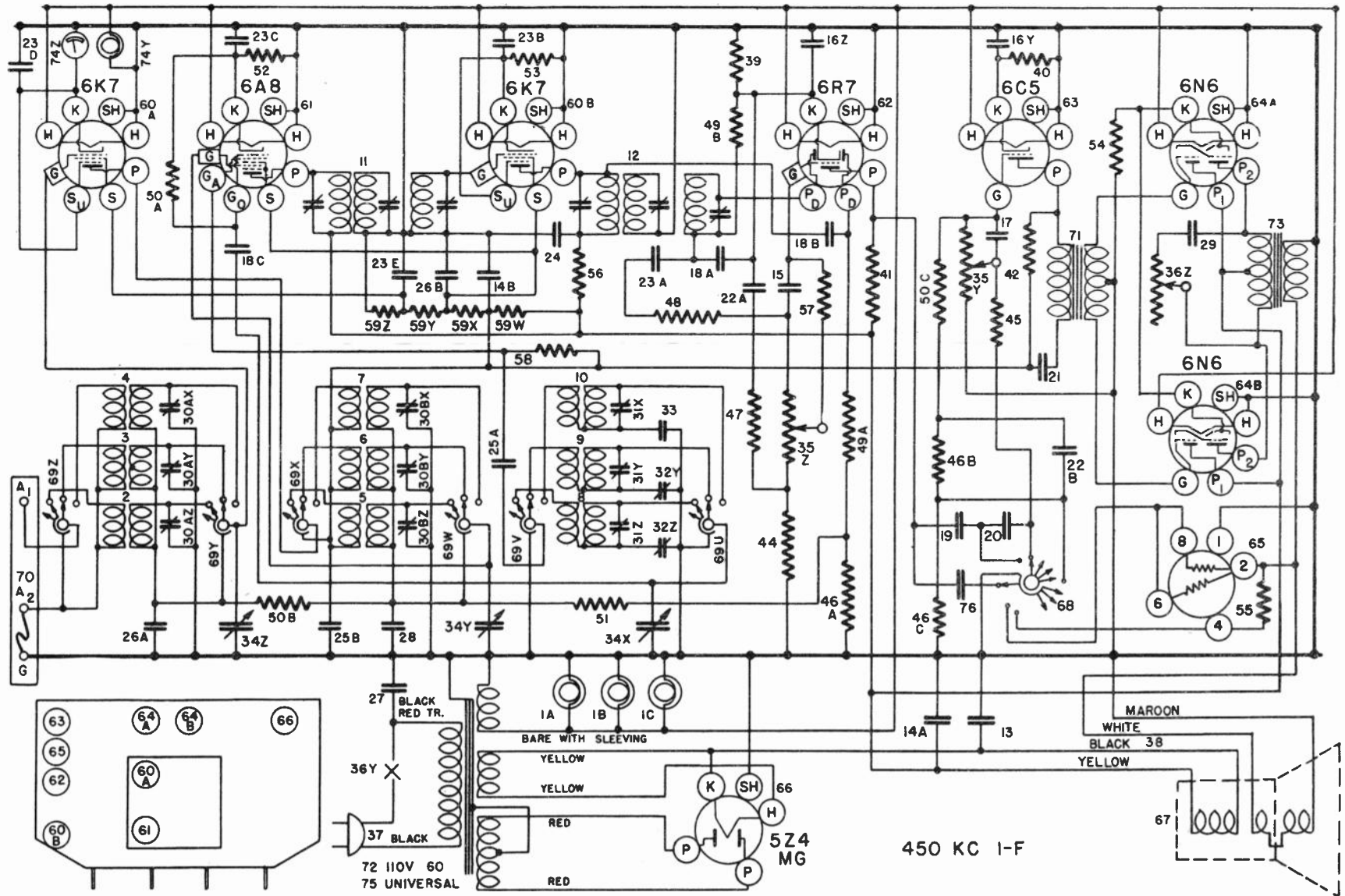
(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

**NOTE:** When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, 32Y and 32Z Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

### (c) Signal Input Frequencies:

Shunt Aligned	Series Aligned
1700 Kc.	600 Kc.
6000 Kc.	2000 Kc.
18000 Kc.	.....



MODEL 916

FIG. 1—WIRING DIAGRAM—MODEL 916

MODEL 916

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W -37922	Dial Light	36Z	-37966	Tone Control
	G3 -37965	Dial Light Socket	36Y	-33906A	A. C. Switch
2	G94 -32000	Ant. Coil, B. C. B.	37	G3	Power Cord & Plug
3	G95 -32000	Ant. Coil, Pol. B.	38	-37918	Speaker Cable
4	G113 -32000	Ant. Coil, H. F. B.	39	-31093	Resistor, 2,700 Ohm 1/4 W.
5	G68 -32001	R. F. Coil, B. C. B.	40	-21452	Resistor, 1,100 Ohm 1/4 W. Flex.
6	C80 -32001	R. F. Coil, Pol. B.	41	-37768	Resistor, 65,000 Ohm 1/4 W.
7	G79 -32001	R. F. Coil, H. F. B.	42	-5370A	Resistor, 20,000 Ohm 1 W.
8	G101 -32002	Osc. Coil, B. C. B.	43		
9	G102 -32002	Osc. Coil, Pol. B.	44	-21454	Resistor, 1 Megohm 1/4 W.
10	G103 -32002	Osc. Coil, H. F. B.	45	-21455	Resistor, 300,000 Ohm 1/4 W.
11	G90 -32004	1st I. F. Assembly	46A	-23785	Resistor, 500,000 Ohm 1/4 W.
12	G91 -32005	2nd I. F. Assembly	46B	-23785	Resistor, 500,000 Ohm 1/4 W.
13	W -36055	Condenser, 35 Mfd. 400 V. Electrolytic	46C	-23785	Resistor, 500,000 Ohm 1/4 W.
14A	W -36057	Condenser, 40 Mfd. 300 V. Electrolytic	47	-21453	Resistor, 40,000 Ohm 1/4 W.
14B	W -36057	Condenser, 40 Mfd. 300 V. Electrolytic	48	-23403	Resistor, 150,000 Ohm 1/4 W.
15	G8 -34002	Condenser, .00001 Mfd. (Molded)	49A	-33344	Resistor, 400,000 Ohm 1/4 W.
16Z	W -37778	Condenser, 12 Mfd. 25 V. Electrolytic	49B	-33344	Resistor, 400,000 Ohm 1/4 W.
16Y	W -37778	Condenser, 12 Mfd. 25 V. Electrolytic	50A	-35600	Resistor, 100,000 Ohm 1/4 W.
17	G6 -34002	Condenser, .000025 Mfd. (Molded)	50B	-35600	Resistor, 100,000 Ohm 1/4 W.
18A	G2 -34002	Condenser, .001 Mfd. (Molded)	50C	-35600	Resistor, 100,000 Ohm 1/4 W.
18B	G2 -34002	Condenser, .001 Mfd. (Molded)	51	-37245	Resistor, 1.5 Megohm 1/4 W.
18C	G2 -34002	Condenser, .001 Mfd. (Molded)	52	W -28589	Resistor, 350 Ohm 1/4 W. Flex.
19	W -32780B	Condenser, .05 Mfd. 400 V.	53	W -28106	Resistor, 500 Ohm 1/2 W. Flex.
20	G3 -34002	Condenser, .0005 Mfd. (Molded)	54	W -23012A	Resistor, 40 Ohm 1/4 W. Flex.
21	W -37732	Condenser, .3 Mfd. 160 V.	55	W -41193	Resistor, 1 Ohm 2 1/2 W. Flex.
22A	W -31219	Condenser, .023 Mfd. 200 V.	56	W -23013	Resistor, 2,000 Ohm 1 1/4 W. Flex.
22B	W -31219	Condenser, .023 Mfd. 200 V.	57	W -21273A	Resistor, 60,000 Ohm 1/4 W.
23A			58	W -37987	Resistor, 15,000 Ohm 1 W. Wire Wound
23E	W -36541	Condenser, .02 Mfd. 160 V.	59	W -41225	4 Section Candohm
24	W -30488	Condenser, .02 Mfd. 400 V.	60A	G151-36400	Socket Type 6K7
25A	W -32378	Condenser, .01 Mfd. 400 V.	60B	G151-36400	Socket Type 6K7
25B	W -32378	Condenser, .01 Mfd. 400 V.	61	G156-36400	Socket Type 6A8
26A	W -35936	Condenser, .05 Mfd. 200 V.	62	G164-36400	Socket Type 6R7
26B	W -35936	Condenser, .05 Mfd. 200 V.	63	G152-36400	Socket Type 6C5
27	W -30805	Condenser, .01 Mfd. 400 V.	64A	G165-36400	Socket Type 6N6
28	W -32380	Condenser, .05 Mfd. 200 V.	64B	G165-36400	Socket Type 6N6
29	W -23615	Condenser, .05 Mfd. 400 V.	65	G167-36400	Socket For W41187 (5 prong tube)
30	W -37891	3 Section Shunt Trimmer Assembly	66	G154-36400	Socket Type 5Z4
31	W -35951	3 Section Shunt Trimmer Assembly	67	W -40193	Speaker 63CJ4
32Z	W -37874	B. C. Osc. Series Trimmer Cond.	68	W -41446	Switch, Multivox Control 1
32Y	W -37874	P. Osc. Series Trimmer Cond.	69	C -37958E	Switch, Band Selector
33	G18 -34000	H. F. Fixed Series Condenser	70	C27 -26719	Ant. & Grd. Terminal Board Assy.
34	G47 -33002	3 Section Var. Tuning Condenser	71	G1 -37995	Audio Input Transformer
		Dial Drive Unit	72	G43 -25669	Power Supply Transformer (110V. 60Cy)
		Dial Glass	73	G48 -24628	Audio Output Transformer
		Mask for Dial	74Z	W -41259	Tuning Meter
		Dial Cushion	74Y		Bulb for Meter
		Dial Hand Screw	75	W -37683A	Universal Power Transformer
		Long Dial Hand	76	W -41445	Condenser .036 Mfd. 400 V.
		Short Dial Hand		MC54-41214	Complete Dial Assembly
		Coupling Unit		C -37894	Escutcheon
		Belt (Drive)		B -37896A	Escutcheon Retaining Spring
		Indicator Cable		B -37898	Dial Lens
		Volume Control 1st A. F. 3 Megohm		B -37897	Lens Retaining Spring
		Volume Control 2nd A. F. 1 Megohm		W -40365	Escutcheon Felt
35Z				W -37339	Knob (3 required)
35Y				W -40192B	Knob (2 required)

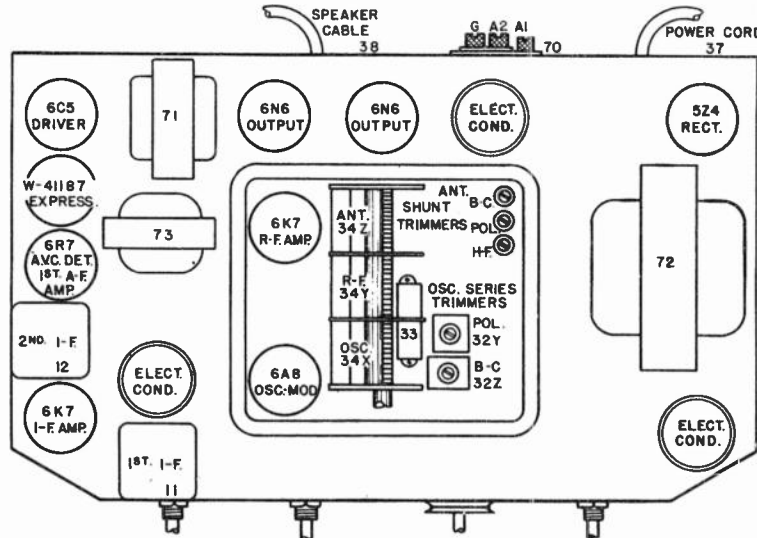
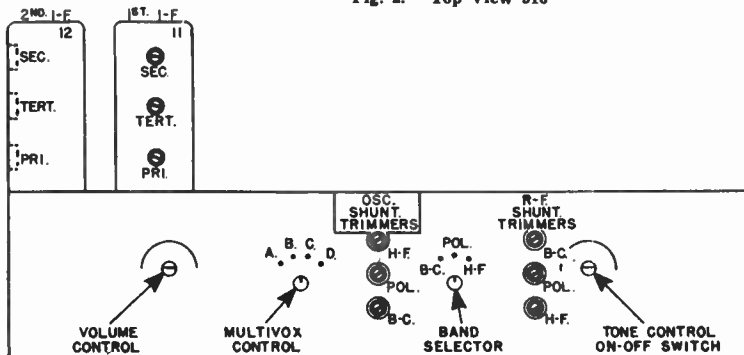


Fig. 2. Top View 916



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga	Go
6K7	R-F Amplifier	6.3	225	—	90	4.0	—	4.0	—	—
6A8	Osc.-Modulator	6.3	250	—	120	—	—	5.0	Var.	150
6K7	I-F Amplifier	6.3	235	—	120	4.0	—	4.0	—	—
6H6	Det. & A. V. C.	6.3	—	—	—	—	—	4.0	—	—
6C5	1st A-F Amp.	6.3	120	—	—	—	—	12.0	—	—
6N6	(2) Output	6.3	250	245	—	—	—	4.0	—	—
5Z4	Rectifier	5.0	—	—	—	—	—	350	—	—
W-41187 Expressionator—Variable.										

Voltage drop across speaker field 100 Volts.  
 Power output approximately 8 watts.  
 Power consumption approximately 115 watts.  
 All readings taken on 117.5 line voltage.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—Not Electrolytic—to P2 of the other Output Tube.

(b) Connect the output of the signal generator through a .02 mf. condenser, to the top cap of the 6K7 I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GND. terminal of the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the fidelity control knob to (NORMAL), and turn the Auto-Expressionator Control Switch to the left (NORMAL).

(d) Set the signal generator to 450 Kilocycles.

(e) Adjust the trimmer condensers on the top of the 2nd. I-F transformer for maximum output. Fig. 2 (Item 12).

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc.-Mod. tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st. I-F transformer (Tert. Fig. 4) so that it is moderately tight. **(DO NOT FORCE ADJUSTING SCREW).**

(h) Adjust the top (Sec) and then the bottom (Pri) trimmers of the 1st I-F transformer for maximum output.

(i) Transfer the lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom (Pri) trimmer of the 1st. I-F transformer. Then adjust the middle trimmer by opening until maximum output is obtained. **DO NOT READJUST TOP OR BOTTOM TRIMMERS AFTER THE MIDDLE TRIMMER.**

(C) SIGNAL INPUT FREQUENCIES

American Broadcast (BLUE)  
 Pol. & Amateur (RED)  
 High-Frequency (GREEN)

Shunt Aligned  
 1700 Kc.  
 6000 Kc.  
 18000 Kc.

Series Aligned  
 600 Kc.

NOTE 3: The high frequency oscillator on this receiver is neutralized by the addition of some small capacity coupling between the oscillator grid and the R-F grid of the 6A8 tube. This is accomplished by loosely wrapping a piece of insulated hook-up wire around the

Aligning R-F Amplifier.

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .0002 mf. condenser must be in series with the output lead of the signal generator and for the high-frequency band a 400 Ohm carbon resistor should be used in place of the condenser.

Each band should be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc.," "R-F" (Fig. 4) and "Ant." (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 Kilocycles less than the fundamental frequency. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 Kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the B-C "OSC" series trimmer, Item 28, Fig. 4, set the signal generator to 600 Kilocycles and then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

R-F grid lug and connecting it to the oscillator grid lug on the band selector switch.

It is necessary on some sets to adjust or even remove this coupling, in which case the wire should be unwrapped and threaded through the extra hole in the grid end of the R-F coil.

PARTS LIST—MODEL 926

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
IABCD	W -37922	Dial Light (bulb)	40	W -37909A	Pulley—Indicator Cable
	G3 -37852	Light Socket Assembly	41	W -30488	Condenser, .02 Mfd. 400 V.
2	W -40570	Dial Light Shield	42	G1 -34002	Condenser, .0025 Mfd.
3	G110-32000	Ant. Coil—B-C-B	43	B -33906	Power Cord & Plug
4	G111-32000	Ant. Coil—Pol-B.	43A	—21237A	Resistor, 60,000 Ohm 1/4 W.
5	G112-32000	Ant. Coil—H-F-B.	43B	—21237A	Resistor, 60,000 Ohm 1/4 W.
6	G76 -32001	R-F. Coil—B-C-B.	44	W -28589	Resistor, 350 Ohm 1/4 W. Flex.
7	G89 -32001	R-F. Coil—Pol-B.	44B	W -28589	Resistor, 350 Ohm 1/4 W. Flex.
8	G90 -32001	R-F. Coil—H-F-B.	45	—36321	Resistor, 400,000 Ohm 1/4 W.
9	G121-32002	Osc. Coil—B-C-B.	46	W -24537	Resistor, 60 Ohm 1/4 W. Flex.
10	G115-32002	Osc. Coil—Pol-B.	47A	—23403	Resistor, 150,000 Ohm 1/4 W.
11	G122-32002	Osc. Coil—H-F-B.	47B		See Item 79
12	G112-32004	1st I-F Assembly	48Z		Resistor, 1000 Ohms
13	G114-32004	2nd I-F Assembly	48Y	W -41484	Resistor, 7000 Ohms
14	G63 -24628	A-F Input Choke	48X		Resistor, 3,500 Ohms
15		None	48W		Resistor, 15,000 Ohms
16	W -36055	Condenser 35 Mfd. 400 V.	49	—35600	Resistor, 100,000 Ohm 1/4 W.
17	W -41080	Condenser 12 Mfd. 300 V.	50	—37987	Resistor, 15,000 Ohm 1 W.
18	W -41081	Condenser 16 Mfd. 250 V.	51	—37245	Resistor, 1.5 Megohm 1/4 W.
19	W -41598	Condenser 50 Mfd. 25 V.	52	—35930	Resistor, 200,000 Ohm 1/4 W.
20A	W -36541	Condenser, .02 Mfd. 160 V.	53	—23785	Resistor, 500,000 Ohm 1/4 W.
20C		None	54	—36319	Resistor, 75,000 Ohm 1/4 W.
21	W -36541	Condenser, .02 Mfd. 160 V.	55	—36952	Resistor, 30,000 Ohm 1 W.
22A	G2 -34002	Condenser, .0001 Mfd.	56	W -23013	Resistor, 2,000 Ohm 1/4 W. Flex.
22B	G2 -34002	Condenser, .0001 Mfd.	57	W -6705	Resistor, 3,500 Ohm 1 W.
22C	G2 -34002	Condenser, .0001 Mfd.	58AB	G151-36400	Socket Type 6K7
23		None	59	G156-36400	Socket Type 6A8
24	W -35936	Condenser, .05 Mfd. 200 V.	60	G155-36400	Socket Type 6H6
25	W -35139	Condenser, .004 Mfd. 400 V.	61	G152-36400	Socket Type 6C5
26		None	62AB	G165-36400	Socket Type 6N6
27	G20 -34000	Condenser, 4410 Mmfd.	63	G154-36400	Socket Type 5Z4
28	—40769	Condenser, E-C. Osc. Series Trimmer	64	G167-36400	Socket Type Plain
29	G7 -34000	Condenser, 1450 Mmfd.	65	636CJ4 "M"	Speaker "M" Spec. No. 1-D-641
30	G8 -34002	Condenser, .00001 Mfd.		—42882	Cone Assy. } Spk. 636CJ4 "M"
31A	W -35758	Condenser, .008 Mfd. 400 V.	66	G4 -37918	Field Coil
31B	W -35758	Condenser, .008 Mfd. 400 V.	67	C -40910	Speaker Cable
32	W -37988	Condenser, .017 Mfd. 200 V.	68	B -42295A	Band Selector Switch
33	W -28619	Condenser, .006 Mfd. 200 V.	69	W -41486	Fidelity & Line Switch
34	W -23615	Condenser, .05 Mfd. 400 V.	70	CZ7 -26719	Expressionator Switch
35	W -32380	Condenser, .05 Mfd. 200 V.	71		Ant. & Gnd. Terminal Assembly
36	W -29910A	Condenser, .25 Mfd. 200 V.	72	—41506	None
37	W -30805	Condenser, .01 Mfd. 400 V.		—41507	Power Transformer 110 V. 60 Cy.
38	W -35951	Condenser, 3 Section Shunt Trim. Assy.	75	G70 -24628	Power Transformer 110 V. 25 Cy.
39	G52 -33002	Condenser, 3 Section Var. Tuning	77Y	W -41259	Output Transformer
	C -42311	Dial Glass—Calibrated	77Z	W -41464	Tuning Meter Bulb
	MG-22-42320	Dial Mask (Paper background)	78	W -41301	Tuning Meter
	—42305	Dial Drive Complete Assembly	79	W -41209	Vol. Cont. 3 Megohm Tap at 1 Meg.
	—42180	Dial Drive Unit	80	W -41209	Condenser, .048 Mfd. 200 V.
	W -41144	Dial Hand (short)		—36317	Resistor, 10,000 Ohm 1/4 W.
	W -40486	Dial Hand (long)		C -42945	Escutcheon
	W -42306	Screw (Dial Hand Mtg.)		—42043	Escutcheon Rubber
	W -42307	Expressionator Flipper (R. H.)		C -42044	Dial Lens (Escutcheon Glass)
	—43080	Fidelity Flipper (L. H.)		D -30	Mtg. Screws (Escutcheon)
	—43081	Flipper Control Cable Assy. (R. H.)		W -40192B	Knob (Fidelity & Band Sel.) (2)
	—42308	Flipper Control Cable Assy. (L. H.)		W -37339	Knob (V. C. & Station Sel.)
	—40638	Control Cable Pulley (R. H.) (L. H.)		W -42490	Knob (Expressionator)
		Cable—Band Indicator Control		W -40230B	Crosley Shield
				W -32620	Nut—Shield Mtg.
				—6-SA	Cabinet

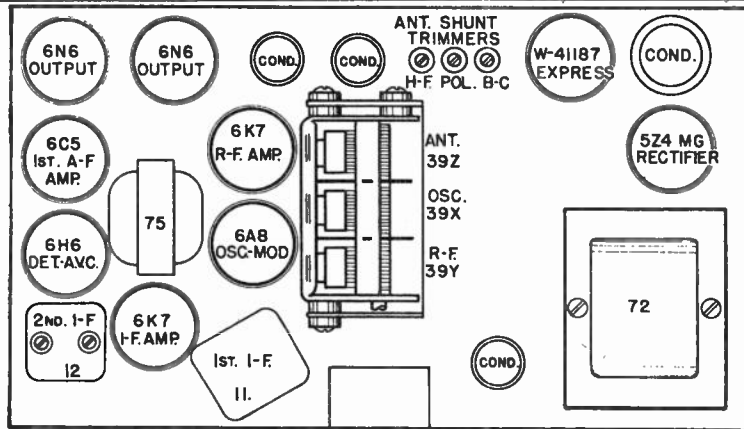


Fig. 2 Top View 926

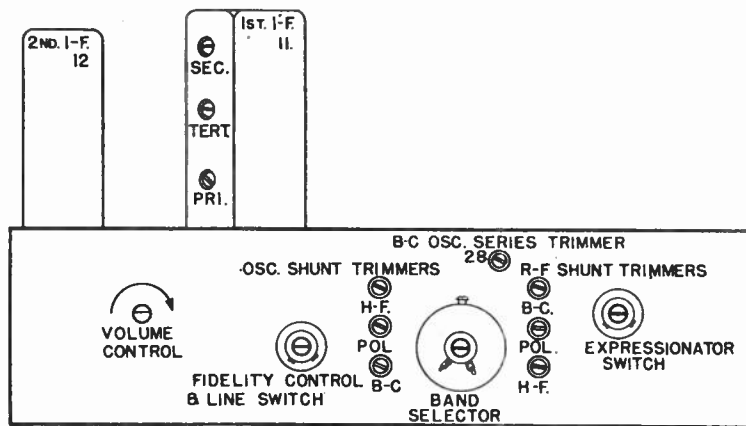


Fig. 4 Front View 926

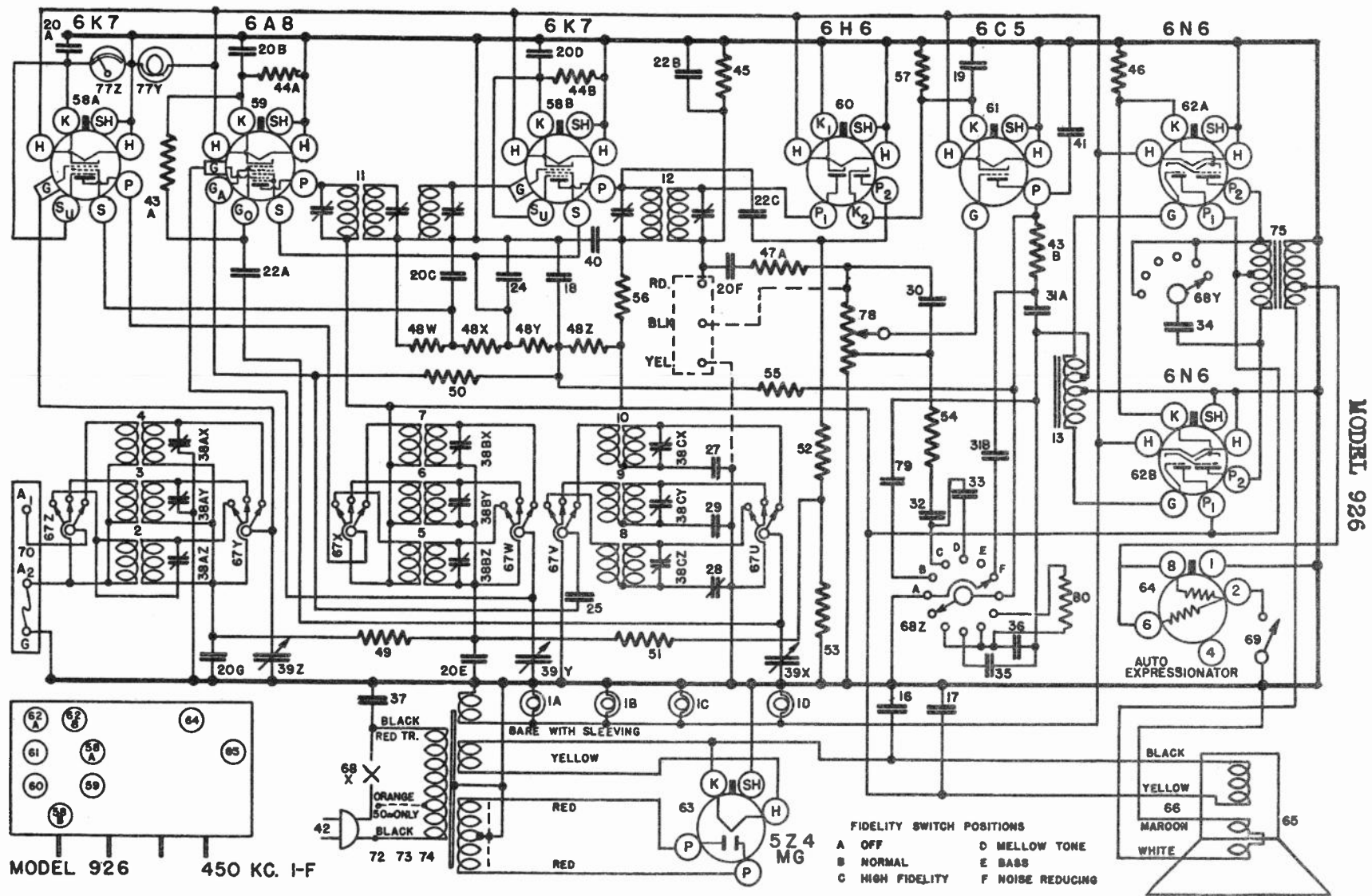
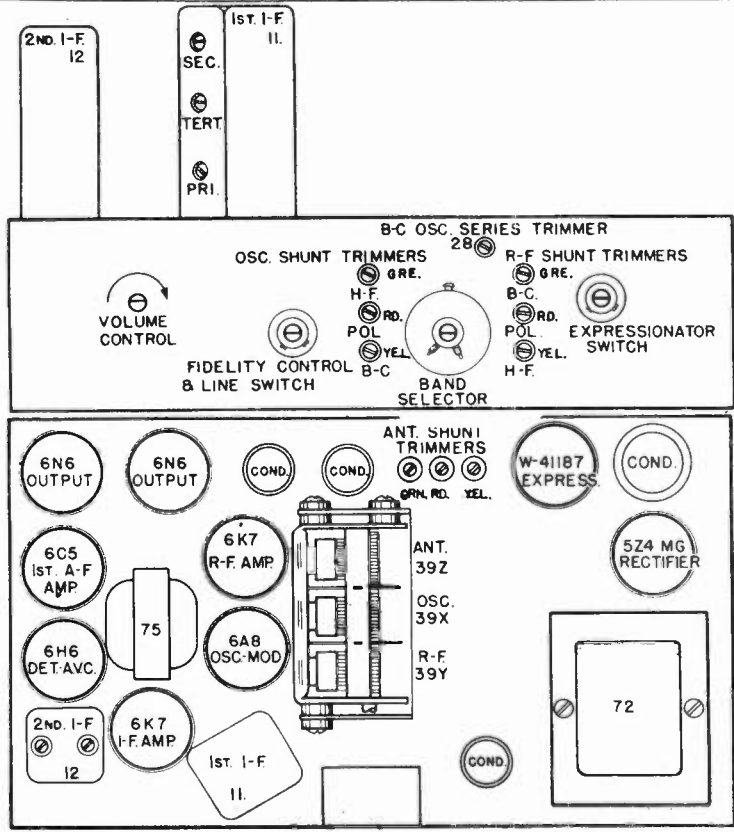


FIG. 1—WIRING DIAGRAM—MODEL 926

For schematic diagram and alignment procedure see pages

Note: On this Model, the I.F. frequency is 462 kilocycles rather than 450 kilocycles.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1A/BCD	W-37922	Dial Light (bulb)	43A	-21237A	Resistor, 60,000 Ohm 1/2 W.
	G3-37965	Light Socket Assembly	43B	-21237A	Resistor, 60,000 Ohm 1/2 W.
	W-40570	Dial Light Shield	44A	W-28589	Resistor, 350 Ohm 1/2 W. Flex.
2	G110-32000	Ant. Coil—170-555 Metres	44B	W-28589	Resistor, 350 Ohm 1/2 W. Flex.
3	G122-32000	Ant. Coil—760-2100 Metres	45	W-36321	Resistor, 400,000 Ohm 1/2 W.
4	G112-32000	Ant. Coil—17-53 Metres	46	W-24337	Resistor, 60 Ohm 1/2 W. Flex.
5	G76-32001	R-F. Coil—170-555 Metres	47A	W-23403	Resistor, 150,000 Ohm 1/2 W.
6	G86-32001	R-F. Coil—760-2100 Metres	47B		See Item 79
7	G84-32001	R-F. Coil—17-53 Metres	48Z		Resistor, 1000 Ohms
8	G115-32002	Osc. Coil—170-555 Metres	48Y	W-41484	Resistor, 7000 Ohms
9	G114-32002	Osc. Coil—760-2100 Metres	48X		Resistor, 3,500 Ohms
10	G107-32002	Osc. Coil—17-53 Metres	48W		Resistor, 15,000 Ohms
11	G112-32004	1st I-F Assembly—462 Kc.	49	W-35600	Resistor, 100,000 Ohm 1/2 W.
12	G114-32004	2nd I-F Assembly—462 Kc.	50	W-37987	Resistor, 15,000 Ohm 1 W.
13	G12-29535	A-F Input Choke	51	W-37345	Resistor, 1.5 Megohm 1/2 W.
14		None	52	W-35930	Resistor, 200,000 Ohm 1/2 W.
15		None	53	W-23785	Resistor, 500,000 Ohm 1/2 W.
16	W-36055	Condenser 35 Mfd. 400 V.	54	W-36319	Resistor, 75,000 Ohm 1/2 W.
17	W-41080	Condenser 12 Mfd. 300 V.	55	W-36952	Resistor, 30,000 Ohm 1 W.
18	W-41081	Condenser 16 Mfd. 250 V.	56	W-23013	Resistor, 2,000 Ohm 1 W. Flex.
19	W-41598	Condenser 50 Mfd. 25 V.	57	W-6705	Resistor, 3,500 Ohm 1 W.
20A	W-36541	Condenser .02 Mfd. 160 V.	58AH	G151-36400	Socket Type 6A7
To			59	G156-36400	Socket Type 6A8
20F	W-36541	Condenser .02 Mfd. 160 V.	60	G155-36400	Socket Type 6116
20	W-32379	Condenser .02 Mfd. 200 V.	61	G152-36400	Socket Type 6C5
22A	G2-34002	Condenser .0001 Mfd.	62AB	G165-36400	Socket Type 6N6
22B	G2-34002	Condenser .0001 Mfd.	63	G154-36400	Socket Type 5Z4
22C	G2-34002	Condenser .0001 Mfd.	64	G167-36400	Socket Type Plain
23	G11-34002	Condenser .000175 Mfd.	65	442CJ4 "M"	Speaker "M" Spec. No. 1-D-700
24	W-35936	Condenser .05 Mfd. 200 V.		-43172	Cone Assy. / Spk. 442CJ4 "M"
25	W-35139	Condenser .004 Mfd. 400 V.		-43176	Field Coil
26	G5-34002	Condenser .00005 Mfd.	66	G4-37918	Speaker Cable
27	G20-34000	Condenser, 4910 Mmfd.	67	C-40910	Band Selector Switch
28	-42830	Condenser, Osc. Series Trimmer	68	B-42285A	Fidelity & Line Switch
29	-40444	Condenser, L. W. Osc. Series Trimmer	69	W-41186	Expressionator Switch
30	G8-34002	Condenser, .00001 Mfd.	70	G26-26719	Ant. & Gnd. Terminal Assembly
31A	W-35758	Condenser .008 Mfd. 400 V.	71	G28-2671G	Phono Terminal Assembly
31B	W-35758	Condenser .008 Mfd. 400 V.	72	W-41306	Power Transformer 110 V. 60 Cy.
32	W-37988	Condenser .017 Mfd. 200 V.		-41507	Power Transformer 110 V. 25 Cy.
33	W-28619	Condenser .006 Mfd. 200 V.	75	G70-24628	Output Transformer
34	W-23615	Condenser .05 Mfd. 400 V.	77Y	W-41259	Tuning Meter
35	W-32380	Condenser .05 Mfd. 200 V.	77Z	W-41164	Tuning Meter Bulb
36	W-28910A	Condenser .25 Mfd. 200 V.	78	W-41301	Vol. Cont. 3 Megohm Tap at 1 Mex.
37	W-30805	Condenser .01 Mfd. 400 V.	79	W-41209	Condenser .018 Mfd. 200 V.
38	W-35951	Condenser, 3 Section Shunt Trim. Assy.	80	W-36317	Resistor, 10,000 Ohm 1/2 W.
39	D-33002	Condenser, 3 Section Var. Tuning	C	W-37884	Escutcheon
	D-42232	Dial Glass—Calibrated	B	W-37886	Escutcheon Retaining Ring
	D-42921	Dial Mask (Paper background)	B	W-37888	Dial Lens (Escutcheon Glass)
	MG23-42865	Dial Drive Complete Assembly	B	W-41658	Spring Lens Retaining
	W-42924	Dial Drive Unit	D	W-30	Mtg. Screws (Escutcheon)
	W-41145	Dial Hand (short)	W	W-40192B	Knob (Fidelity & Band Sel.) (2)
	W-40485	Dial Hand (long)	W	W-37339	Knob (V. C. & Station Set.)
	W-40186	Screw (Dial Hand Mtg.)	W	W-42198	Knob (Expressionator)
	W-41582	Cable—Band Indicator Control	W	W-40230B	Crossed Shield
	W-37909A	Pulley—Indicator Cable	W	W-32820	Nut—Shield Mtg.
40	W-30488	Condenser, 02 Mfd. 400 V.	W	W-64C	Cabinet
41	G1-34002	Condenser, .00025 Mfd.			
42	B-33906	Power Cord and Plug			





TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Go	Ga
6U7G	R. F. Amplifier	6.3	225	125	0	Neg	—	—
6A8G	Modulator	6.3	265	125	0	Neg	Neg	125
6J5G	Oscillator	6.3	120	—	0	Neg	—	—
6U7G	I. F. Amplifier	6.3	225	125	0	Neg	—	—
6Q7G	Detector, AVC & A. F. Amplifier	6.3	115	—	0	Neg	—	—
6N6G (2)	Output	6.3	255	265	3.0	0	—	—
5Y3G	Rectifier	5.0	—	—	265	—	—	—
6T5	Tuning Indicator	—	—	—	—	—	—	—

Power consumption approximately 135 watts at 117.5 volts  
Power output approximately 12 watts.  
Voltage drop across speaker field 100 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch for the Medium Wave Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Long Wave and Medium Wave Bands a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Bands a 400 ohm carbon resistor

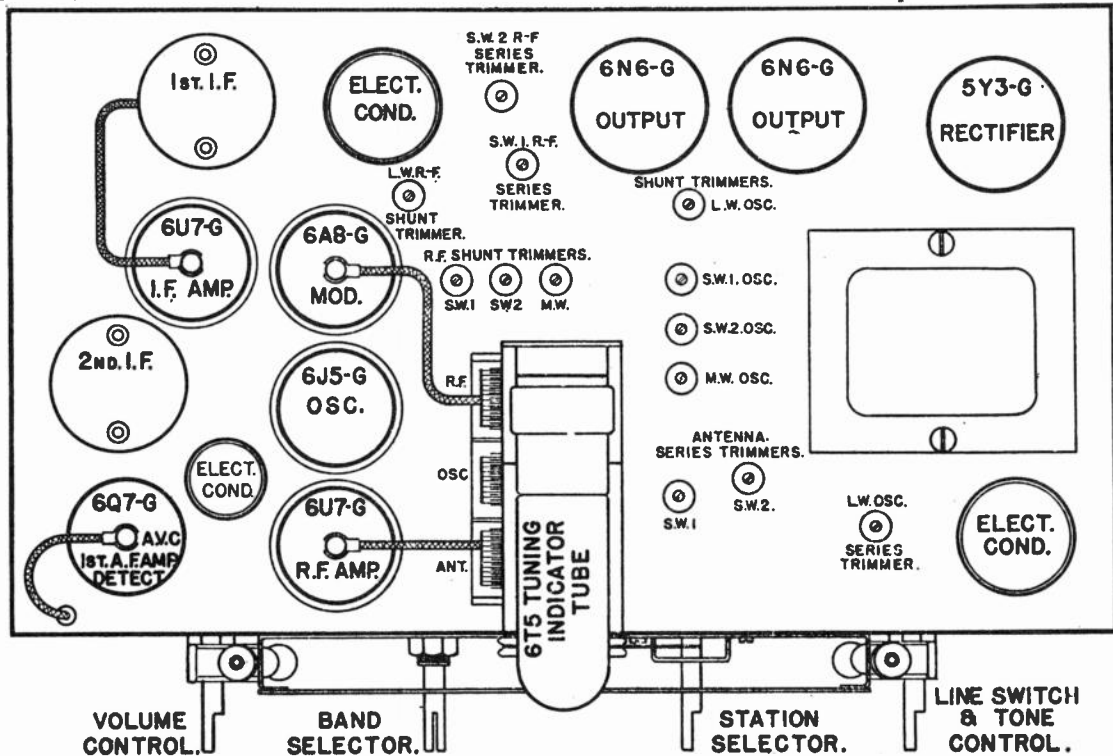
should be used in place of the condenser.

Each band should first be SHUNT aligned and then SERIES aligned where provision is made for series alignment. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY signal is heard (it is not necessary that the receiver tune through this signal).

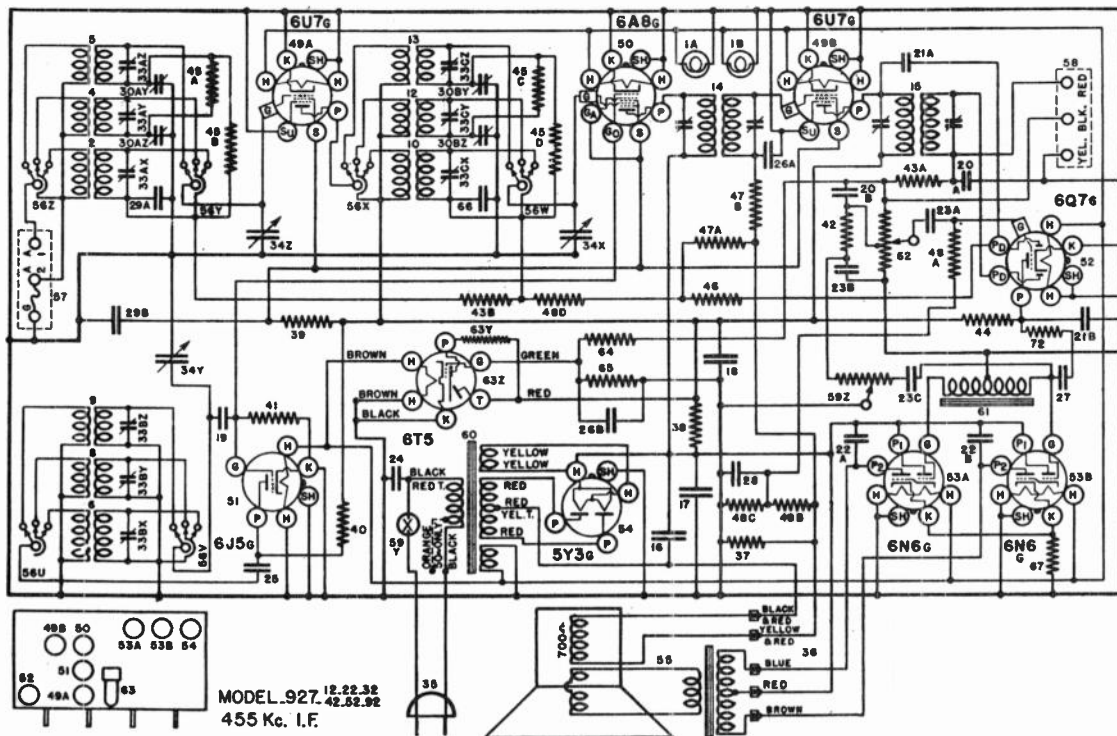
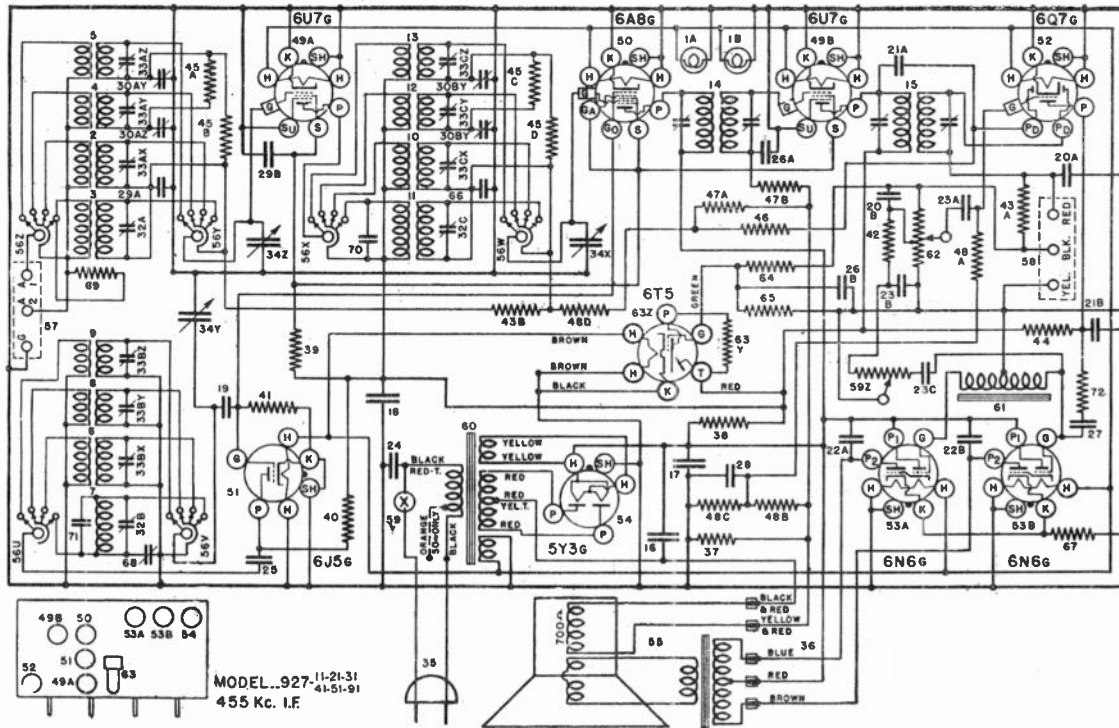
(b) Adjust the station selector so that the SHUNT ALIGNMENT signal (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. DO NOT READJUST THE OSCILLATOR TRIMMER.

(c) To align the series trimmers, set the signal generator to the frequencies indicated in ¶ (D) below and then tune-in the signal with the station selector for maximum output. To obtain the best adjustment of the series trimmers, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmers for maximum output.



(D) SIGNAL INPUT FREQUENCIES

Band	Min. Capacity	Shunt Alignment	Series Alignment		
			Anl.	R. F.	Osc.
L Wave	380 Kc.	350 Kc.			150 Kc.
M Wave	1660 Kc.	1400 Kc.			
S W-I	13 Mc.	12 Mc.	6 Mc.	6 Mc.	
S W-II	24 Mc.	22 Mc.	11 Mc.	11 Mc.	



PARTS LIST—MODEL 927

Figures in first column refer to parts in Diagrams.					
Item	Part No.	Description	Item	Part No.	Description
1AB	W —43567	Dial Light Bulb, 6-8 V.	48C	—37245	Resistor, 1.5 Megohm $\frac{1}{2}$ W. Carbon
	G11 —45398	D. L. Socket Assy.	48D	—37245	Resistor, 1.5 Megohm $\frac{1}{2}$ W. Carbon
2	G159—32000	Ant. Coil, 182-570 Metres	49	G171—36400	Socket, Type 6U7
3	G162—32000	Ant. Coil, 789-2190 Metres (927-1 only)	50	G156—36400	Socket, Type 6A8
4	G161—32000	Ant. Coil, 23.1-56 Metres	51	G186—36400	Socket, Type 6J5
5	G160—32000	Ant. Coil, 12.5-30 Metres	52	G160—36400	Socket, Type 6Q7
6	G132—32002	Osc. Coil, 182-570 Metres	53	G165—36400	Socket, Type 6N6
7	G165—32002	Osc. Coil, 789-2190 Metres (927-1 only)	54	G173—36400	Socket, Type 5Y3
8	G163—32002	Osc. Coil, 23.1-56 Metres	W	—40911	Tube Shield
9	G164—32002	Osc. Coil, 12.5-30 Metres	55	477-BJ-5	Speaker, Spec. 1-D-1241
10	G98 —32001	R-F. Coil, 182-570 Metres		—45539	V. C. and Cone Assy.
11	G101—32001	R-F. Coil, 789-2190 Metres (927-1 only)		—45540	Field Coil (700 Ohms—120 M. A.)
12	G99 —32001	R-F. Coil, 23.1-56 Metres		—45541	Output Trans.
13	G100—32001	R-F. Coil, 12.5-30 Metres		677-BJ-5	Speaker, Spec. 1-D-1243
14	G175—32004	1st I-F., 455 Kc.		—45542	V. C. and Cone Assy.
15	G176—32004	2nd I-F., 455 Kc.		—45543	Field Coil (700 Ohms—120 M. A.)
	W —44119	Insulating Washer, Used on Item 16		—45544	Output Trans.
	W —44120	Insulating Washer Extruded, Used on Item 16	56	—45227	Band Switch (927-1 only)
16	W —36055B	Condenser, 35 Mf. 400 V. Electrolytic	56	—45213	Band Switch (927-2 only)
17	W —44438A	Condenser, 40 Mf. 300 V. Electrolytic	57	G27 —26719	Ant. and Gnd. Terminal Assy.
18	W —44012	Condenser, 16 Mf. 250 V. Electrolytic	58	G36 —26719	Phono Terminal Assy.
19	G13 —34002	Condenser, .000035 Mf. 200 V. Molded	59Z		{ Tone Control, 1 Meg.
20A	G2 —34002	Condenser, .0001 Mf. 200 V. Molded	59Y		{ Line Switch
20B	G2 —34002	Condenser, .0001 Mf. 200 V. Molded	60	—45370	Power Trans., 110 V.—60 Cy. (11)
21A	G1 —34002	Condenser, .00025 Mf. 200 V. Molded		—45373	Power Trans., 110 V.—50 Cy. (21)
21B	G1 —34002	Condenser, .00025 Mf. 200 V. Molded		—45374	Power Trans., 220 V.—50 Cy. (31)
22A	W —35139	Condenser, .004 Mf. 400 V. Tubular		—45371	Power Trans., 110 V.—25 Cy. (41)
22B	W —35139	Condenser, .004 Mf. 400 V. Tubular		—45372	Power Trans., 220 V.—25 Cy. (51)
23A	W —28619	Condenser, .006 Mf. 200 V. Tubular	61	G82 —24628	Power Trans., Universal (91)
23B	W —28619	Condenser, .006 Mf. 200 V. Tubular	62	—24628	Audio Input Choke
23C	W —28619	Condenser, .006 Mf. 200 V. Tubular	63Z	—44773	Volume Control, 1 Meg.
24	W —30805	Condenser, .01 Mf. 400 V. Tubular	63Y	W —44121	{ 6T5 Socket Assy.
25	W —32378	Condenser, .01 Mf. 400 V. Tubular		W —45239	{ Resistor, 1 Meg. (In Base of 6T5 Socket)
26A	W —28621	Condenser, .02 Mf. 200 V. Tubular		MG37—45271	Bracket to Dial (6T5 Mtg.)
26B	W —28621	Condenser, .02 Mf. 200 V. Tubular	64	—26578	Bracket with Socket Clamp (6T5 Mtg.)
27	W —29910A	Condenser, .25 Mf. 200 V. Tubular	65	—26577	Resistor, 5 Megohm $\frac{1}{2}$ W. Carbon
28	W —27216	Condenser, .05 Mf. 200 V. Tubular	66	W —36541	Resistor, 3 Megohm $\frac{1}{2}$ W. Carbon
29A	W —35936	Condenser, .05 Mf. 200 V. Tubular	67	W —23012A	Condenser, .02 Mf. 160 V. Tubular
29B	W —35936	Condenser, .05 Mf. 200 V. Tubular	68	—45203	Resistor, 40 Ohm $\frac{3}{4}$ W. Flexible
30AZ		{ S. W.-2 Ant. Series Trimmer Cond.	69	—24814	L. W. Osc. Series Trimmer Cond. (927-1 only)
30AY		{ S. W.-1 Ant. Series Trimmer Cond.	70	G11 —34002	Resistor, 7,000 Ohm $\frac{1}{2}$ W. Carbon (927-1 only)
30BZ		{ S. W.-2 R-F. Series Trimmer Cond.	71	G6 —34002	Condenser, .000025 Mf. 200 V. Molded (927-1 only)
30BY		{ S. W.-1 R-F. Series Trimmer Cond.	72	—33390	Resistor, 30,000 Ohm $\frac{1}{2}$ W. Carbon (927-2 only)
31				7GK	Cabinet—Table Model (927-1)
32A	W —44516	L. W. Ant. Shunt Trimmer Cond. (927-1 only)		7GF	Cabinet—Table Model (927-2)
32B	W —44516	L. W. Osc. Shunt Trimmer Cond. (927-1 only)		7TK	Cabinet—Console Model (927-1)
32C	W —44516	L. W. R-F. Shunt Trimmer Cond. (927-1 only)		7TF	Cabinet—Console Model (927-2)
33	W —35951A	3 Section Shunt Trimmer Assy.	C	—45122	Escutcheon
34	G61 —33002	3 Section Gang Condenser (Variable)	W	—36884	Mtg. Screws—Tun. Indic. Escut.
	MG93—45126	Dial Face and Mtg. Plate (927-1 only)	W	—45362	Tuning Indic. Escutcheon
	MG94—45126	Dial Face and Mtg. Plate (927-2 only)	W	—45248	Knob—Band Switch (7TK and 7TF Cab.)
	C —45244B	Dial Mtg. Bracket	W	—45375	Knob—Tone Control (7TK and 7TF Cab.)
	G7 —43564	Pulley and Hub Assy.	W	—45247	Knob—Vol. Cont. & Sta. Sel. (7TK & 7TF Cab.)
	—41582	Drive Cord (21 Inches)	W	—44381B	Knob—Vol. Cont. & Sta. Sel. (7GK & 7GF Cab.)
	—43561	Cord Tension Spring	W	—45389	Knob—Tone Control (7GK and 7GF Cab.)
	W —45360A	Drive Shaft	W	—45376	Knob—Band Switch (7GK and 7GF Cab.)
	W —43542B	Drive Shaft Mtg. Bracket	W	—36117	Rubber Mtg. Foot
	W —43549	Retaining Ring—Drive Shaft	G1	—42790	Phono Motor Bd. Assy., 50 Cy. 110 V. 78 R.P.M.
	W —45334A	Pointer		—43530	Phono Motor only, 50 Cy. 110 V. 78 R.P.M.
	W —40486	Pointer Mtg. Screw	G2	—42790	Phono Motor Bd. Assy., 25 Cy. 110 V. 78 R.P.M.
35	B —33906A	Power Cord and Plug		—43531	Phono Motor only, 25 Cy. 110 V. 78 R.P.M.
36	G1 —45378	5 Lead Speaker Cable Assy.	G3	—42790	Phono Motor Bd. Assy., 50 Cy. 220 V. 78 R.P.M.
37	W —37631	Resistor, 32 Ohm $\frac{1}{2}$ W. Flexible		—43532	Phono Motor only, 50 Cy. 220 V. 78 R.P.M.
38	W —26422	Resistor, 1,000 Ohm 4W. Flexible	G4	—42790	Phono Motor Bd. Assy., 25 Cy. 220 V. 78 R.P.M.
39	—44008	Resistor, 10,000 Ohm 2W. Carbon		—43533	Phono Motor only, 25 Cy. 220 V. 78 R.P.M.
40	—5370A	Resistor, 20,000 Ohm 1W. Carbon	G5	—42790	Phono Motor Bd. Assy., 60 Cy. 110 V. 78 R.P.M.
41	—35928	Resistor, 60,000 Ohm $\frac{1}{2}$ W. Insulated		—43534	Phono Motor only, 60 Cy. 110 V. 78 R.P.M.
42	—37472	Resistor, 50,000 Ohm $\frac{1}{4}$ W. Carbon	G6	—42790	Phono Motor Bd. Assy., 40 Cy. 110 V. 78 R.P.M.
43A	—35600	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Insulated		—43639	Phono Motor only, 40 Cy. 110 V. 78 R.P.M.
43B	—35600	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Insulated	W	—43658	Pickup Arm
44	—23403	Resistor, 150,000 Ohm $\frac{1}{2}$ W. Carbon	W	—45392	Wall Tap—Receptical
45A	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated	W	—33503	Needle Cup Lid
45B	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated	W	—33502	Needle Cup
45C	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated	W	—33906A	Cord and Plug (Phono-Power)
45D	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated	B	—20757A	Phono-Radio Switch Plate
46	—23785	Resistor, 500,000 Ohm $\frac{1}{2}$ W. Carbon	W	—27266A	Phono-Radio Switch
47A	—35602	Resistor, 1 Megohm $\frac{1}{4}$ W. Insulated			
47B	—35602	Resistor, 1 Megohm $\frac{1}{4}$ W. Insulated			
48A	—37245	Resistor, 1.5 Megohm $\frac{1}{2}$ W. Carbon			
48B	—37245	Resistor, 1.5 Megohm $\frac{1}{2}$ W. Carbon			

## MODEL 936

### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band (GREEN).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on the top of the 3rd I-F Transformer for maximum output.

(f) Open the middle trimmer of the 2nd I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut.)

(g) Adjust the top trimmer of the 2nd I-F transformer for maximum reading on the output meter.

(h) Adjust the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. (Do not readjust the trimmers on the 3rd I-F transformer).

(i) Adjust both trimmers located on top of the 1st I-F transformer for maximum reading on the output meter.

(j) Adjust the middle trimmer of the 2nd I-F transformer for maximum output.

### Aligning R-F Amplifier.

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the ORANGE band a .0002 mfd. con-

denser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

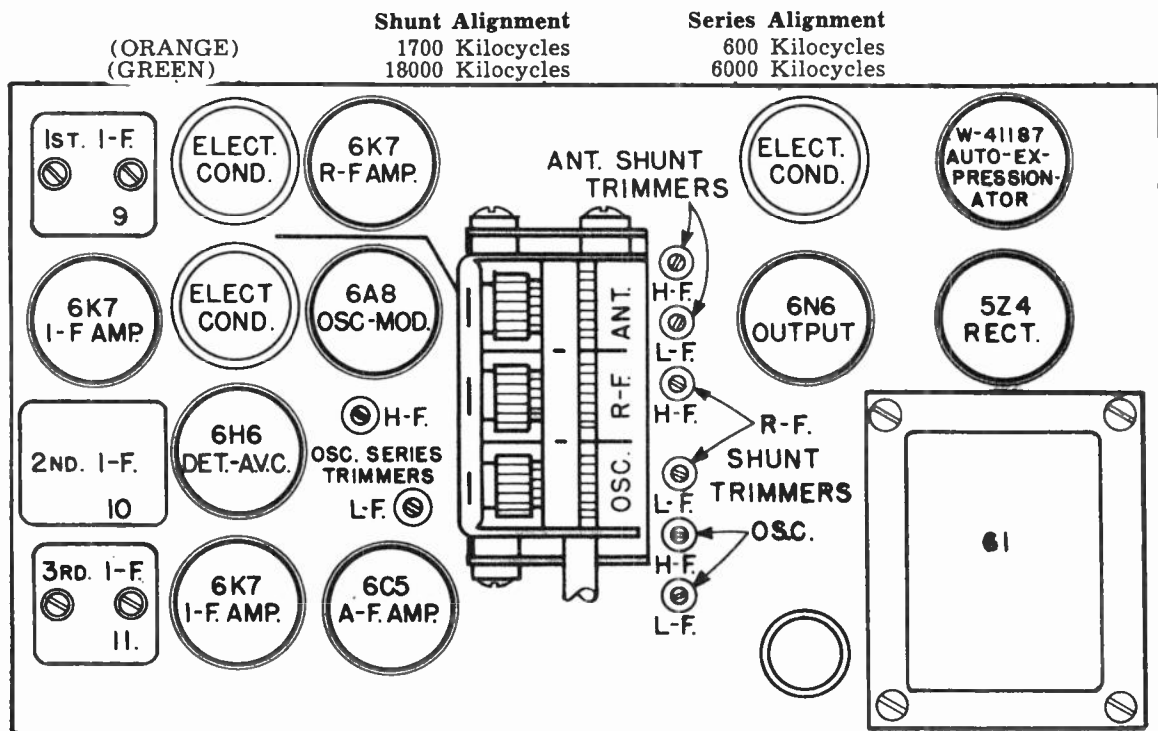
Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC," "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers. **DO NOT READJUST** the "OSC" TRIMMER.

NOTE: When shunt aligning the GREEN band care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

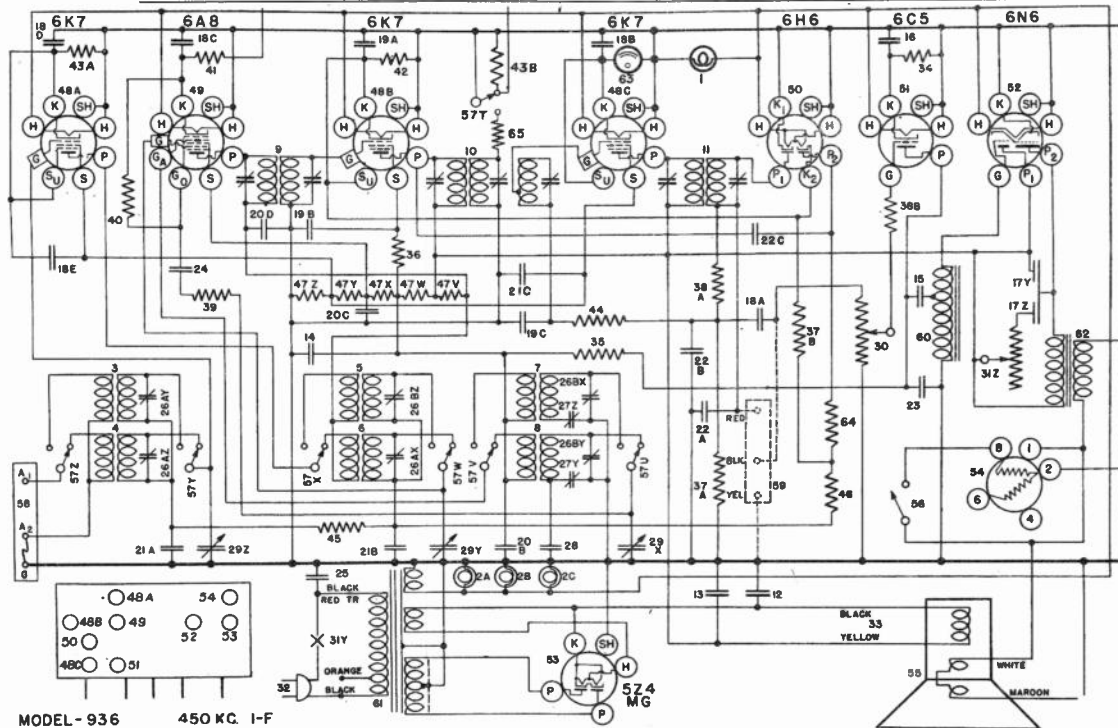


MODEL 936

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>t</sub>	S	S <sub>u</sub>	K	K <sub>1</sub>	G <sub>a</sub>	G <sub>o</sub>
6K7	R-F Amplifier	6.3	220	—	97	4.7	4.7	—	—	—
6A8	Oscillator-Mod.	6.3	220	—	128	—	5.0	—	152	Var.
6K7	1st I-F Amplifier	6.3	245	—	119	3.5	3.5	—	—	—
6K7	2nd I-F Amplifier	6.3	245	0	95	2.0	2.0	—	—	—
6H6	Detector & AFC	6.3	0	—	—	—	—	3.5	—	—
6C5	A-F Amplifier	6.3	71	—	—	—	—	—	—	—
6N6	Output	6.3	255	240	—	—	—	—	—	—
5Z4	Rectifier	5.0	—	—	—	—	350	—	—	—
W-41187	Auto-Expressionator.	Varies with power output.								

Voltage drop across speaker field 100 volts.  
 Power Output approximately 5 watts.  
 Power consumption approximately 120 watts.  
 All readings taken on 117 5 volt A-C line.



MODEL - 936 450 KC. I-F

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -41464	Bulb for Tuning Meter	35	-35928	Resistor, 60,000 Ohm 1/4 W. Car.
2	W -37922	Bulb Dial Light	36	-36317	Resistor, 10,000 Ohm 1/4 W. Car.
3	G110 -32030	Ant. Coil -540-1725 Kc.	37AB	-36322	Resistor, 500,000 Ohm 1/4 W. Car.
4	G125 -32000	Ant. Coil -3,000-18,000 Kc.	38AB	-36930	Resistor, 200,000 Ohm 1/4 W. Car.
5	G87 -32001	R-F. Coil -540-1725 Kc.	39	-42401	Resistor, 100 Ohm 1/4 W. Car.
6	G88 -32001	R-F. Coil -6,000-18,000 Kc.	40	-40757	Resistor, 50,000 Ohm 1/4 W. Car.
7	G119 -32002	Osc. Coil -540-1725 Kc.	41	W -28589	Resistor, 350 Ohm 1/4 W. Flex.
8	G120 -32002	Osc. Coil -6,000-18,000 Kc.	42	W -28106	Resistor, 500 Ohm 1/4 W. Flex.
9	G130 -32004	1st I-F. Assy. 450 Kc.	43AB	W -25307	Resistor, 275 Ohm 1/4 W. Flex.
10	G127 -32004	2nd I-F. Assy. 450 Kc.	44	-36588	Resistor, 3 Megohm 1/4 W. Car.
11	G131 -32004	3rd I-F. Assy. 450 Kc.	45	-35600	Resistor, 100,000 Ohm 1/4 W. Car.
12	W -36055	Condenser, 35 Mf. 400 V.	46	-37245	Resistor, 1.5 Megohm 1/4 W. Car.
13	W -36057	Condenser, 40 Mf. 300 V.	47Z		Resistor, 25,000 Ohm
14	W -40325	Condenser, 50 Mf. 150 V.	47Y		Resistor, 5,300 Ohm
15	W -42495	Condenser, 15 Mf. 200 V.	47X	W -42499B	Resistor, 2,300 Ohm
16	W -41598	Condenser, 50 Mf. 25 V.	47W		Resistor, 5,000 Ohm
17Z	W -31052	Condenser, 55 Mf. 400 V.	47V		Resistor, 2,000 Ohm
18AB	W -36541	Condenser, 304 Mf. 400 V.	48ABC	G151 -36400	Socket Type 6K7
19ABC	W -28621	Condenser, .02 Mf. 160 V.	49	G156 -36400	Socket Type 6A8
20BCD	W -32378	Condenser, .01 Mf. 400 V.	50	G155 -36400	Socket Type 6H6
21ABC	W -35936	Condenser, .02 Mf. 200 V.	51	G152 -36400	Socket Type 6C5
22ABC	G2 -34002	Condenser, .0001 Mf. 200 V.	52	G165 -36400	Socket Type 6N6
23	G3 -34002	Condenser, .0005 Mf. 200 V.	53	G154 -36400	Socket Type 5Z4
24	G5 -34002	Condenser, .0005 Mf. 200 V.	54	G167 -36400	Socket Auto Expressionator
25	W -30805	Condenser, .01 Mf. 400 V.	55	442C14 "M"	Speaker Spec. 1-D-700
26AB	W -42498	3 Section Shunt Trimmer		-43172	Cone Assy. for Above Speaker
27	W -37874	2 Sect. Osc. Series Trimmer		-43176	Field Coil for Above Speaker
28	G2 -34000	Condenser, 3104 Mmf.		-42377	Speaker 1-D-641
29	G52 -33002	3 Sect. Var. Tuning Condenser		-42882	Cone Assy. for Above Speaker
	G53 -42457	Dial Drive Assy. Complete		-40406	Field Coil
	MG35 -4195C	Drive Unit Only	56	-42402	Auto Expressionator Switch
		Dial Mask (paper background)	57	C -42566A	Band Select. Switch
	C -42555	Dial Glass (calibrated)	58	G27 -26719	Ant. and Grd. Terminal Assy.
	W -41145	Pointer-Short	59	G37 -26719	Phono. Terminal Assy.
	W -40485A	Pointer-Long	60	G14 -28535	Audio Coupling Choke
	W -40486	Screw-Pointer Mtg.	61	-42614B	Power Trans. 50 Cy. 110 V.
	W -40537	Coupling Unit		-42615B	Power Trans. 50 Cy. 220 V.
	W -41582	Indicator Control Cable		-43159A	Power Trans. 60 Cy. 110 V.
	W -41157	Drive Belt		-43160A	Power Trans. 25 Cy. 110 V.
	C -37894	Escutcheon		-43161A	Power Trans. 25 Cy. 220 V.
	B -37896	Ring-Escutcheon Mtg.	62	G69 -24628	Output Transformer
	B -37898	Lens-Escutcheon	63	W -42619	Tuning Meter (500 Ohm)
	B -37897	Ring-Lens Retaining	64	-35601	Resistor, 300,000 Ohm 1/4 W. Car.
	W -42250	Volume Control, 3 Megohm	65	-21876	Resistor, 10,000 Ohm 1/4 W. Car.
	W -37908	Tone Control, 100,000 Ohm		W -37339	Knob (3 Req.)
30	B -37908	Line Switch		W -42450	Knob (2 Req.)
31Z	B -33906A	Line Cord and Plug		-65C	Cabinet Table Model
31Y	G6 -37918	Cable for Speaker		-6PA	Cabinet
32		Resistor, 2,700 Ohm 1/4 W. Car.		-6SC	Cabinet
33					
34					

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go
6K7	R-F Amplifier	6.4	185	85	3.0	0	3.0	—
6L7	Modulator	6.4	180	85	—	0	3.0	-5 to -30
6C5	Oscillator	6.4	110	—	—	-5 to -30	0	—
6K7	I-F Amplifier	6.4	195	85	3.0	0	3	—
6Q7	Diode and A-F Amplifier	6.4	130	—	—	0	2.0	—
6C5	Output Driver	6.4	195	265	—	0	16.0	—
6F6	(2) Output	6.4	260	—	—	—	—	—
5Z4	Rectifier	4.9	350	—	—	0	6.5	—

Tuning I-F Amplifier to 450 Kilocycles.

(a) Connecting Output Meter: Connect one terminal of the output meter to the plate of one of the 6F6 Output tubes and the other terminal through a .1 mfd., or larger, condenser—not electrolytic—to the plate of the other 6F6 Output tube.

(b) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver chassis.

(c) Set the band selector switch to the broadcast band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the expressionator switch OFF.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum output. (7 Fig. 2).

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6L7 modulator tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (Do not force adjusting screw).

(h) Adjust the top and then the bottom trimmer of the 1st I-F transformer for maximum output.

(i) Transfer the output lead of the signal generator from the 6L7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(j) Adjust the middle trimmer of the 1st I-F trans-

former by opening condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

Aligning R-F Amplifier.

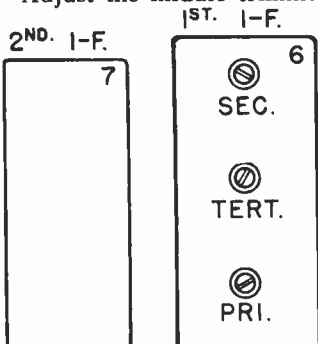
When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers, 30Y and 30Z Fig. 2, set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. At the same time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

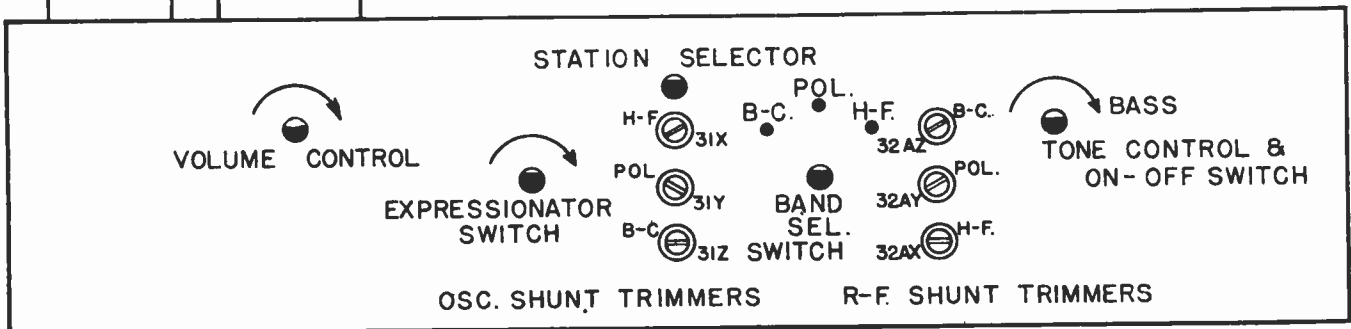
(c) Signal Input Frequencies:



American Broadcast Band (BLUE)  
Police Band (RED)  
High-Frequency Band (GREEN)

Shunt Aligned  
1700 Kc.  
6000 Kc.  
18000 Kc.

Series Aligned  
600 Kc.  
2500 Kc.  
.....



# MODEL 955

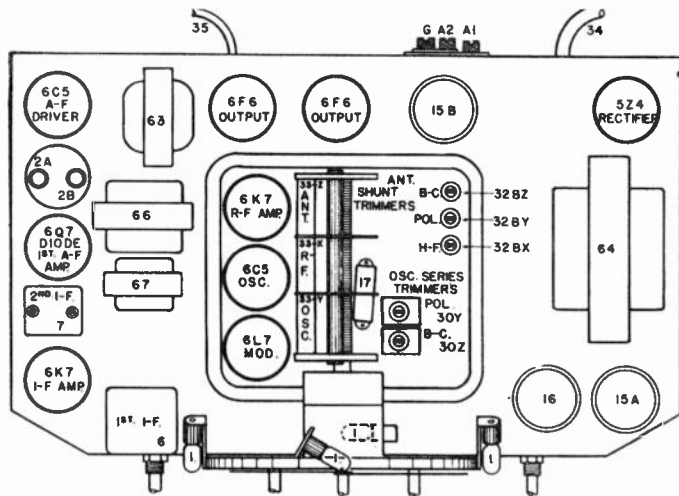


Fig. 2. Top View 955

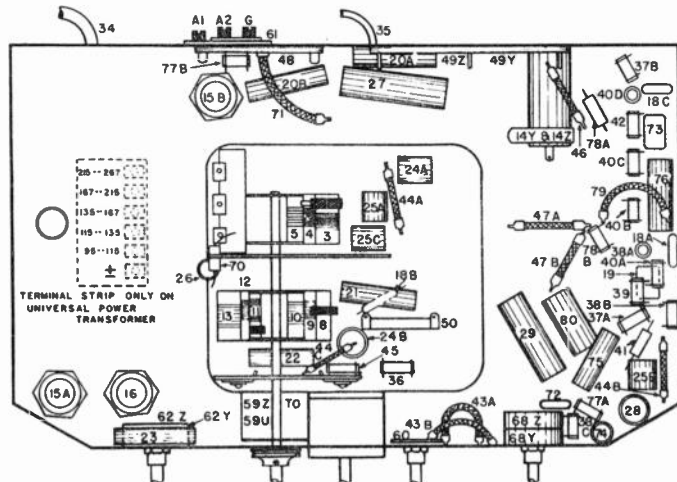


Fig. 3. Bottom View 955

Figures in first column refer to parts in Diagrams.

Item	Part No.	Name	Description	Item	Part No.	Name	Description
1A	W -37922	Bulb	Dial Light	43B	-40445	Resistor	3.5 ohm, wire wound
1B	W -37922	Bulb	Dial Light	44A	W -28589	Resistor	350 ohm, 1/4 W. Flex.
1C	W -37922	Bulb	Dial Light	44B	W -28589	Resistor	350 ohm, 1/2 W. Flex.
1D	W -37922	Bulb	Indicator light	44C	W -28589	Resistor	350 ohm, 1/2 W. Flex.
2A	W -37921	Bulb	Auto Expressionator Ballast	45	-21876	Resistor	10,000 ohm, 1/4 W. carbon
2B	W -37921	Bulb	Auto Expressionator Ballast	46	W -21452	Resistor	1,100 ohm, 1/4 W. Flex.
3	G94 -32000	Coil	Ant. 540-1900 Kc.	47A	W -23013	Resistor	2,000 ohm, 1/4 W. Flex.
4	G95 -32000	Coil	Ant. 1900-6000 Kc.	47B	W -23013	Resistor	2,000 ohm, 1/4 W. Flex.
5	G93 -32000	Coil	Ant. 6-18 Mc.	48	W -37901	Resistor	1,000 ohm, 1/2 W. wire wnd.
6	G90 -32004	Coil	1st I. F. Trans. Assm.	49Z	W -37955	Resistor	4,000 ohm } candohm
7	G92 -32004	Coil	2nd I. F. Trans. Assm.	49Y			4,000 ohm }
8	G80 -32002	Coil	Osc. 540-1900 Kc.	50	W -37987	Resistor	15,000 ohm
9	G81 -32002	Coil	Osc. 1900-6000 Kc.	51	G154 -36400	Socket	Type 5Z4
10	G78 -32002	Coil	Osc. 6-18 Mc.	52A	G152 -36400	Socket	Type 6C5
11	G68 -32001	Coil	R. F. 540-1900 Kc.	52B	G152 -36400	Socket	Type 6C5
12	G60 -32001	Coil	R. F. 1900-6000 Kc.	53A	G151 -36400	Socket	Type 6K7
13	G66 -32001	Coil	R. F. 6-18 Mc.	53B	G151 -36400	Socket	Type 6K7
14Z	W -37778	Condenser	12 mfd. 25 Volt.	54	G190 -36400	Socket	Type 6Q7
14Y			12 mfd. 25 Volt.	55	G159 -36400	Socket	Type 6L7
15A	W -30055	Condenser	35 mfd. 400 Volt	56A	G153 -36400	Socket	Type 6F6
15B	W -30055	Condenser	35 mfd. 400 Volt	56B	G153 -36400	Socket	Type 6F6
16	W -30057	Condenser	40 mfd. 300 Volt	57	G1 -37965	Socket	Auto Express. Assm.
17	G18 -34000	Condenser	.0054 mfd.-mica	58	Q3 -CJ-4	Speaker	
18A	G2 -34002	Condenser	.0001 mfd.-mica	59Z	C -37958	Switch	Band Selector
18B	G2 -34002	Condenser	.0001 mfd.-mica	59U			
18C	G2 -34002	Condenser	.0001 mfd.-mica	60	W -37956	Switch	Auto Expressionator
19	G1 -34002	Condenser	.00025 mfd.-mica	61	G27 -26719	Terminal	Ant. & Ground. Assm.
20A	W -35139	Condenser	.004 mfd. 400 Volt	62Z	-37900	Tone Control & A. C. Switch	
20B	W -35139	Condenser	.004 mfd. 400 Volt	62Y			
21	W -34477	Condenser	.006 mfd. 400 Volt	63	G1 -37995	Transformer	Audio
22	W -32378	Condenser	.01 mfd. 400 Volt	64	G43 -25689	Transformer	Power 110 V. 60 cycle
23	W -30805	Condenser	.01 mfd. 400 Volt	65	-37965	Transformer	Universal
24A	W -36541	Condenser	.02 mfd. 160 Volt	66	G37 -24628	Transformer	Output
24B	W -36541	Condenser	.02 mfd. 160 Volt	67	G36 -24028	Transformer	Auto Expressionator
25A	W -35036	Condenser	.05 mfd. 200 Volt	68Z	-37907	Volume Control	3 meg. 1st A. F. Grid 1 meg. 2nd A. F. Grid
25B	W -35036	Condenser	.05 mfd. 200 Volt	68Y			
25C	W -35036	Condenser	.05 mfd. 200 Volt	69	-None		
26	W -32380	Condenser	.05 mfd. 200 Volt	70	-35001	Resistor	300,000 ohms, Ins.
27	W -23615	Condenser	.05 mfd. 400 Volt	71	W -22873	Resistor	220 ohms, 2 1/2 W. Flex.
28	W -24049B	Condenser	.1 mfd. 200 Volt	72	G6 -34002	Condenser	.00025 mfd.-mica
29	W -37773	Condenser	.3 mfd. 100 Volt	73	G3 -34002	Condenser	.0005 mfd.-mica
30Z	-37874	Condenser	Series Trimmer	74	W -37988	Condenser	.017 mfd. 200 Volt
30Y			Series Trimmer	75	W -38021	Condenser	.02 mfd. 200 Volt
31Z	W -35951	Condenser	Osc. Trimmer 540-1900 Kc.	76	W -30488	Condenser	.02 mfd. 400 Volt
31Y			Osc. Trimmer 1900-6000 Kc.	77A	-22831	Resistor	15,000 ohm, 1/4 W.
31X	W -37801	Condenser	Osc. Trimmer 6-18 Mc.	77B	-22831	Resistor	15,000 ohm, 1/4 W.
32AZ			R. F. Trimmer 540-1900 Kc.	78A	-35000	Resistor	100,000 ohm, 1/2 W. Ins.
32AY	W -37801	Condenser	R. F. Trimmer 1900-6000 Kc.	78B	-35000	Resistor	100,000 ohm, 1/2 W. Ins.
32AX			R. F. Trimmers 6-18 Mc.	79	W -30900	Resistor	2600 ohm 1 1/2 W. Flex.
32BY	W -37801	Condenser	Ant. Trimmer 540-1900 Kc.	80	W -32780B	Condenser	.05 mfd. 400 Volt
32BX			Ant. Trimmer 1900-6000 Kc.		-37946	Complete	
32Z	G47 -33002	Condenser	Ant. Trimmer 6-18 Mc.		-40531	Belt	Drive
33Y			3 Section Var. Tuning		-40537	Coupling	Flex. Drive
33X	B -33906A	Cable			-40196	Face	Celluloid Dial
34			Power Supply			-37968	Dial Face
35	G1 -37918	Cable	Speaker		-40485	Pointer	Long
36	-21453	Resistor	40,000 ohm, 1/4 W.		-40484	Pointer	Short
37A	-23403	Resistor	150,000 ohm, 1/4 W.		-40486	Screw	Pointer Retaining
37B	-23403	Resistor	150,000 ohm, 1/4 W.		-37898	Lens	Dial
38A	-21455	Resistor	300,000 ohm 1/4 W.		B -37897	Spring	Dial Lens Retaining
38B	-21455	Resistor	300,000 ohm 1/4 W.		C -37804	Escutcheon	
38C	-21455	Resistor	300,000 ohm 1/4 W.		B -37800	Spring	Escutcheon Retaining
39	-33344	Resistor	400,000 ohm, 1/4 W.		W -40805	Felt	Escutcheon
40A	-23785	Resistor	500,000 ohm, 1/4 W.		W -37117	Foot	Rubber Mgt.
40B	-23785	Resistor	500,000 ohm, 1/4 W.		-40487	Cable	Indicator Control
40C	-23785	Resistor	500,000 ohm, 1/4 W.		W -37889	Knob	3 Required
40D	-23785	Resistor	500,000 ohm, 1/4 W.		W -40192	Knob	2 Required
41	-35602	Resistor	1. megohm, 1/4 W. Insul.		W -37900	Pulley	Band Selector Switch
42	-26577	Resistor	3. megohm, 1/4 W.		G2 -37965	Socket	Dial Light
43A	-40445	Resistor	3.5 ohm, wire wound		G3 -37965	Socket	Indicator Light

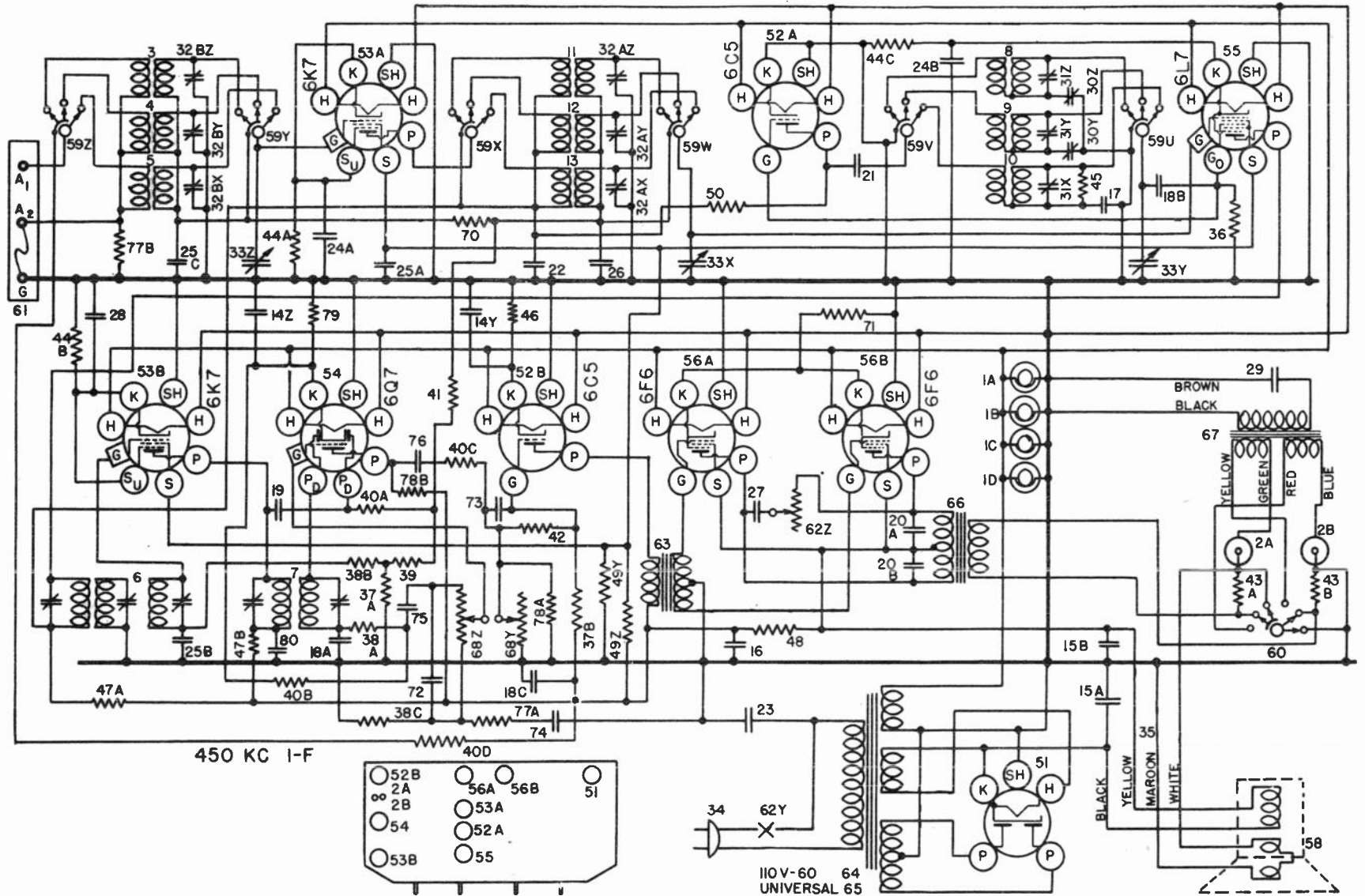


FIG. 1—WIRING DIAGRAM—MODEL 955



TUBE VOLTAGES—MODEL 1014 "CENTURION"

Type	Where Used	Ef	Ek	Eg	Esg	Esup.	Ep	Esl	Epl
			Bands 1-2	Bands 3-4-5					
6D6	R. F. Amp.	6.3	0	0	x	100	0	250	—
6A7	Osc. Mod.	6.3	11.0	0	x	100	0	250	—
6D6	1st I. F.	6.3	0	0	x	100	0	250	—
6F7	2nd I. F. & Det.	6.3	0	0	x	75	—	240	0
76	A. V. C.	6.3	0	0	x	—	—	x	—
6D6	1st A. F. Amp.	6.3	4	4	0	40	40	40	—
76	Phase Inv.	6.3	4	4	0	—	—	50	—
(2) 42	Output	6.3	16	16	0	250	—	245	—
80	Rect.	5.0	—	—	—	—	—	—	—

VOLTAGE DROP ACROSS FILTER CHOKES 20 VOLTS  
 VOLTAGE DROP ACROSS FIELD COIL 65 VOLTS  
 ALL Measurements Made With A 1000 Ohms Per Volt Voltmeter From Chassis  
 X IN ABOVE TABLE INDICATES HIGH RESISTANCE IN CIRCUIT WHICH PREVENTS ACCURATE MEASUREMENT.

PEAKING I. F. STAGES AT 456 Kc.

- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator at 456 kilocycles.
- III. Turn the volume control of the receiver on full. Turn the station selector until the tuning condenser plates are completely meshed and set the band switch to band No. 5.
- IV. (a) Peak both tuning condensers located on top of the first I.F. transformer shown on Fig. 4. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.  
 (b) Peak both tuning condensers located on top of the 2nd I. F. transformer shown on Fig. 4.  
 (c) Peak both tuning condensers located on top of the 3rd. I.F. transformer shown on Fig. 4.

PEAKING R. F. CIRCUITS

- I. Connecting test oscillator to receiver: It is necessary to connect a dummy antenna in series with the test oscillator and the antenna terminal of the receiver. On bands 1 and 2 this consists of a .0002 mfd. mica condenser. On bands 3, 4 and 5 it consists of a carbon resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal. If not, loosen nut and set pointer horizontal and tighten nut again. The setting of the band spread pointer is not important.
- II. To Peak Band No. 1. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.  
 (a) Set test oscillator at 350 Kc. Tune station selector to 350 Kc. (35 on dial). Then adjust oscillator parallel trimmer condenser, Fig. 3, for maximum output.  
 (b) With same dial settings peak the interstage and antenna parallel trimmer condenser for Band No. 1.  
 (c) (1) Set test oscillator at 150 Kc.  
 (2) Tune station selector in the region of 15—Band No. 1—on dial for maximum reading on the output meter.  
 (3) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3, 1/8 turn and re-tune station selector to 150 Kc. signal for maximum output, noting reading on output meter.  
 (4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser 1/8 turn and re-tune station selector to 150 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.  
 (d) Repeat operations (a) and (b) for more accurate adjustments.
- III. To Peak Band No. 2.  
 (a) Set test oscillator at 1400 Kc. Tune station selector to 1400 Kc. (140 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 2 for maximum output.  
 (b) With same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 2.  
 (c) (1) Set test oscillator at 600 Kc.  
 (2) Tune station selector in the region of 60—Band No. 2—on dial for maximum reading on the output meter.

(3) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3, 1/8 turn and re-tune station selector to 600 Kc. signal for maximum output, noting reading on output meter.

(4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser 1/8 turn and re-tune station selector to 600 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(d) Repeat operations (a) and (b) for more accurate adjustments.

IV. To Peak Band No. 3.

(a) Be sure to change dummy antenna as described in I under Peaking R.F. Circuits.  
 (b) Set test oscillator at 4 megacycles. Tune the station selector to 4 megacycles (4.0—Band No. 3 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 3 for maximum output.

(c) With the same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 3.

V. To Peak Band No. 4.

(a) Set test oscillator at 10 megacycles.  
 (b) Tune station selector to 10 megacycles (10—Band No. 4 on dial).  
 (c) Open oscillator parallel trimmer condenser for Band No. 4 about 3 turns from closed.  
 (d) Close the interstage parallel trimmer condenser for Band No. 4 and open 1/8 turn.  
 (e) Close the antenna parallel trimmer condenser for Band No. 4 and then open 1/2 turn.  
 (f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 9 on the dial and try to tune in the 10 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 10 megacycles and peak the antenna parallel trimmer condenser for maximum output.  
 (h) Open the interstage parallel trimmer condenser another 1/8 turn and re-tune the station selector to the 10 megacycle signal.

(i) Repeat operation (h) as many times as necessary to obtain the highest reading on the output meter on first peak obtained when opening trimmer condenser from closed position.

(j) Repeat operation (g) above.

VI. To Peak Band No. 5.

(a) Set test oscillator at 21 megacycles.  
 (b) Tune station selector to 21 megacycles (21—Band No. 5 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 5 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 5 and open 1/8 turn.

(e) Close the antenna parallel trimmer condenser for Band No. 5 and then open 1/2 turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 20 on the dial and try to tune in the 21 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 21 megacycles and Peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another 1/8 turn and re-tune the station selector to the 21 megacycle signal.

MODEL 1014

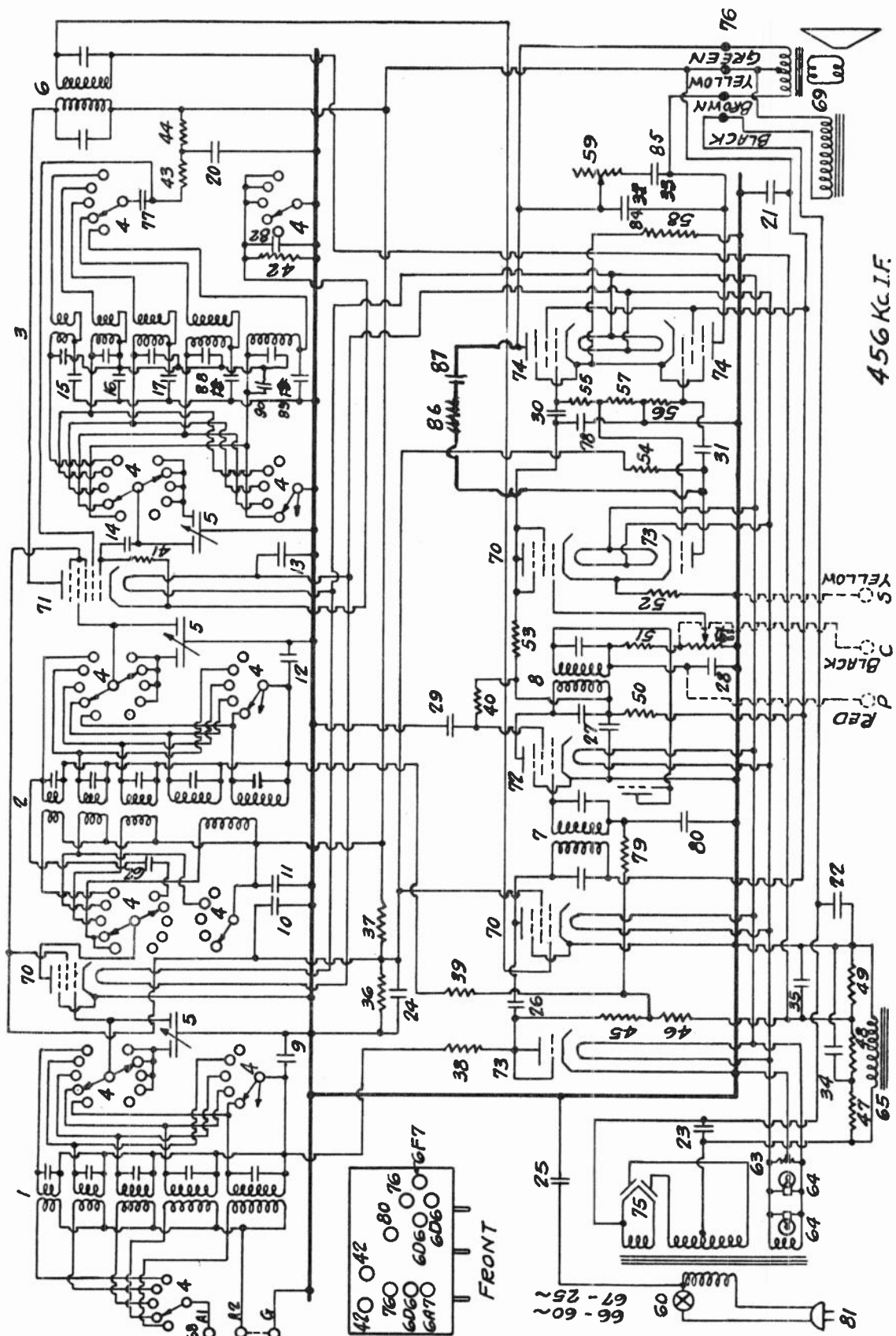


Fig. 1—Wiring Diagram of Model 1014 “Centurion”

# MODEL 1014

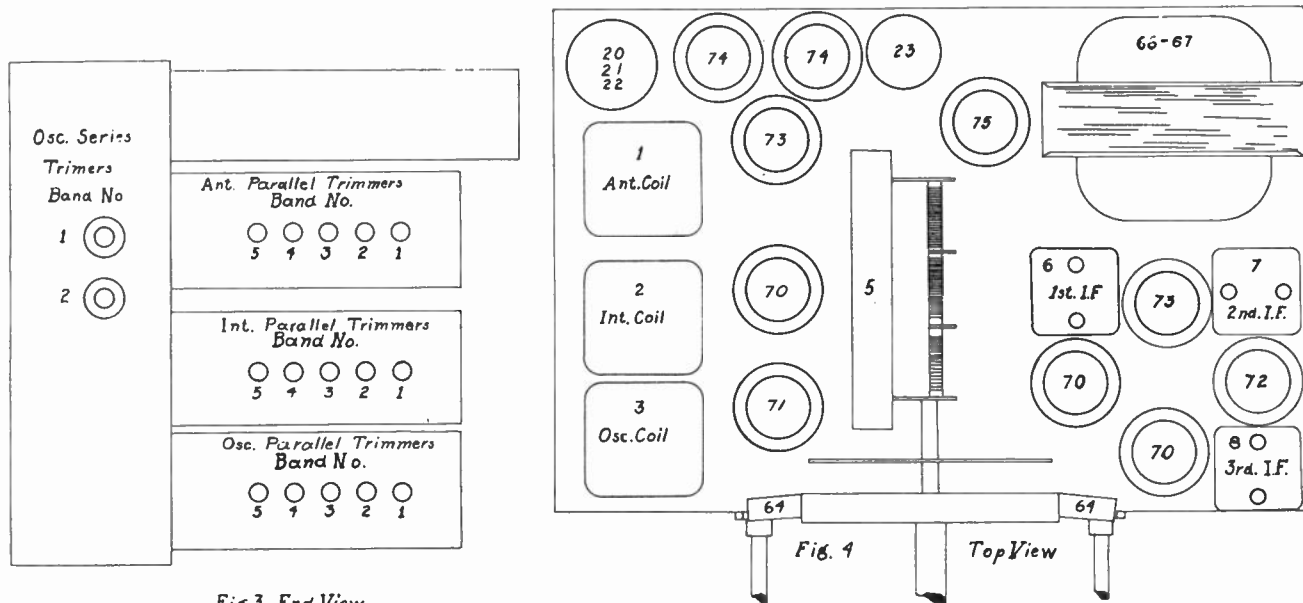


Fig 3 End View

## PARTS LIST—MODEL 1014 "CENTURION"

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G32-32000	Ant. Trans. Assembly	49	-21237A	60,000 Ohms Resistor
	G6-34593	Ant. Coil Assembly Only	50	W-30127	450 Ohms Flex. Resistor
	G4-34593	Ant. Coil Shield Assembly Only	51	-21455	300,000 Ohms Resistor
	W-34683	Aligning Condenser Assembly Only	52	-31093	2,700 Ohms Resistor
2	G20-32001	Inter. Trans. Assembly	53	-23403	150,000 Ohms Resistor
	G7-34893	Inter. Coil Assembly Only	54	-23409	150,000 Ohms Resistor
	G5-34593	Inter. Coil Shield Assembly Only	55	-23785	500,000 Ohms Resistor
	W-34683	Aligning Condenser Assembly Only	56	-23785	500,000 Ohms Resistor
3	G25-32002	Osc. Trans. Assembly	57	-21237A	60,000 Ohms Resistor
	G8-34593	Osc. Coil Assembly Only	58	W-22873	220 Ohms Flex. Resistor
	G5-34593	Osc. Coil Shield Assembly Only	59		Tone Control
	G4-34683	Aligning Condenser Assembly Only	60	W-25504B	On-Off Switch
	W-34002	0.00025 Mfd. Condenser	61	See Item 83	
4	B-34646	Band Change Switch	62	G1-34005	0.00025 Mfd. Condenser
5	G28-33002	Variable Condenser Assembly	63	W-32337	10-10 Ohms Resistor
	G20-32000	Dial Drive Assembly	64	See Item 5	Dial Light
	W-34057A	Dial Hand	65	G1-24828	Filter Choke
	W-34057B	Band Spread Pointer	66	G40-23660	Power Trans. 60 Cy 110 Volt
	G4-27134	Dial Light Bracket Assembly	67	B-35007	25 Cy. Power Trans.
	W-32128	Light Diffuser	68	G16-26719	Ant. Gnd. Terminal
	W-32244	Diffuser Retainer	69	-48CL	Speaker (Console)
6	G27-32004	1st I. F. Trans. Assembly		-48CL	Speaker (Table)
7	G28-32004	2nd I. F. Trans. Assembly	70	G75-28807	Socket 6D6
8	G20-32004	3rd I. F. Trans. Assembly		B-28006D	Tube Shield
9	W-32379	0.02 Mfd. 200 V. Condenser		W-27981A	Tube Shield Base
10	W-32378	0.01 Mfd. 400 V. Condenser	71	G2-33007	Socket 6A7
11	G8-34000	1500 Mmfd. Condenser		W-33072	Socket Cushion
12	W-32380	0.05 Mfd. 200 V. Condenser		W-28623A	Tube Shield
13	G1-34002	0.00025 Mfd. Condenser		G1-34072	Tube Shield Base
14	G1-34002	0.00025 Mfd. Condenser	72	G40-28807	Socket 6F7
15	G1-34000	1647 Mmfd. Condenser		W-28023A	Tube Shield
16	G2-34000	3104 Mmfd. Condenser		W-27981A	Tube Shield Base
17	G10-34000	1050 Mmfd. Condenser	73	G80-28807	Socket 70
18	See Item 88			W-28231B	Tube Shield
19	See Item 89			W-27981A	Tube Shield Base
20		6. Mfd. 300 Volt	74	G25-28807	Socket 42
21	W-34390	8. Mfd. 475 Volt Condenser	75	G6-28807	Socket 80
22		8. Mfd. 475 Volt	76	G5-31128	Speaker Terminal Board
23	W-26194B	12. Mfd. 475 Volt Condenser		W-34628	Terminal Board Cover
24	W-23615	0.05 Mfd. 400 Volt Condenser		W-34627	Terminal Board Insulator
25	W-30806	0.01 Mfd. 400 Volt Condenser	77	W-34847	0.0000 Mfd. 400 Volt Condenser
26	G1-34005	0.00025 Mfd. Condenser	78	G1-34005	0.00025 Mfd. Condenser
27	W-23191A	0.01 Mfd. 400 Volt Condenser	79	-26577	3 Megohm Resistor
28	G2-32004	0.0001 Mfd. Condenser	80	W-28621	0.02 Mfd. 200 Volt Condenser
29	W-23191A	0.01 Mfd. 400 Volt Condenser	81	B-33000A	Cord and Plug
30	W-23615	0.05 Mfd. 400 Volt Condenser	82	W-32379	.02 Mfd. 200 Volt Condenser
31	W-23615	0.05 Mfd. 400 Volt Condenser	83	W-28352	Level Control (1 Megohm)
32	See Item 84	0.03 Mfd. 400 Volt Condenser	84	W-35139	0.004 Mfd. 400 Volt Condenser
33	See Item 85		85	W-23615	0.05 Mfd. 400 Volt Condenser
34	W-29910A	0.25 Mfd. 400 Volt Condenser	86	-35140	350,000 Ohm Resistor
35	W-29910A	0.25 Mfd. 400 Volt Condenser	87	G6-34005	0.0002 Mfd. 300 Volt Condenser
36		15,000 Ohms	88		Osc. Trimmer Condenser
37	W-32301	10,000 Ohms Resistor	89	G20-33006	Osc. Trimmer Condenser
38	-26577	3 Megohm Resistor		G6-34002	0.00025 Mfd. Condenser
39	-26577	3 Megohm Resistor		W-34078B	Switch Knob
40	-23403	150,000 Ohms Resistor		W-31583B	Volume Control Knob
41	-21876	100,000 Ohms Resistor		W-31583B	Tone Control Knob
42	W-27503	1,400 Ohms Flex. Resistor		W-33994A	Station Selector Knob
43	-24814	7,000 Ohms Resistor		W-33994A	Vernier Knob
44	-24814	7,000 Ohms Resistor		B-33708B	Escutcheon
45	-21435	300,000 Ohms Resistor		W-34307	Escutcheon Lens
46	-21435	300,000 Ohms Resistor		W-33985	Escutcheon Gasket
47	-21435	300,000 Ohms Resistor		W-34680	Band Change Plate
48	-23403	150,000 Ohms Resistor		W-34681	Volume Control Plate

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga
6K7	R-F Amplifier	6.3	221	—	98	4	0	4	—
6A8	Modulator	6.3	221	—	138	—	0	4.5	4.5
6C5	Oscillator	6.3	140	—	—	—	—	0	—
6K7	I-F Amplifier	6.3	260	—	138	5	0	5	—
6R7	Detector & 1st A-F Amplifier	6.3	130	—	—	—	0	6.5	—
6C5	2nd A-F Amplifier	6.3	150	—	—	—	0	6.5	—
6N6	(2) Output	6.3	278	285	—	—	0	3.2	—
5Z4	Rectifier	4.5	357	—	—	—	—	—	—

\* Phantom Conductor Tube (W41187) Varies with power output.

**I. Tuning I-F Amplifier to 450 Kilocycles.**

- (a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic—to P2 of the other 6N6 Output tube.
- (b) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.
- (c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the Multivox control knob to the Auditorium Position (Third position in the clockwise direction).
- (d) Set the signal generator to 450 kilocycles.
- (e) Close the middle trimmer condenser on the 2nd. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (Do not force the adjustment screw).
- (f) Adjust the top trimmer and then the bottom trimmer (Sec. & Pri) of the 2nd. I-F transformer for maximum output.
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Modulator tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

- (i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum output.
- (j) Transfer the output lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.
- (k) Adjust the middle trimmer of the 2nd. I-F transformer by opening until maximum output is obtained. **DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.**
- (l) Adjust the middle trimmer of the 1st. I-F transformer by closing until maximum output is obtained. **DO NOT READJUST TOP AND BOTTOM TRIMMERS.**

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

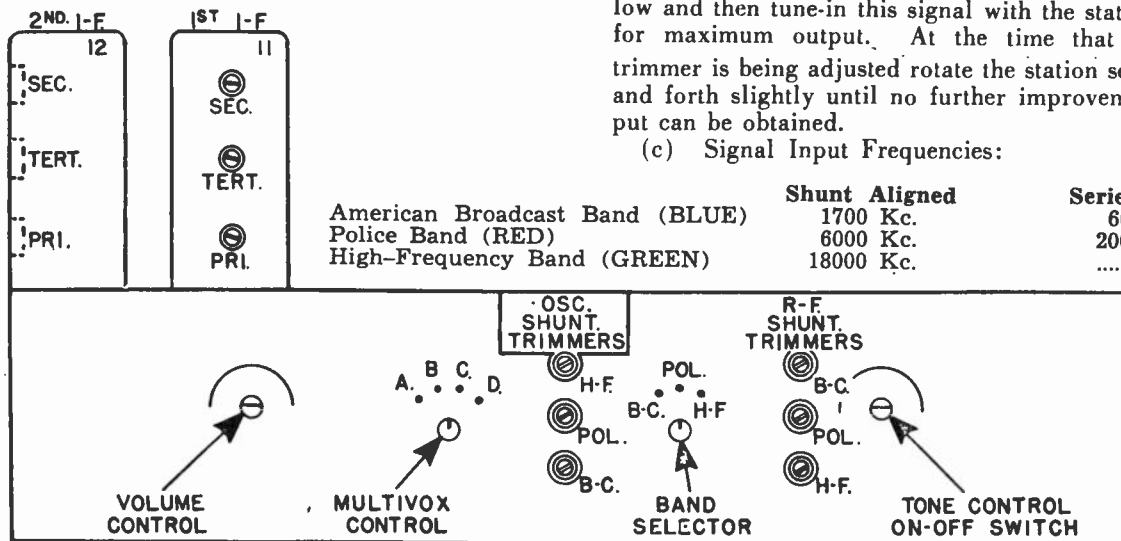
When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

(b) To align the series trimmers, 32Y and 32Z Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

(c) Signal Input Frequencies:

	Shunt Aligned	Series Aligned
American Broadcast Band (BLUE)	1700 Kc.	600 Kc.
Police Band (RED)	6000 Kc.	2000 Kc.
High-Frequency Band (GREEN)	18000 Kc.	.....



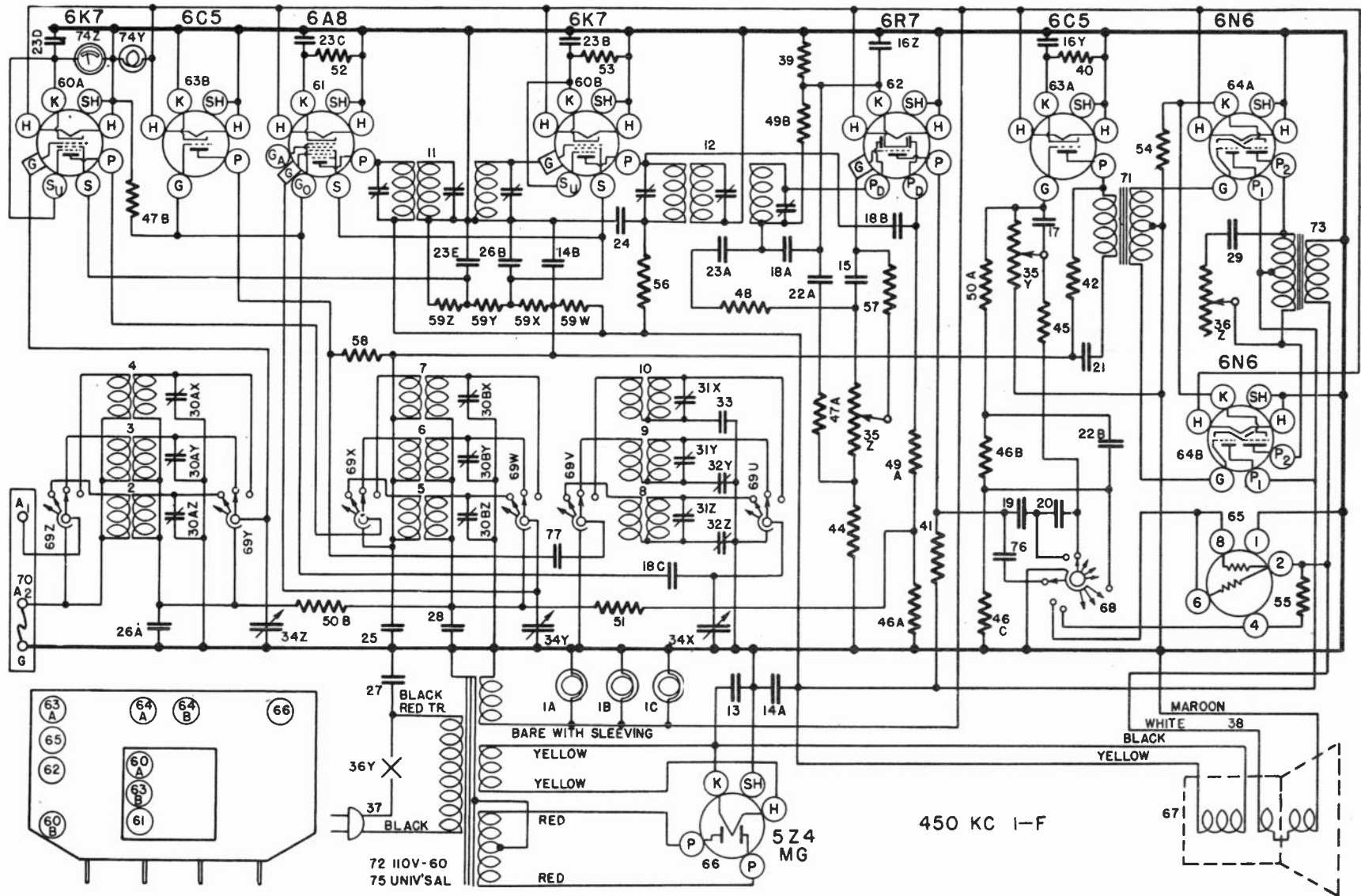


FIG. 1—WIRING DIAGRAM—MODEL 1016

MODEL 1016

Item No.	Part No.	Description	Item No.	Part No.	Description
1AFC	W -37922	Dial Light	37	R -33906A	Power Cord & Plug
2	G3 -3795	Dial Light Socket	38	G3 -37918	Speaker Cable
3	G95 -32000	Ant. Coil, B. C. B.	39	-31093	Resistor, 2,700 Ohm 1/4 W.
4	G113 -32000	Ant. Coil, H. F. B.	40	W -21452	Resistor, 1,100 Ohm 1/2 W. Flex.
5	G68 -32001	R. F. Coil, B. C. B.	41	-37768	Resistor, 65,000 Ohm 1/2 W.
6	G80 -32001	R. F. Coil, Pol. B.	42	-5370A	Resistor, 20,000 Ohm 1 W.
7	G79 -32001	R. F. Coil, H. F. B.	43	None	
8	G101 -32002	Osc. Coil, B. C. B.	44	-21454	Resistor, 1 Megohm 1/4 W.
9	G102 -32002	Osc. Coil, Pol. B.	45	-21455	Resistor, 300,000 Ohm 1/4 W.
10	G103 -32002	Osc. Coil, H. F. B.	46A	-23785	Resistor, 500,000 Ohm 1/4 W.
11	G90 -32001	1st I. F. Assembly	46B	-23785	Resistor, 500,000 Ohm 1/4 W.
12	G91 -32001	2nd I. F. Assembly	47A	-23785	Resistor, 500,000 Ohm 1/4 W.
13	W -36055	Condenser 35 Mfd. 400 V. Electrolytic	47B	-21453	Resistor, 40,000 Ohm 1/4 W.
14A	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	48	-23403	Resistor, 150,000 Ohm 1/4 W.
14B	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	49A	-33344	Resistor, 400,000 Ohm 1/4 W.
15	G8 -34002	Condenser, .0001 Mfd. (Molded)	49B	-33344	Resistor, 400,000 Ohm 1/4 W.
16Z	W -37778	Condenser, 12 Mfd. 25 V. Electrolytic	50A	-35600	Resistor, 100,000 Ohm 1/4 W.
17	G6 -34002	Condenser, .00025 Mfd. (Molded)	50B	-35600	Resistor, 100,000 Ohm 1/4 W.
18A	G2 -34002	Condenser, .0001 Mfd. (Molded)	51	W -28589	Resistor, 1.5 Megohm 1/4 W.
18B	G2 -34002	Condenser, .0001 Mfd. (Molded)	51	W -28105	Resistor, 500 Ohm 1/2 W. Flex.
18C	G2 -34002	Condenser, .0001 Mfd. (Molded)	51	W -23012A	Resistor, 40 Ohm 1/2 W. Flex.
19	W -32780B	Condenser, .05 Mfd. 400 V.	55	W -41193	Resistor, 1 Ohm 2 1/2 W. Flex.
20	C3 -34002	Condenser, .0005 Mfd. (Molded)	55	W -23013	Resistor, 2,000 Ohm 1/4 W. Flex.
21	W -37732	Condenser, .1 Mfd. 160 V.	57	W -21273A	Resistor, 60,000 Ohm 1/4 W.
22A	W -31219	Condenser, .023 Mfd. 200 V.	58	W -41225	Resistor, 15,000 Ohm 1 W. Wire Wound
22B	W -31219	Condenser, .023 Mfd. 200 V.	59	W -41225	4 Section Candohm
23A	W -36541	Condenser, .02 Mfd. 160 V.	60A	G151-36400	Socket Type 6K7
23E	W -30188	Condenser, .02 Mfd. 400 V.	60B	G151-36400	Socket Type 6K7
24	W -32378	Condenser, .05 Mfd. 400 V.	61	G156-36400	Socket Type 6A8
25	W -35936	Condenser, .05 Mfd. 200 V.	62	G164-36400	Socket Type 6R7
26A	W -35936	Condenser, .05 Mfd. 200 V.	63	G152-36400	Socket Type 6C5
26B	W -35936	Condenser, .05 Mfd. 200 V.	63B	G152-36400	Socket Type 6C5
27	W -30805	Condenser, .01 Mfd. 400 V.	64	G165-36400	Socket Type 6N6
28	W -32380	Condenser, .05 Mfd. 200 V.	64B	G165-36400	Socket Type 6N6
29	W -32615	Condenser, .05 Mfd. 400 V.	65	G167-36400	Socket For W41187
30	W -37891	3 Section Shunt Trimmer Assembly	66	G154-36400	Socket Type 524
31	W -35851	3 Section Shunt Trimmer Assembly	67	W -733CJ4	Speaker
32Z	W -37874	B. C. Osc. Series Trimmer Cond.	68	-41446	Switch Multivox Control
33	G18 -34000	H. F. Fixed Series Condenser	70	G27 -26718E	Switch Band Selector
34	G47 -33002	3 Section Var. Tuning Cond.	71	G1 -37995	Art. & Grd. Terminal Board Assembly
	MG51 -41022	Dial Drive Assembly Complete	72	G43 -25669	Audio Input Transformer
	W -41154	Drive Unit (only)	73	G48 -24628	Power Supply Transformer (110V.60Cy.)
	C -41149	Dial Glass	74	W -41259	Audio Output Transformer
	W -41137	Dial Mask	74	W -41259	Tuning Meter
	W -40804	Dial Glass Cushion	75	-37685A	Tuning Meter Bulb
	W -41144	Long Hand	76	W -41445	Universal Power Transformer
	W -41146	Short Hand	77	W -34647	Condenser, .036 Mfd. 400 V.
	W -40486	Hand Mtg. Screw		W -34647	Condenser, .005 Mfd. 400 V.
	W -40537	Coupling Unit		C -41219	Escutcheon
	W -41157	Belt (Drive)		B -41233	Escutcheon Retaining Spring
	W -40538	Indicator Cable		B -41232	Dial Lens
35Z	W -41417	Volume Control 1st A. F. 3 Meg.		W -41234	Lens Retaining Spring
35Y	W -37966	Volume Control 2nd A. F. 1 Meg.		W -40365	Escutcheon Felt
36Z		Tone Control		W -37339	Knob (3 required)
36Y		A. C. Switch		W -40192B	Knob (2 required)

Escutcheon Ret. Spring  
 Dial Lens (Escutcheon Glass)  
 Lens Retaining Spring  
 Escutcheon Felt  
 Knob (3 required)  
 Knob (2 required)

B B B B W W W W

MODEL - 1026 ONLY

67

Escutcheon Ret. Spring  
 Dial Lens (Escutcheon Glass)  
 Lens Retaining Spring  
 Escutcheon Felt  
 Knob (3 required)  
 Knob (2 required)

W -37874A  
 W -37898  
 W -37897  
 W -40265  
 W -37585  
 W -40192B

Escutcheon Ret. Spring  
 Dial Lens (Escutcheon Glass)  
 Lens Retaining Spring  
 Escutcheon Felt  
 Knob (3 required)  
 Knob (2 required)

W -40193  
 W -40701  
 W -40702

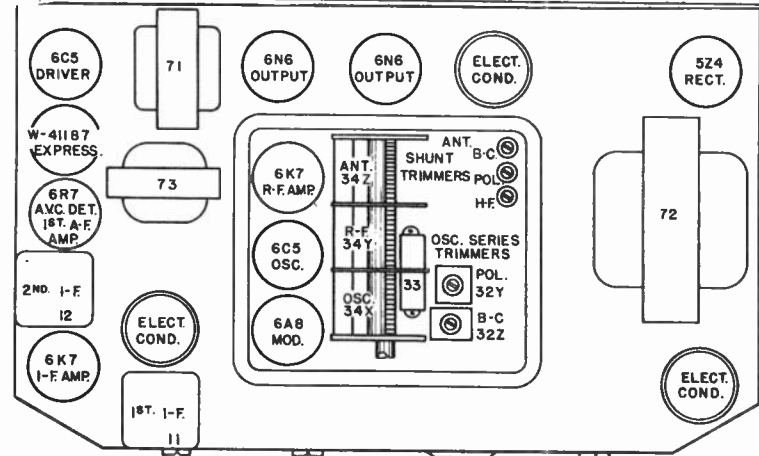


Fig. 2. Top View 1016

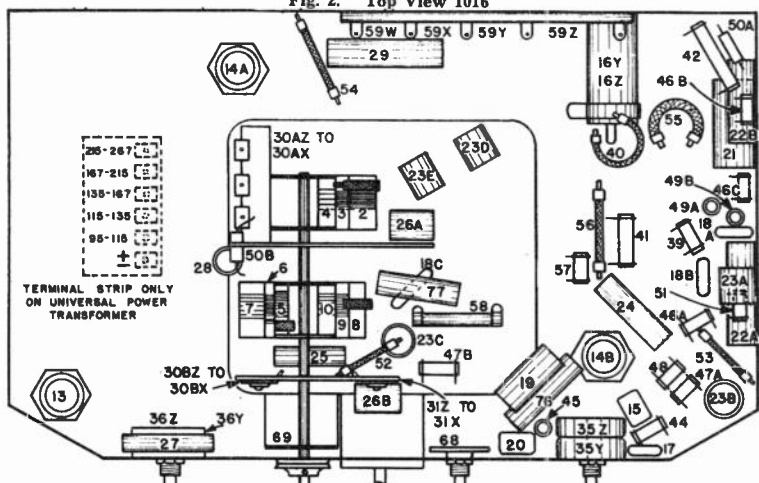


Fig. 3. Bottom View 1016

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 85 watts at 117.5 volts.  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

Tuning I-F Amplifier To 455 Kilocycles

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Set the band selector switch on the Broadcast Band.
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.
- (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

Aligning R. F. Amplifier

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for

series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (d) below.

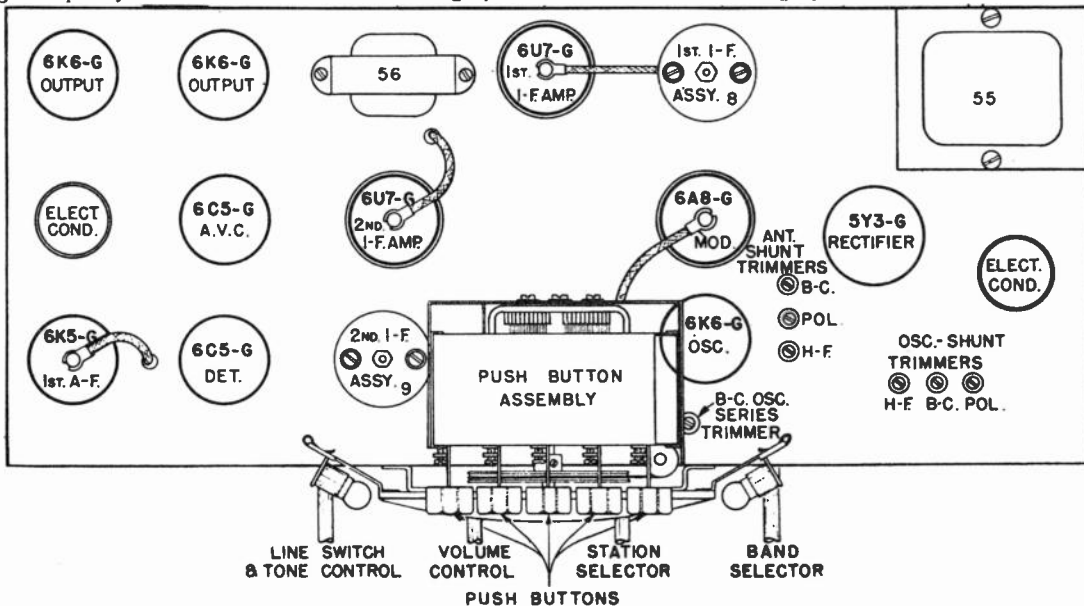
- (a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (d) is heard (it is not necessary that the receiver tune through this signal).

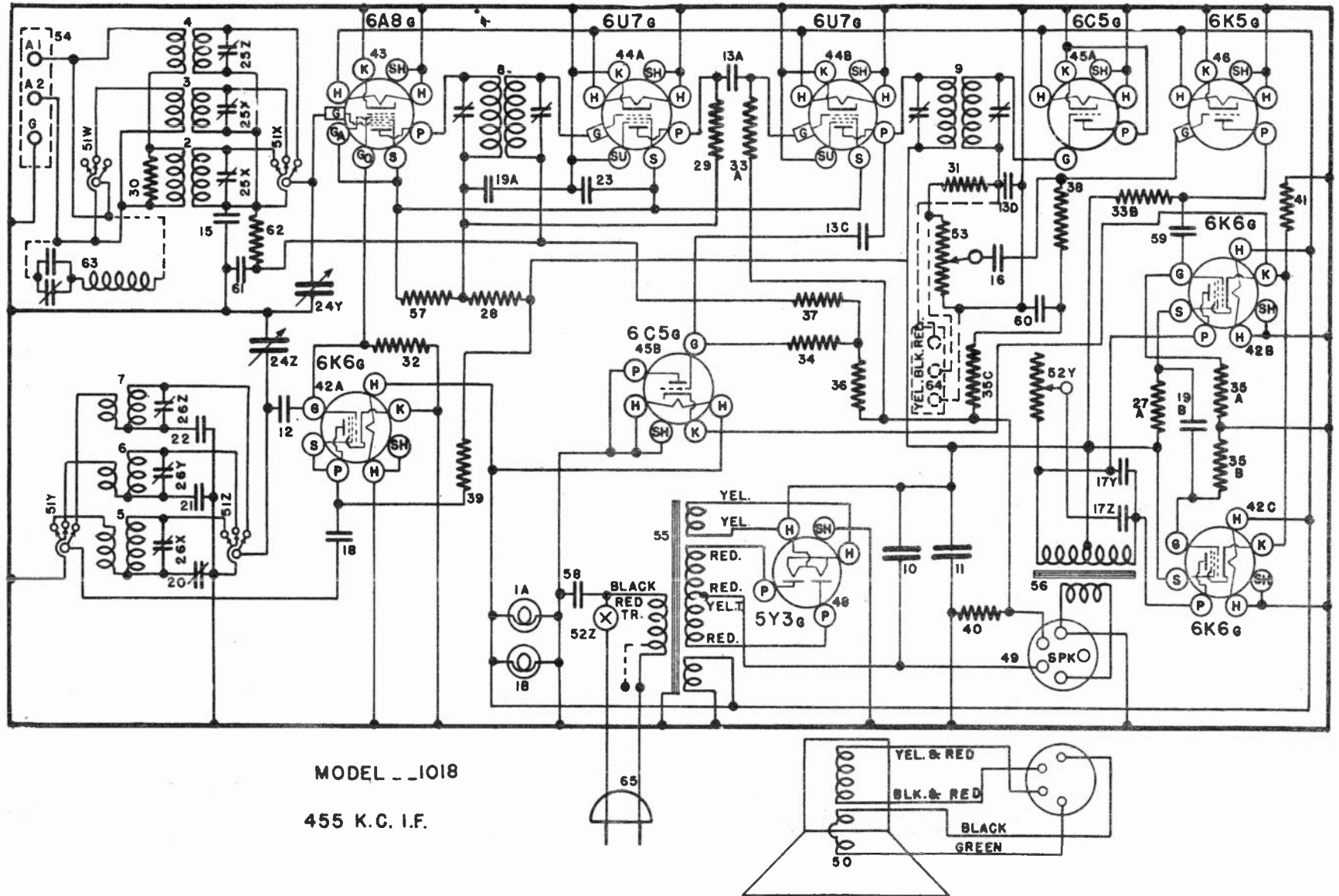
- (b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (d) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

- (c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (d) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and a 6000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

(D) SIGNAL INPUT FREQUENCIES

American Broadcast Band	Min. Cap. Signal	Shunt Align.	Series Align.
Police & Amateur Band	1725 Kilocycles	1400 Kilocycles	600 Kilocycles
High Frequency Band	6400 "	6000 "	
	20 Megacycles	18 Megacycles	





MODEL 1018

455 K.C. I.F.

MODEL 1018

FIG. 1—WIRING DIAGRAM—MODEL 1018



## MODEL 1018

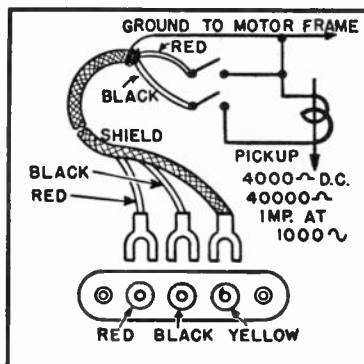
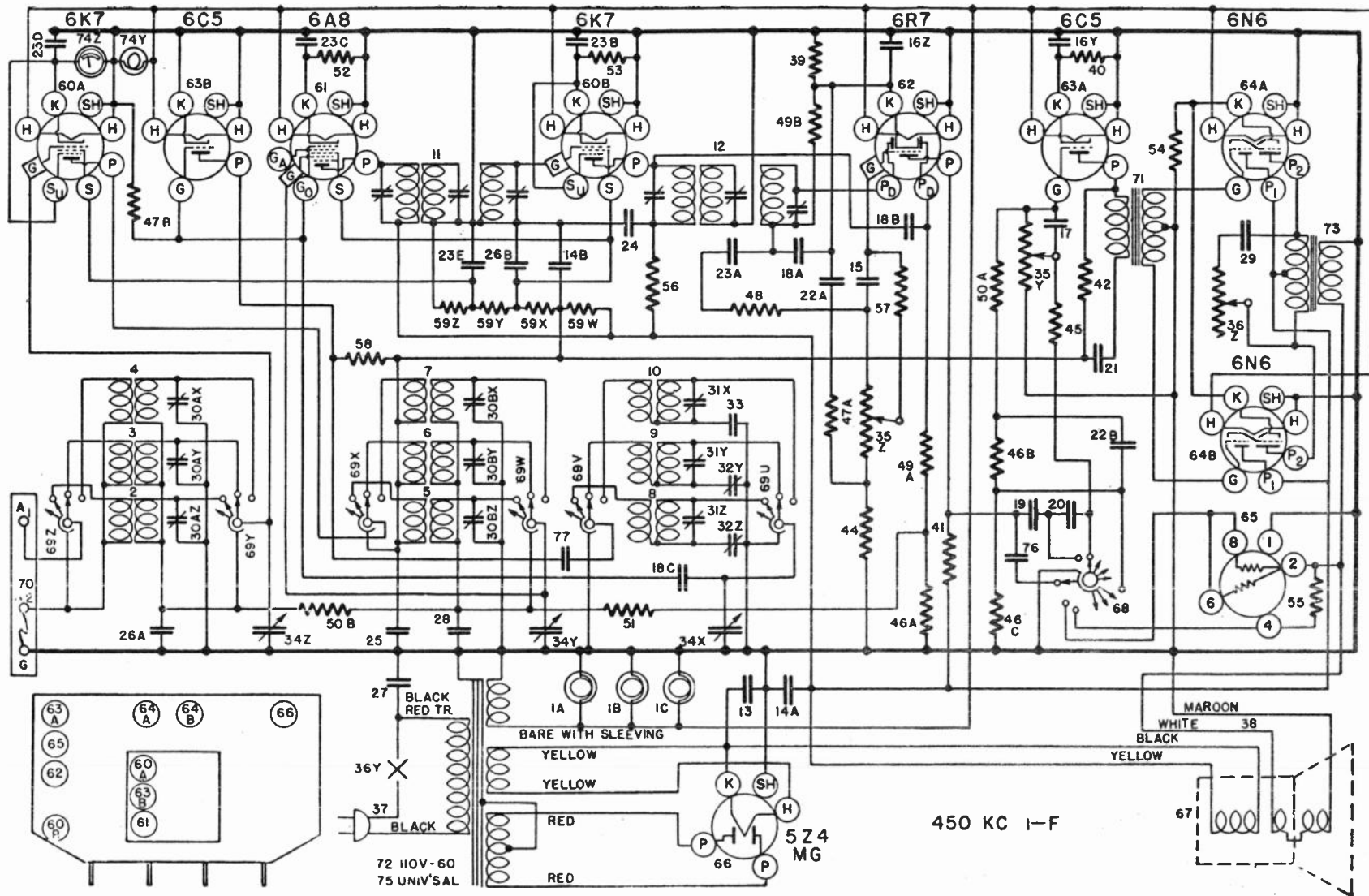


Fig. 4 Phonograph Pickup

### PARTS LIST — MODEL 1018

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —43567	Dial Light Bulb	38	—26577	Resistor, 3 Megohm ¼W. Carb.
	G6 —45398	Dial Light Socket Assy.	39	—44008	Resistor, 10,000 Ohm 2W. Carb.
2	G169—32000	Ant. Coil—535—1850 Kc.	40	W —37631	Resistor, 32 Ohm ½W. Flex.
3	G168—32000	Ant. Coil—1850—6600 Kc.	41	W —22873	Resistor, 220 Ohm 2½W. Flex.
4	G170—32000	Ant. Coil—6.2—22 Mc.	42ABC	G172—36400	Socket, Type 6K6
5	G169—32002	Osc. Coil—535—1850 Kc.	43	G156—36400	Socket, Type 6A8
6	G168—32002	Osc. Coil—1850—6600 Kc.	44AB	G171—36400	Socket, Type 6U7
7	G170—32002	Osc. Coil—6.2—22 Mc.	45AB	G152—36400	Socket, Type 6C5
8	G162—32004	1st I-F Assembly—455 Kc.	46	G9 —43900	Socket, Type 6K5
9	G155—32004	2nd I-F Assembly—455 Kc.	47	NONE	
10	W —44054	Condenser, 30 Mf. 350 V.	48	G173—36400	Socket, Type 5Y3
11	W —36057B	Condenser, 40 Mf. 300 V.	49	G103—28807	Socket for Speaker
12	G13 —34002	Condenser, .000035 Mf. Molded	W —27981A	W —27981A	Tube Shield Base
13ACD	G2 —34002	Condenser, .0001 Mf. Molded	W —40911	W —40911	Tube Shield
14		NONE	50	566BP18 "M"	Speaker, Spec. No. 1-D-1052
15	W —35936	Condenser, .05 Mf. 200 V.		—44275	V. C. and Cone Assy. for 566BP18 "M" Spkr.
16	W —41461	Condenser, .0014 Mf. 200 V.		—44276	Field Coil Assy. for 566BP18 "M" Spkr.
17Z	W —31052	Condenser, .05 Mf. 400 V.	51	—44049A	Band Selector Switch
17Y	W —35139	Condenser, .004 Mf. 400 V.	52Z	—44024B	Line Switch
18	W —35139	Condenser, .004 Mf. 400 V.	52Y	—44024B	Tone Control (100,000 Ohm)
19AB	W —23615	Condenser, .05 Mf. 400 V.	53	—44081	Volume Control—1 Meg.
20	—40769	B-C Osc. Series Trimmer (520 Mmf.)	54	G27 —26719	Ant. and Gnd. Term. Assy.
21	G23 —34000	Pol. Osc. Series Cond. (1560 Mmf.)	55	—44101	Power Trans., 110 V. 60 Cy.
22	G20 —34000	H-F Osc. Series Cond. (4910 Mmf.)		—44104	Power Trans., 110 V. 50 Cy.
23	W —22688	Condenser, .1 Mf. 400 V.		—44105	Power Trans., 220 V. 50 Cy.
24	G51 —33001	2 Sect. Gang Cond.		—44102	Power Trans., 110 V. 25 Cy.
	—45593A	Dial Face (Glass)		—44103	Power Trans., 220 V. 25 Cy.
	W —44262	Ring—Dial Support (Cardboard)	56	G77 —24628	Output Transformer
	W —44263	Arc—Dial Support (Cardboard)	57	—4921C	Resistor, 10,000 Ohm 1W.
	W —45587A	Mask—Dial (Metal)	58	W —30805	Condenser, .01 Mf. 400 V.
	C —44110C	Dial Mtg. Bracket	59	W —30488	Condenser, .02 Mf. 400 V.
	W —44127	Pointer (Dial Hand)	60	W —34712	Condenser, .25 Mf. 160 V.
	—2045	Shake Proof Washer (Pointer)	61	W —28621	Condenser, .02 Mf. 200 V.
	W —40486	Screw—Pointer Mtg.	62	—35600	Resistor, 100,000 Ohm ¼W.
	W —45630	Shaft—Pointer	63	G164—32004	Wave Trap
	W —50325A	Retaining Ring (Pointer Shaft)			<b>PUSH BUTTON PARTS</b>
	G10 —43564	Pulley and Hub Assy. (Pointer Shaft)	G1	—45683	Push Button Unit Assy.
	G11 —43564	Pulley, Gear and Hub Assy.	G32	—45683	Key and Toggle Assy.
	W —45632	Gear—Take-up Spring	W	—50542A	Key Clip (Lock Clamp)
	W —44500A	Bearing Plate (Drive Shaft)	W	—50607	Spring (Key Return)
	W —43542B	Bracket—Drive Shaft	W	—45717	Adj. Screw (Lock Clamp)
	W —45716	Drive Shaft	W	—50547	Key Plate (Rear Guide)
	W —43549	Retaining Ring (Drive Shaft)	W	—45646A	Clip (Front Guide) 1 Req.
	W —44701C	Rubber Grommet	G31	—45683	Rocker Plate Assy.
	G16 —41582	Drive Cord (38 Inches)	W	—50561	⅛"—6-40 Screw (R. Plate Bearing)
	W —50573A	Tension Spring (D. Cord)	W	—45711	Felt Strip (Unit Front)
	MG34—45584	Bracket and Pulley Assy. (Cond. Mtg.)	W	—45589A	Push Button
	W —46290	Cord Clamp	W	—45763	Celluloid Covers
	W —35951A	3 Sect. Ant. Shunt Trimmer Assy.	W	—43882	Screw P.K. (Adj. Clip Mtg.)
25		H-F Osc. Shunt Trimmer	W	—50588	Clip (Front Guide) 4 Req.
26Z	W —45713	Pol. Osc. Shunt Trimmer	W	—50841	Station Call List
26Y		B-C Osc. Shunt Trimmer (Temp. Compensated)		—45605	Instructions (60 Cycle)
26X			W	—43553	Rubber Mtg. Foot
27A	—44009	Resistor, 3,000 Ohm ¼W. Carb.	W	—44380B	Knob (2)
28	W —23013	Resistor, 2,000 Ohm 1¼W. Flex.	W	—44426A	Knob (2) (Pointer)
29	—44165	Resistor, 5,000 Ohm ½W. Carb.	W	—43552	Spkr. Plug Clamp
30	—22196	Resistor, 20,000 Ohm ¼W. Carb.	B	—44207B	Escutcheon—Dial
31	—36320	Resistor, 120,000 Ohm ¼W. Carb.		—7WB	Cabinet
32	—21237A	Resistor, 60,000 Ohm ¼W. Carb.	B	—45626C	Push Button Escutcheon
33AB	—21875	Resistor, 100,000 Ohm ¼W. Carb.	W	—45623A	P. B. Support Brkt.
34	—34020	Resistor, 250,000 Ohm ¼W. Carb.	W	—45580	Grommet (P. B. Sup. Brkt.)
35ABC	—23785	Resistor, 500,000 Ohm ¼W. Carb.		—45620	Headed Bushing (P. B. Sup. Brkt.)
36	—37590	Resistor, 750,000 Ohm ¼W. Carb.	W	—23880A	Thumb Screw
37	—21454	Resistor, 1 Megohm ¼W. Carb.			

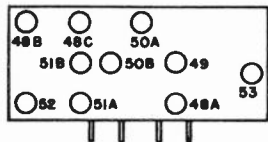
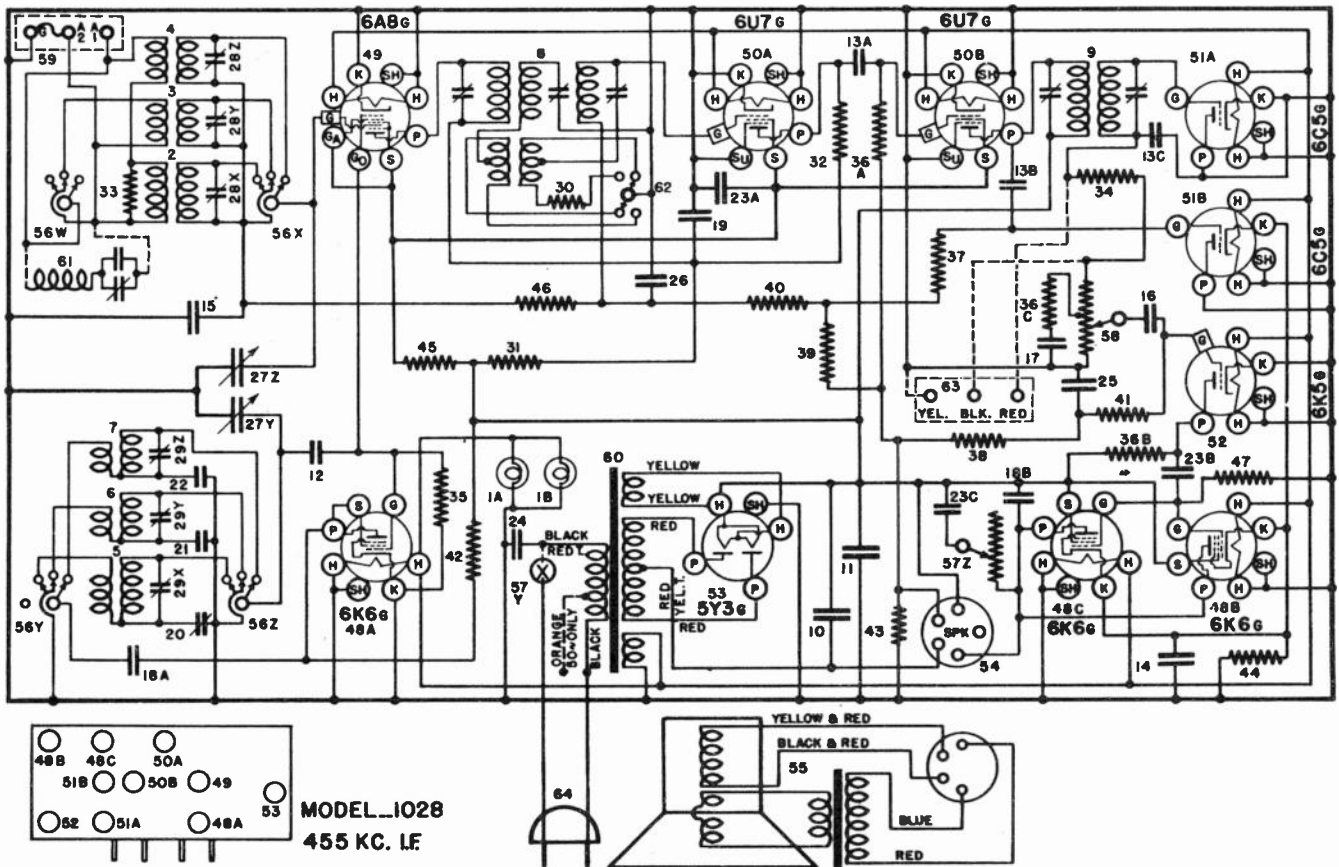
For alignment procedure and parts list, refer to pages 461-463.



MODEL 1026

FIG. 1—WIRING DIAGRAM—MODEL 1026

# MODEL 1028



MODEL 1028  
455 KC. I.F.

- |     |            |                          |
|-----|------------|--------------------------|
| 1A  | W-43567    | Bulb Dial Light 6-8V     |
| 1B  |            | Bulb Dial Light 6-8V     |
| 2   | G169-32000 | Coil B.C.Ant.            |
| 3   | G168-32000 | Coil Pol.Ant.            |
| 4   | G170-32000 | Coil H.F.Ant.            |
| 5   | G169-32002 | Coil B.C.Osc.            |
| 6   | G168-32002 | Coil Pol.Osc.            |
| 7   | G170-32002 | Coil H.F.Osc.            |
| 8   | G161-32004 | 1st I.F.Trans.           |
| 9   | G154-32004 | 2nd I.F.Trans.           |
| 10  | W-44054    | Cond.30 M.F.350 V.Elec.  |
| 11  | W-36057B   | Cond.40 M.F.300 V.Elec.  |
| 12  | G13-34002  | Cond.35 M.F. Mica        |
| 13A | G2-34002   | Cond.100 M.F. Mica       |
| 13B |            | Cond.100 M.F. Mica       |
| 13C |            | Cond.100 M.F. Mica       |
| 14  | W-44598    | Cond.50 M.F.25 V.Elec.   |
| 15  | W-35936    | Cond..05 M.F.200V.Paper  |
| 16  | W-41461    | Cond..0014M.F.200V. "    |
| 17  | W-28619    | Cond..006 M.F.200V.Paper |
| 18A | W-35139    | Cond..004 M.F.400V.Paper |
| 18B |            | Cond..004 M.F.400V.Paper |
| 19  | W-23615    | Cond..05 M.F.400V.Paper  |
| 20  | #40769     | Pad.Cond. 520 M.F.       |
| 21  | G23-34000  | Pad.Cond.1560 M.F.       |
| 22  | G20-34000  | Pad.Cond.4910 M.F.       |
| 23A | W-22688    | Cond..1M.F.400V.Paper    |
| 23B |            | Cond..1M.F.400V.Paper    |
| 23C |            | Cond..1M.F.400V.Paper    |
| 24  | W-30805    | Cond..01M.F.400V.Paper   |
| 25  | W-34712    | Cond..25 M.F.160V.Paper  |
| 26  | W-28621    | Cond..02 M.F.200V.Paper  |
| 27Z | G51-33001  | Var.Cond.Ant.Section     |
| 27Y |            | Var.Cond.Osc.Section     |
| 28Z | W-35951A   | Trim.Cond. H.F.Ant.      |
| 28Y |            | Trim.Cond. Pol.Ant.      |
| 28X |            | Trim.Cond. B.C.Ant.      |
| 29Z | W-45713    | Trim.Cond. H.F.Osc.      |
| 29Y |            | Trim.Cond. Pol.Osc.      |
| 29X |            | Trim.Cond. B.C.Osc.      |

- |     |         |                             |
|-----|---------|-----------------------------|
| 30  | #42401B | Resis.99 Ohm 1/2 W.Ins.     |
| 31  | W-23013 | Resis.2000 Ohm 1/4W.Flex.   |
| 32  | #44165  | Resis.5000 Ohm 1/2 W.Carb.  |
| 33  | #22196  | Resis.20 M Ohm 1/3 W.Carb.  |
| 34  | #35320  | Resis.120M Ohm 1/2 W.Ins.   |
| 35  | #21237A | Resis.60 M 1/3 W.Carb.      |
| 36A | #21875  | Resis.100M Ohm 1/3W.Carb.   |
| 36B |         | Resis.100M Ohm 1/3W.Carb.   |
| 36C |         | Resis.100M Ohm 1/3W.Carb.   |
| 37  | #34020  | Resis.290M Ohm 1/3W.Carb.   |
| 38  | #23785  | Resis.500M Ohm 1/3W.Carb.   |
| 39  | #37590  | Resis.750M Ohm 1/3W.Carb.   |
| 40  | #21454  | Resis.1 Meg.1/3W. Carb.     |
| 41  | #26577  | Resis.5 Meg.1/3W. Carb.     |
| 42  | #44008  | Resis.10 M Ohm 2 W.Carb.    |
| 43  | W-37631 | Resis.32 Ohm 1/2 W. Flex.   |
| 44  | W-22873 | Resis.220 Ohm 2 1/2 W.Flex. |
| 45  | #4921-C | Resis.10M Ohm 1 W.Carb.     |
| 46  | #35600  | Resis.100M Ohm 1/2 W.Ins.   |
| 47  | #34018  | Resis.200M Ohm 1/3W.Carb.   |

- |     |             |                           |
|-----|-------------|---------------------------|
| 48A | G172-36400B | Socket 6X5                |
| 48B |             | Socket 6X5                |
| 48C |             | Socket 6X5                |
| 49  | G156-36400  | Socket 6AB                |
| 50A | G171-36400  | Socket 607                |
| 50B |             | Socket 607                |
| 51A | G152-36400  | Socket 6C5                |
| 51B |             | Socket 6C5                |
| 52  | G199-36400  | Socket 6X5                |
| 53  | G173-36400  | Socket 5Y3                |
| 54  | G103-28807  | Socket Spkr.              |
| 55  | #44675      | Speaker 571-EP-18         |
| 56W | #44049A     | Band Chg.Switch.Ant.Fri.  |
| 56X |             | Band Chg.Switch.Ant.Sec.  |
| 56Y |             | Band Chg.Switch.Osc.Flate |
| 56Z |             | Band Chg.Switch.Osc.Grid  |
| 57Z | #44024B     | Tone Control 100 M Ohm    |
| 57Y |             | Switch,S.P.S.T.Power      |
| 58  | #44674      | Volume Cont. 1.Meg.       |
| 59  | G27-26719   | Term.Strip(A1-A2-G)       |
| 60  | #44511      | Power Trans.110V.60 Cy.   |
| 60  | #44731      | Power Trans.110V.50 Cy.   |
| 60  | #44732      | Power Trans.220V.50 Cy.   |
| 60  | #44729      | Power Trans.110V.25 Cy.   |
| 60  | #44730      | Power Trans.220V.25 Cy.   |
| 61  | G164-32004  | Wave Trap                 |
| 62  | #44796      | Switch I.F.Expanding      |
| 63  | G37-26719   | Phono.Term.Board          |
| 64  | B-33906A    | Cord & Plug (Power)       |

## MISCELLANEOUS

- |          |                           |
|----------|---------------------------|
| 78A      | Cabinet                   |
| W-44432  | Knob,T.Contr.             |
| W-44381A | Knob, Vol. Contr.         |
| W-45062  | Knob Loc-Dist.Sw.         |
| W-44386B | Knob(2)Tuning-Band Change |
| W-44377B | Knob, Station Sel.        |
| W-45614  | Bushing                   |
| W-45589  | Push Button (5)           |
| 45694    | Instructions              |

# MODEL 1055

		TUBE SOCKET VOLTAGE READINGS							
Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.2	250	103	6	0	6	—	—
6A8	Modulator	6.2	250	103	—	0	6	-1 to -30	107
6C5	Oscillator	6.2	75	—	—	—	0	—	—
6K7	I-F Amp.	6.2	250	103	3	0	3	—	—
6H6	Detector & AVC	6.2	—	—	—	—	0	—	—
6C5	1st. A-F Amp.	6.2	70	—	—	0	3	—	—
6F6	2nd. A-F Amp.	6.2	218	218	—	0	18	—	—
6F6	Output	6.2	355	245	—	0	18	—	—
6F6	Output	6.2	355	245	—	0	18	—	—
5Z4	Rectifier	4.9	365	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

Power Consumption Approximately 123 Watts.

## 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the right.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle (tert.) trimmer condenser on the 1st I-F transformer. (Fig. 2.)

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle (tert.) trimmer on the 1st. I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

## 2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather Band and Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc," "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no improvement in output can be obtained.

After the "series" alignment of any band has been completed it will be necessary to repeat the "shunt" alignment of that band.

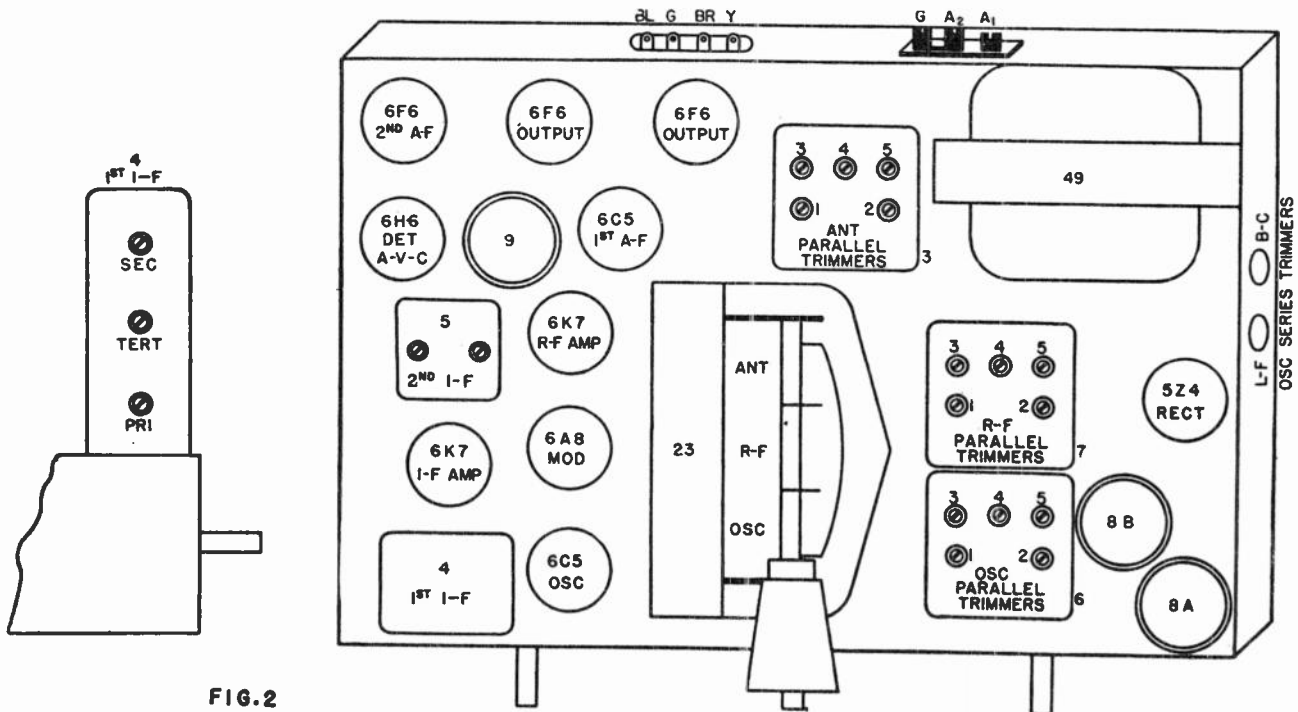
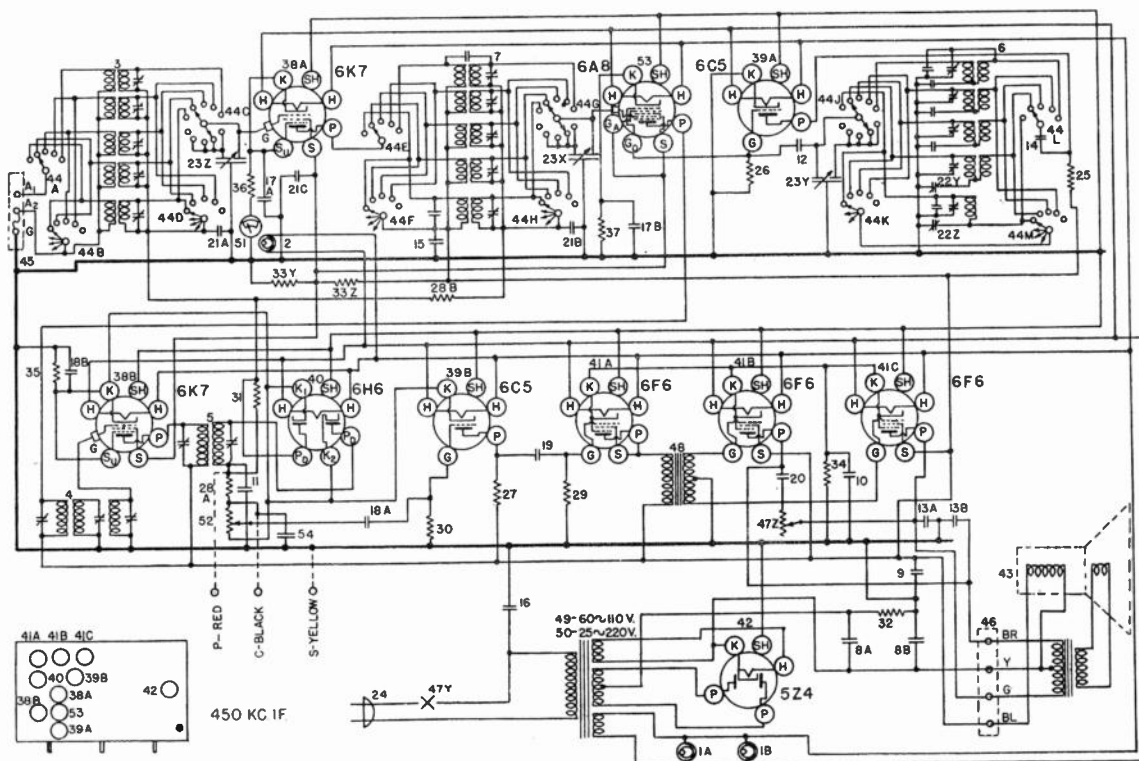


FIG. 2

MODEL 1055

(b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police & Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	36504	Dial Light Socket Assm.	23 Z	G37 - 33002	Var. Tuning Condenser Gang.
1B	36504	Dial Light Socket Assm.	23 Y		
2	36557	Tuning Meter Bulb.	23 X		
3	G63 - 32000	Ant. Coil Assm. Complete		-37376	Dial Drive Assembly.
	G64 - 32000	Ant. Coil only 150-400 Kc. (W. B.)		-37375A	Dial Face only.
	G68 - 32000	Ant. Coil only 540-1500 Kc. (B. B.)		-37551	Dial Hand.
	G65 - 32000	Ant. Coil only 1500-4000 Kc. (P. B.)		-37554	Second Hand.
	G67 - 32000	Ant. Coil only 4-10 Mc. (S. W. B.)		-37484	Dial Hand Screw.
	G66 - 32000	Ant. Coil only 10-22 Mc. (S. W. B.)		-37543	Dial Hand Washer.
	MG26 - 36542	Coil Support Base.	24	B - 33906A	A. C. Cord & Plug.
	W - 36028	5 Section Trimmer Cond. Assm.	25	W - 36545	Resistor 30,000 Ohm.
	MG9 - 36168	Shield.	26	W - 22195	Resistor 20,000 Ohm.
4	G66 - 32004	1st I. F. Trans. Assm.	27	W - 23403	Resistor 150,000 Ohm.
	G67 - 32004	2nd I. F. Trans. Assm.	28A	W - 21455	Resistor 300,000 Ohm.
5	G54 - 32002	Osc. Coil Assm. Complete	28B	W - 21455	Resistor 300,000 Ohm.
6	G55 - 32002	Osc. Coil only 150-400 Kc.	29	W - 23785	Resistor 500,000 Ohm.
	G56 - 32002	Osc. Coil only 540-1500 Kc.	30	W - 35927	Resistor 2 Megohm.
	G57 - 32002	Osc. Coil only 1500-4000 Kc.	31	W - 36888	Resistor 3 Megohm.
	G59 - 32002	Osc. Coil only 4-10 Mc.	32	W - 36549	Resistor 200 Ohm 6 Watt.
	G58 - 32002	Osc. Coil only 10-22 Mc.	33Z	W - 32301	Resistor 10,000 Ohm.
	MG26 - 36542	Coil Support Base.	33Y		15,000 Ohm.
	W - 36028	5 Section Trimmer Cond. Assm.	34	W - 22873	Resistor 220 Ohm (Flex.)
	MG9 - 36168	Shield.	35	W - 25837	Resistor 275 Ohm (Flex.)
7	G7 - 34007	Condenser 1750 mmf.	36	W - 21964	Resistor 165 Ohm (Flex.)
	G8 - 34007	Condenser 4350 mmf. (2)	37	W - 22514	Resistor 750 Ohm (Flex.)
	G6 - 34002	Condenser 25 mmf. (2)	38A	G151 - 36400	Socket, 6K7.
	MG9 - 36168	Shield.	38B	G151 - 36400	Socket, 6K7.
	G39 - 32001	R. F. Coil Assm. Complete	39A	G152 - 36400	Socket, 6C5.
	G40 - 32001	R. F. Coil only 150-400 Kc.	39B	G152 - 36400	Socket, 6C5.
	G44 - 32001	R. F. Coil only 540-1500 Kc.	40	G155 - 36400	Socket, 6H6.
	G41 - 32001	R. F. Coil only 1500-4000 Kc.	41A	G153 - 36400	Socket, 6F6.
	G43 - 32001	R. F. Coil only 4-10 Mc.	41B	G153 - 36400	Socket, 6F6.
	G42 - 32001	R. F. Coil only 10-22 Mc.	41C	G153 - 36400	Socket, 6F6.
	MG27 - 36542	Coil Support Base.	42	G154 - 36400	Socket, 5Z4.
	W - 36028	5 Section Trimmer Cond. Assm.	43	427CL - 22	Speaker, Table Model.
	MG9 - 36168	Shield.	44	627CL - 27	Speaker, Console.
8A	W - 36055	Condenser 35 mfd. 400 Volts.	45	G27 - 36547A	Band Change Switch.
8B	W - 36055	Condenser 35 mfd. 400 V.	46	W - 28719	Ant.-Grnd. Terminal.
9	W - 36057	Condenser 40 mfd. 300 V.		G5 - 31128	Speaker Terminal.
10	W - 36548	Condenser 25 mfd. 25 V.		W - 34627	Terminal Board Insulator.
11	G2 - 34002	Condenser 0.0001 mfd. 200 V.		W - 34628	Terminal Board Cover.
12	G1 - 34002	Condenser 0.00025 mfd. 200 V.	47Z		Tone Control.
13A	W - 35758	Condenser 0.008 mfd. 400 V.	47Y		On-Off Switch.
13B	W - 35758	Condenser 0.008 mfd. 400 V.		G22 - 24628	A. F. Transformer.
14	W - 35647	Condenser 0.006 mfd. 400 V.		G42 - 25669	Power Transformer 60 Cy. 110 V.
15	W - 32378	Condenser 0.01 mfd. 400 V.	48	B - 35007B	Universal Power Transformer.
16	W - 30805	Condenser 0.01 mfd. 400 V.	49	W - 36500	Tuning Meter.
17A	W - 36541	Condenser 0.02 mfd. 180 V.	50	W - 36501	Tuning Meter Bracket.
17B	W - 36541	Condenser 0.02 mfd. 180 V.	51	W - 22082	Volume Control.
18A	W - 28621	Condenser 0.02 mfd. 200 V.	52	G156 - 36400	Socket, 6A8.
18B	W - 28621	Condenser 0.02 mfd. 200 V.	53	G6 - 34002	Condenser 0.000025 mfd.
19	W - 32780	Condenser 0.05 mfd. 400 V.	54	B - 36515	Escutcheon.
20	W - 23615	Condenser 0.05 mfd. 400 V.		W - 36564	Escutcheon indicator
21A	W - 35936	Condenser 0.05 mfd. 200 V.		W - 36311	Band Change Escutcheon.
21B	W - 35936	Condenser 0.05 mfd. 200 V.		W - 36519	Knob, Tuning.
21C	W - 35936	Condenser 0.05 mfd. 200 V.		W - 36520A	Knob, Vernier.
22Z	G27 - 33006	Condenser-trimmer.		W - 36518	Knob (Tail) Band Change.
22Y				W - 36521	Knob (2)

# CHASSIS MODEL 1117

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—
6G5	Tuning Indicator	6.3	Variable	—	—	—	—	—

Power consumption approximately 90 watts at 117.5 volts.  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

### Tuning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

### Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, pp (d) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (d) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (d) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (d) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

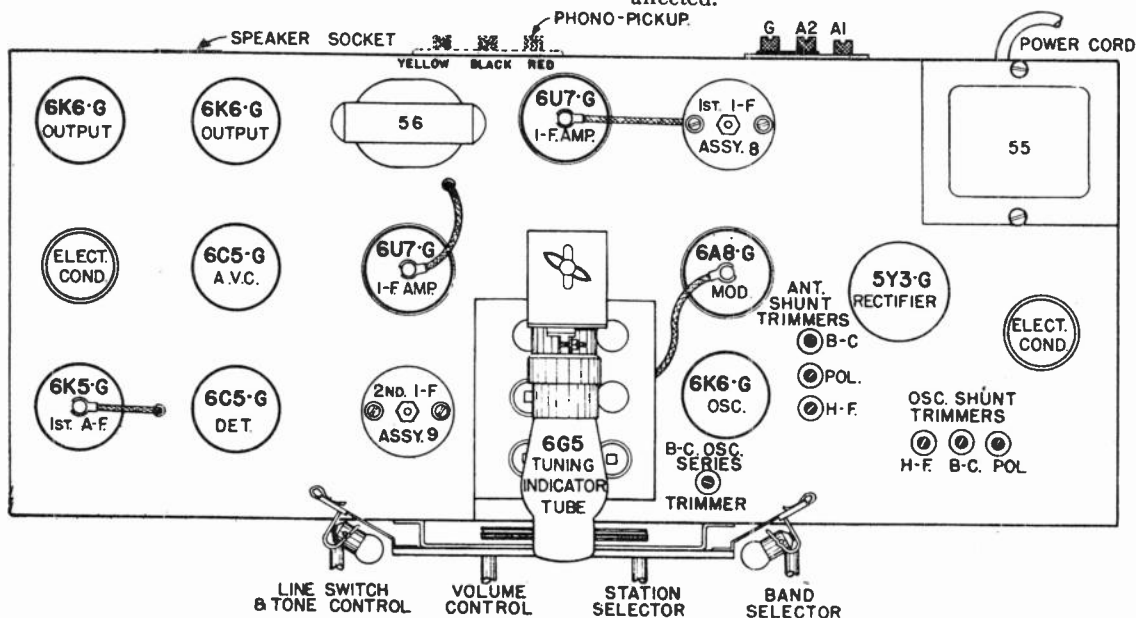


Fig. 2 Top View Model 1117

## CHASSIS MODEL 1117 (D) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
Police & Amateur Band  
High Frequency Band

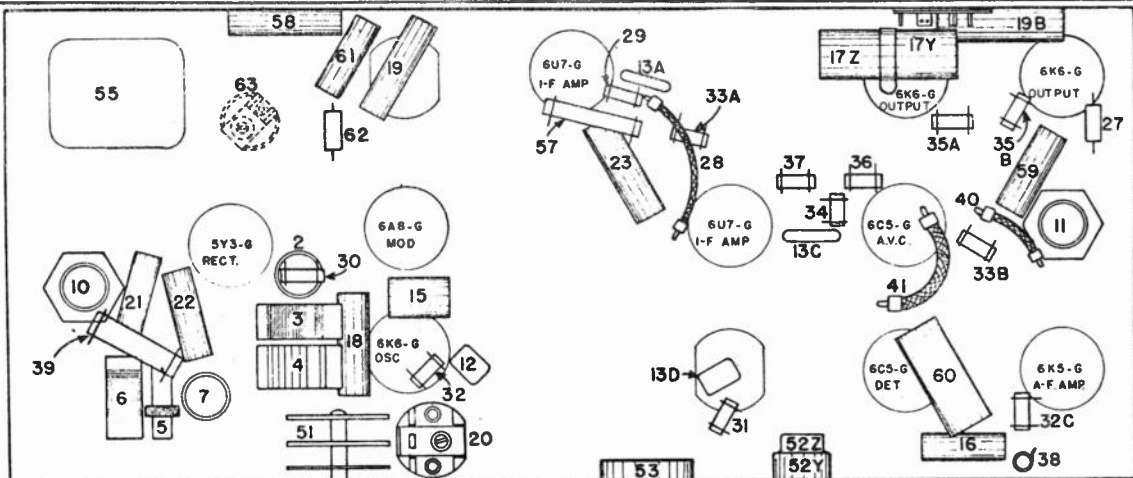
**Min. Cap. Signal**  
1850 Kilocycles  
6600 "  
22 Megacycles

**Shunt Align.**  
1700 Kilocycles  
6000 "  
18 Megacycles

**Series Align.**  
600 Kilocycles

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —43567	Dial Light Bulb	36	—37590	Resistor, 750,000 Ohm 1/4 W. Carb.
	G3 —44363	D:al Light Socket Assy.	37	—21454	Resistor, 1 Megohm 1/4 W. Carb.
2	G139—32000	Ant. Coil—535—1850 Kc.	38	—26577	Resistor, 3 Megohm 1/4 W. Carb.
3	G138—32000	Ant. Coil—1850—6600 Kc.	39	—44008	Resistor, 10,000 Ohm 2W. Carb.
4	G141—32000	Ant. Coil—6.2—22 Mc.	40	W —37631	Resistor, 32 Ohm 1/2 W. Flex.
5	G139—32002	Osc. Coil—535—1850 Kc.	41	W —22873	Resistor, 220 Ohm 1 1/2 W. Flex.
6	G138—32002	Osc. Coil—1850—6600 Kc.	42ABC	G172—36400	Socket, Type 6K6
7	G141—32002	Osc. Coil—6.2—22 Mc.	43	G156—36400	Socket, Type 6A8
8	G162—32004	1st I-F Assembly—455 Kc.	44AB	G171—36400	Socket, Type 6U7
9	G155—32004	2nd I-F Assembly—455 Kc.	45AB	G152—36400	Socket, Type 6C5
10	W —44054	Condenser, 30 Mf. 350 V.	46	G9 —43900	Socket, Type 6K5
11	W —36057B	Condenser, 40 Mf. 300 V.	47Z	} W —44121 {	Socket, Type 6G5
12	G13 —34002	Condenser, .000035 Mf. Molded	47Y		1 Meg. Resistor in Socket
13ACD	G2 —34002	Condenser, .0001 Mf. Molded	48	G173—36400	Socket, Type 5Y3
14		NONE	49	G103—28807	Socket for Speaker
15	W —35936	Condenser, .05 Mf. 200 V.		W —27981A	Tube Shield Base
16	W —41461	Condenser, .0014 Mf. 200 V.		W —40911	Tube Shield
17Z	} W —31052 {	Condenser, .05 Mf. 400 V.		MG17—44099	Bracket Assy. with 6G5 Socket
17Y		Condenser, .004 Mf. 400 V.		W —44137	Bracket for MG17-44099
18	W —35139	Condenser, .004 Mf. 400 V.		W —23880A	Thumb Screw
19AB	W —23615	Condenser, .05 Mf. 400 V.	50	566BP18 "M"	Speaker, Spec. No. 1-D-1052
20	—40769	B-C. Osc. Series Trimmer (520 Mmf.)		—44275	V. C. and Cone Assy. for 566BP18 "M" Spkr.
21	G23 —34000	Pol. Osc. Series Cond. (1560 Mmf.)		—44276	Field Coil Assy. for 566BP1 "M" Spkr.
22	G20 —34000	H-F. Osc. Series Cond. (4910 Mmf.)			Band Selector Switch
23	W —22688	Condenser, .1 Mf. 400 V.	51	—44049	Line Switch
24	G40 —33001	2 Section Var. Tuning Condenser	52Z	} —44024 {	Tone Control (100,000 Ohm)
	MG14—44099	Cond. Mounting Bracket	52Y		—44081
	D —44143B	Dial Face (Glass)	53	—44081	Ant. and Gnd. Term. Assy.
	W —44146A	Dial Mask	54	G27 —26719	Power Trans., 110 V. 60 Cy.
	C —44110B	Dial Support Brkt.	55	—44101	Power Trans., 110 V. 50 Cy.
	W —44127	Dial Hand (Pointer)		—44104	Power Trans., 220 V. 50 Cy.
	W —40486	Hand Mtg. Screw		—44105	Power Trans., 110 V. 25 Cy.
	W —44262	Dial Glass Support Ring		—44102	Power Trans., 220 V. 25 Cy.
	W —44263	Dial Glass Support Arc		—44103	Output Transformer
	—41582	Drive Cord - 20 Inches		G77 —24628	Resistor, 10,000 Ohm 1W.
	W —44134	Drive Shaft	56	—4921C	Condenser, .01 Mf. 400 V.
	W —43549	Shaft Retaining Ring	57	W —30805	Condenser, .02 Mf. 400 V.
	W —43542B	Shaft Bracket	58	W —30488	Condenser, .25 Mf. 160 V.
	W —44500	Shaft Bearing	59	W —34712	Condenser, .02 Mf. 200 V.
	G1 —43564	Drive Pulley Assy.	60	W —28621	Resistor, 100,000 Ohm 1/4 W.
25	W —35951	3 Section Shunt Trimmer Assy.	61	W —35600	Wave Trap
26	B —33906A	Power Cord and Plug	62	G164—32004	Rubber Mtg. Foot
27	—44009	Resistor, 3,000 Ohm 1/4 W. Carb.	63	W —43553	Knob (2)
28	W —23013	Resistor, 2,000 Ohm 1 1/2 W. Flex.		W —44380	Knob (2) (Pointer)
29	—44165	Resistor, 5,000 Ohm 1/2 W. Carb.		W —44426	Spkr. Plug Clamp
30	—22196	Resistor, 20,000 Ohm 1/4 W. Carb.		W —43552	Escutcheon—Dial
31	—36320	Resistor, 120,000 Ohm 1/4 W. Carb.		B —44207A	Escutcheon—Tun. Indic. Tube
32	—21237A	Resistor, 60,000 Ohm 1/4 W. Carb.		W —44208B	Cabinet
33AB	—21875	Resistor, 100,000 Ohm 1/4 W. Carb.		— 7W	
34	—34020	Resistor, 250,000 Ohm 1/4 W. Carb.			
35ABC	—23785	Resistor, 500,000 Ohm 1/4 W. Carb.			



**Fig. 3 Bottom View Model 1117**

MODEL 1117

CIRCUIT CHANGES

Fig. 1-A is a revised Wiring Diagram, showing the following circuit changes after serial No. 1343902:  
 Item 13B Part No. G2-34002, 100 mmf. cond. deleted.  
 " 14 Part No. G1-34002, 250 mmf. cond. deleted.  
 " 27B Part No. 41002, 3000 ohm 1/4-w resistor deleted.

" 41 Part No. W-21965, 375 ohm 1 W resistor superseded by Part No. 22873.  
 " 61 Part No. W-20621 added.  
 " 62 Part No. 35600 added.  
 In the later series a shielded lead between items 16 and 53 was found to reduce audio degeneration and thus materially improve the tone quality.

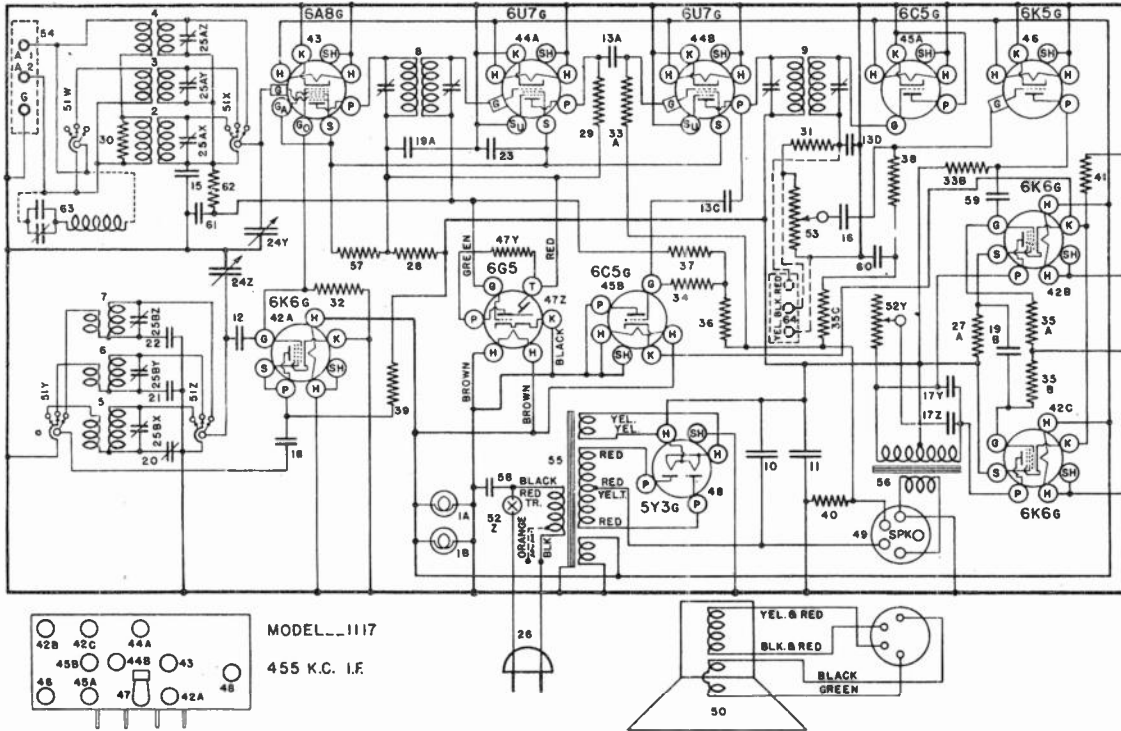


FIG. 1-A—WIRING DIAGRAM—MODEL 1117 SERIES 2

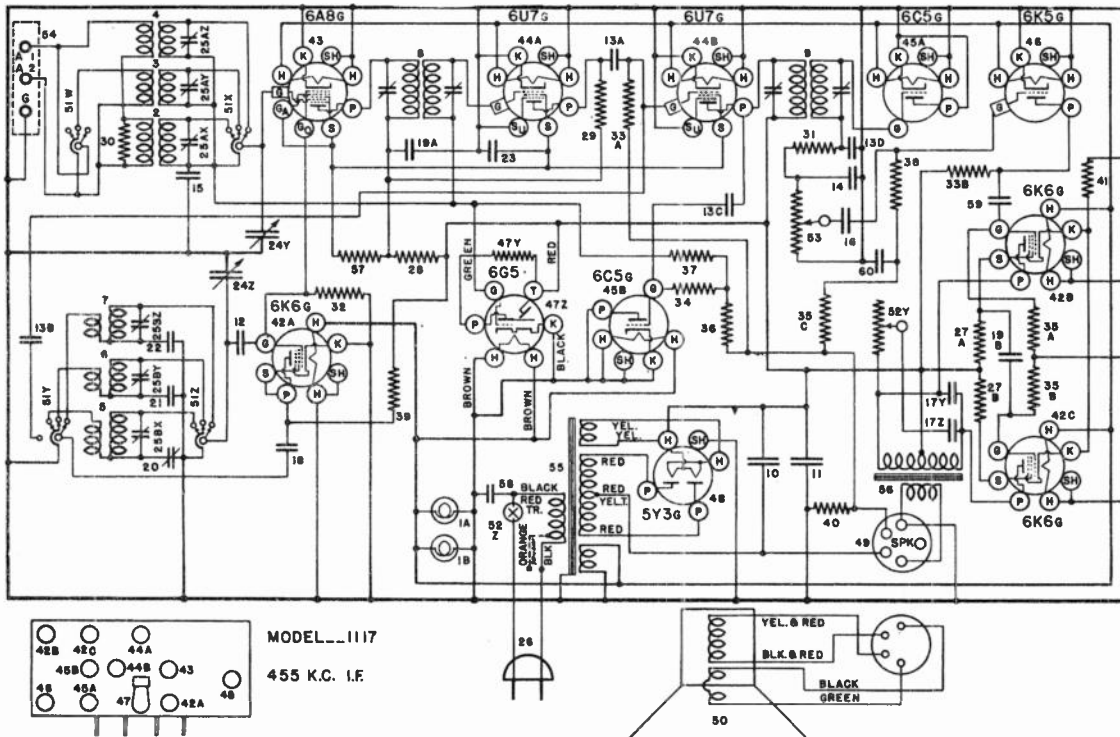


FIG. 1-B—WIRING DIAGRAM—MODEL 1117 SERIES 1

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram. Item 63, Fig. 1A.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.



TUBE SOCKET VOLTAGE READINGS								
Tube	Function	H	P	S	G	K	G <sub>o</sub>	G <sub>a</sub>
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6C5G	"Squelch"	6.3	0	—	—	0	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 90 watts at 117.5 volts.  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

**Tuning The I-F Amplifier To 455 Kilocycles**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance Switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier**

When aligning the R-F amplifier the output lead

from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a 200 muf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. DO NOT READJUST THE OSCILLATOR TRIMMER.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight reposition of the grid lead of the antenna coil in the Band affected.

**(D) SIGNAL INPUT FREQUENCIES**

Min. Cap. Signal	Shunt Align.
1850 Kilocycles	1700 Kilocycles
6600 Kilocycles	6000 Kilocycles
22 Megacycles	18 Megacycles

Series Align.  
600 Kilocycles

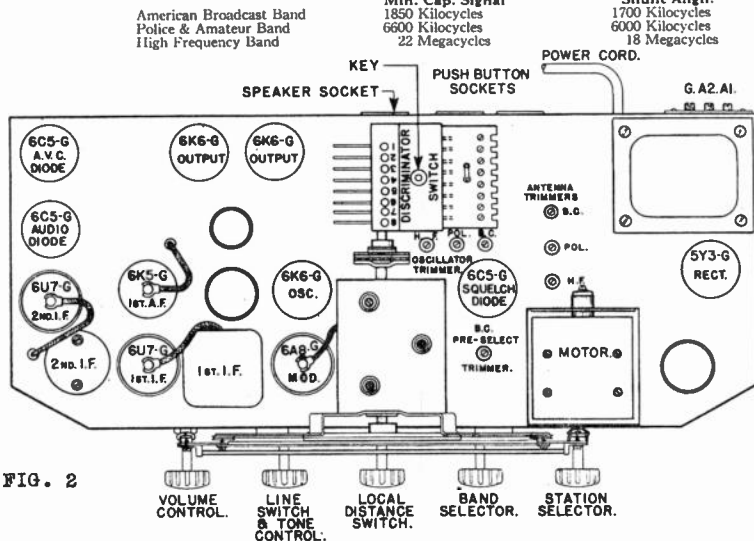


FIG. 2

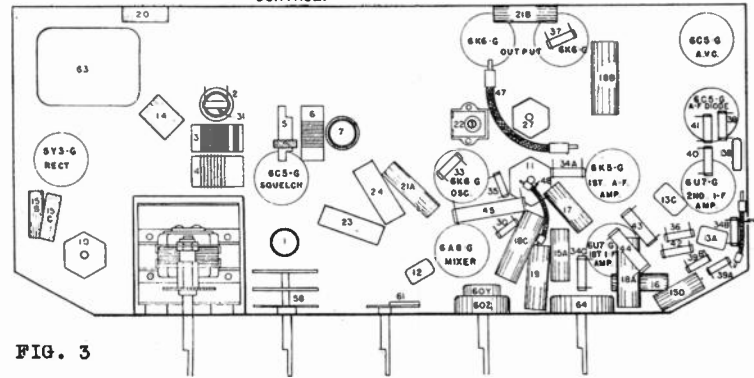
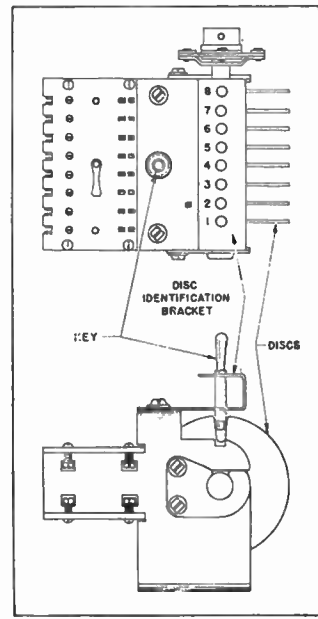
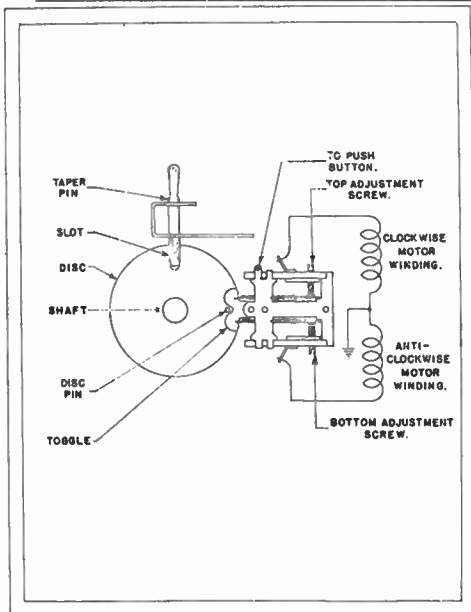


FIG. 3



PARTS LIST — MODEL 1118

Figures in first column refer to parts in Diagrams.						
Item	Part No.	Description	Item	Part No.	Description	
1	G97-32001	Pre-Selector Coil, B.C.	35	--35600	Resistor, 100,000 Ohm 1/2W. Carb.	
2	G138-32000	Antenna Coil, B.C.	36	--36320	Resistor, 1,200,000 Ohm 1/2W. Carb.	
3	G151-32000	Antenna Coil, Police	37	--34018	Resistor, 200,000 Ohm 1/2W. Carb.	
4	G150-32000	Antenna Coil, H.F.	38	--34020	Resistor, 250,000 Ohm 1/2W. Carb.	
5	G159-32002	Oscillator Coil, B.C.	39A	--23785	Resistor, 500,000 Ohm 1/2W. Carb.	
6	G154-32002	Oscillator Coil, Police	39B	--23785	Resistor, 500,000 Ohm 1/2W. Carb.	
7	G153-32002	Oscillator Coil, H.F.	40	--37590	Resistor, 750,000 Ohm 1/2W. Carb.	
8	G161-32004	1st I-F, 455 Kc. Assy.	41	--21451	Resistor, 1 Megohm 1/2W. Carb.	
9	G154-32001	2nd I-F, 455 Kc. Assy.	42	--26577	Resistor, 3 Megohm 1/2W. Carb.	
10	W --44054	Condenser, 30 Mf. 350 V.	43	--44165	Resistor, 5,000 Ohm 1/2W. Carb.	
11	W --38057B	Condenser, 40 Mf. 300 V.	44	--4921C	Resistor, 10,000 Ohm 1/2W. Carb.	
12	G1 --44886	Condenser, Bimetal Temp. Control	45	--44008	Resistor, 10,000 Ohm 2W. Carb.	
13A	G2 --34002	Condenser, .0001 Mf. Molded	46	W --27531	Resistor, 32 Ohm 1/2W. Flex.	
13B	G2 --34002	Condenser, .0001 Mf. Molded	47	W --45381	Resistor, 300 Ohm 2W. Flex.	
13C	G2 --34002	Condenser, .0001 Mf. Molded	48	W --23013	Resistor, 2,000 Ohm 1 1/2W. Flex.	
14	W --35936	Condenser, .05 Mf. 200 V.	49)			
15A	W --28621	Condenser, .02 Mf. 200 V.	to	G178-36400	Socket, 8 Prong Octal.	
15B	W --28621	Condenser, .02 Mf. 200 V.	51)			
15C	W --28621	Condenser, .02 Mf. 200 V.	55	G103-29807	Socket, Speaker	
15D	W --28621	Condenser, .02 Mf. 200 V.	56	G16 --28807	Socket, Push Button Cable	
16	W --41461	Condenser, .0014 Mf. 200 V.		W --11007	Cable Clamp, P. B. Cable	
17	W --28619	Condenser, .006 Mf. 200 V.		W --10911	Tube Shield	
18A	W --22688	Condenser, .1 Mf. 400 V.	57	671BP-18-"M"	Speaker, Spec. No. 1-D-1180	
18B	W --22688	Condenser, .1 Mf. 400 V.		--45184	V. C. and Cone Assembly	
18C	W --22688	Condenser, .1 Mf. 400 V.		--45185	Field Coil (515 Ohm)	
19	W --23615	Condenser, .05 Mf. 400 V.		--44678	Output Transformer	
20	W --30805	Condenser, .01 Mf. 400 V.		--43680	Cone Mounting Ring	
21A	W --35139	Condenser, .0014 Mf. 400 V.	W	--27531	Resistor Control (300,000 Ohm) and Line	
21B	W --35139	Condenser, .001 Mf. 400 V.	W	--22985	Switch	
22	W --40769	Condenser, B.C. Osc. Series Trimmer	W	--16804	Spacer	
23	G23-34000	Condenser, .001560 Mf. Pol. Osc. Fixed Trimmer	W	--24865	Steel Washer	
24	G20-34000	Condenser		--44049	Band Selector Switch	
25	W --35951A	3 Section Shunt Trimmer Assy.	58	G1 --44628	Switch, Discriminator, Assy. Complete	
26	G60-33002	3 Section Var. Tuning Cond. (1118)	59	G2 --44628	Flexible Coupling	
	G62-33002	3 Section Var. Tuning Cond. (1128)	60	--44024B	Volume Control (300,000 Ohm) and Line Switch	
	W --44891B	Dial Face (Glass) (1118)	61	--46086	Switch, Local Distance (1128)	
	W --45587A	Mask (Polished Metal) (1118)	61	--44665A	Switch, Local Distance (1118)	
	C --44110C	Support Bracket (Dial Glass) (1118)	62	G27-26719	Ant. and Gnd. Terminal Assy.	
	W --44262	Ring (Glass Support) (1118)	63	--44910	Power Transformer, 110 V. 60 Cycle	
	W --44263	Arc (Glass Support) (1118)		--44915	Power Transformer, 110 V. 50 Cycle	
	W --41121	Pointer (1118)		4916	Power Transformer, 220 V. 50 Cycle	
	W --40486	Screw—Pointer Mtg. (1118)		--45327	Power Transformer, Universal	
	G5-43564	Pulley and Hub Assy. (1118)	64	--44702	Volume Control, 1 Megohm Tapped	
	W --41582	Drive Cord (1118)	65A	G8-43228	Push Button—Cable and Plug Assy. (R.H.) (1118)	
	W --45448	Drive Belt (1118)	65B	G9-45228	Push Button—Cable and Plug Assy. (L.L.) (1118)	
	W --44907A	Idler Pulley (1118)		W --45478	Trip Bar and Connecting Link (P. B. Switch) (1118)	
	W --44908	Idler Mtg. Stud (1118)	66	G37-26719	Phone Terminal Assy.	
	D --46239	Dial Face (Glass) (1128)	68	B --3390A	Line Cord and Plug	
	C --46094	Dial Glass (Glass) (1128)	71	W --13567	Dial Light Bulb, 6-8 Volt (1118)	
	W --46099	Dial Glass Clip (2) (1128)	71	W --37922	Dial Light Bulb, 6-8 Volt (1128)	
	W --46096	Dial Glass Clip, R.H. (1128)		G9-44363	Dial Light Socket Assy.	
	W --46095	Dial Glass Clip, L.H. (1128)	72	MG45-46081	Push Button—Cable and Plug Assy. (1128)	
	W --46203	Dial Pointer (1128)		7P	Cabinet (1118)	
	W --46097	Dial Pointer Guide (1128)		B --45652A	Escutcheon (Dial) (1118)	
	G --41582	Drive Cord (50-Inch) (1128)		--45667	Escutcheon (Push Button) L.H. (1118)	
	W --46941	Dial Glass Cushion (1128)		--45666	Escutcheon (Push Button) R.H. (1118)	
	G13-43564	Pulley and Hub Assy. (1128)		W --44380B	Knob, Vol. Cont. and Tuning (2) (1118)	
	MG44-46080	Idler Pulley and Brkt. Assy. (1128)		W --44266A	Knob, T. C.—L. D. Sw. and B. C. Sw. (3) (1118)	
	W --44989	Cord Tension Spring (1128)		W --44871A	Push Button (Bakelite) (1118)	
	W --46477	Tubing—Drive Shaft (1128)		B --44876A	Switch (Push Button) Only (1118)	
	W --45448	Drive Belt (1128)		8Q	Cabinet (1128)	
	W --44907B	Idler Pulley (Dual) (1128)		8QA	Cabinet (1128)	
	W --44906	Idler Stud (1128)		C --46228C	Escutcheon (1128)	
	D --46949	Dial Glass (Foreign Only) (1128)		--46360A	Knob, Vol. Cont. and Tuning (2) (1128)	
	W --46290	Drive Cord Clamp (1128)		W --46362A	Knob, T. C.—L. D. Sw. and B. C. Sw. (3) (1128)	
	W --41598	Condenser, 50 Mf. 25 V.		W --45171	Push Button (Bakelite) (1128)	
	W --44516	Condenser, Pre-Select Shunt		B --46221	Switch (Push Button) Only (1128)	
	28	Motor Assembly (50-60 Cycle)		W --44876A	Celluloid Cover (Button)	
	29	Motor			44902	Call Letter Sheet
	W --45168	Motor Foot		W --43553	Rubber Mounting Foot	
	W --20800	Motor Mounting Bracket		W --43552	(Clamp) Speaker Plug	
	--6875	Shakeproof Washer		--45604	Instructions (1118)	
	--6876	W. H. Machine Screw, 3/8" Long		--43003	Instructions (1128)	
	--44497	W. H. Machine Screw, 1/2" Long				
	W --36180	Headed Bushing—Brkt. Mtg.				
	--42401A	Rubber Sleeve—Brkt. Mtg.				
30	--22196	Resistor, 89 Ohm 1/2W. Ins.				
31	--21237A	Resistor, 20,000 Ohm 1/2W. Carb.				
33	--21875	Resistor, 60,000 Ohm 1/2W. Carb.				
34	--21875	Resistor, 100,000 Ohm 1/2W. Carb.				
34B	--21875	Resistor, 100,000 Ohm 1/2W. Carb.				
34C	--21875	Resistor, 100,000 Ohm 1/2W. Carb.				



SETTING PUSH BUTTONS

To set the electric tuning system, turn the receiver "ON" and depress No. 1 push button. When the dial pointer stops rotating, the key slot in No. 1 disc on the selector switch will be in the "UP" position. Remove the key from its mounting, and place it (knob up) through No. 1 hole in the disc identification bracket. If it does not drop into the slot in the disc, push it in with the fingers.

Turn the Local-Distance switch to the "Distance" position. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE, the station whose call letters have been placed in No. 1 push button. Then remove the key.

NOTE: On Model 1128 the push button on the extreme right (manual) serves as a release for all other push buttons and should be depressed before operating the manual tuning control.

NOTE: On Model 1118 the push button which will ordinarily be used for Police calls does not lock in the depressed position. It serves as a release for all other buttons and should be depressed before operating the manual tuning control.

By means of the manual tuning knob, turn the dial pointer to some other position. Then check the setting by pressing the button which has been set. If the pointer stops too soon or goes too far, a second setting will be necessary.

To make the second setting, observe how far the pointer stops from the correct position for that station. Replace the key in the disc and tune far enough to one side of the correct position to make allowance for the difference noted in the first setting.

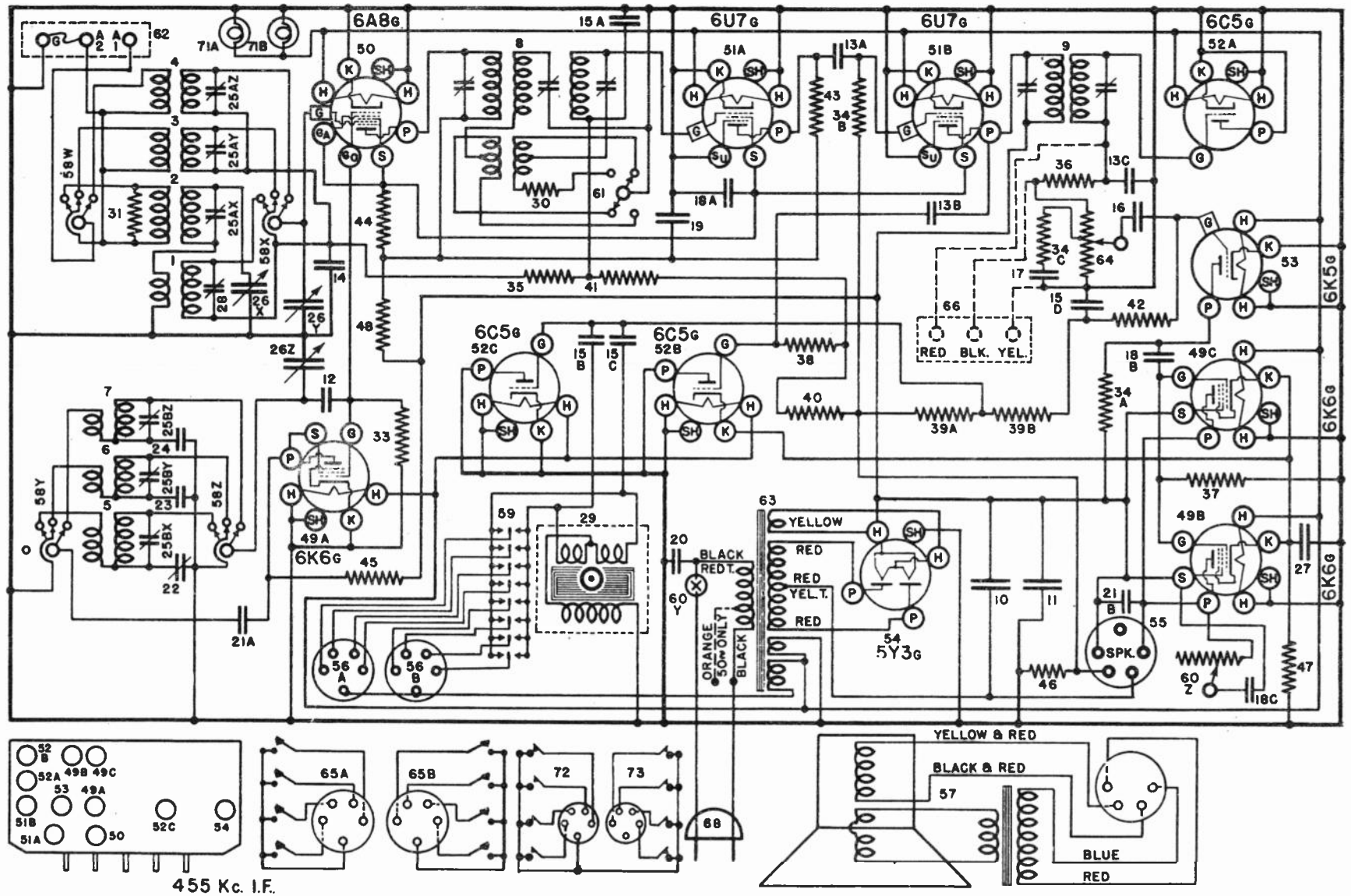


FIG. 1—WIRING DIAGRAM—MODEL 1118 AND 1128

Tube	Function	TUBE SOCKET VOLTAGE READINGS							
		H	P1	P2	S	Su	K	Ga	Go
6K7	R-F Amplifier	6.3	80	—	105	3.5	3.5	—	—
6A8	Oscillator-Modulator	6.3	235	—	105	—	3	150	-4 to -12
6J7	AFC Control	6.3	150	—	137	10.7	10.7	—	—
6K7	I-F Amplifier	6.3	228	—	104	3.4	3.4	—	—
6H6	AFC Diode	6.3	—	—	—	—	4.2	—	—
6R7	A-F Amplifier	6.3	150	—	—	—	6.0	—	—
6N6	(2) Output	6.3	235	345	—	—	5.2	—	—
5Z4	Rectifier	5.0	—	—	—	—	345	—	—
W42419A	Neon Tuning Tube	—	155	80	—	—	—	—	—
W41187	Auto-Expressionator Tube	—	—	—	—	—	—	—	—

Varies with power output.  
Voltage drop across speaker field 110 volts.  
Power output approximately 15 watts.  
Power consumption approximately 123 watts.  
All readings taken on 117.5 volt power supply.

**TUNING I-F AMPLIFIER**

- (a) Connect the output meter,
- (b) Check the 6J7 cathode bias which should be approximately 6.5 volts with no signal applied
- (c) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the "GND" terminal of the receiver chassis.
- (d) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control all the way to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.
- (e) Set the signal generator to 450 kilocycles.
- (f) Adjust the middle trimmer and then the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. Caution: do not attempt to adjust the top trimmer at this time. ALWAYS USE THE LOWEST GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).
- (i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum reading on the output meter.
- (j) Adjust the middle trimmer of the 1st I-F transformer by closing until maximum reading is obtained on the output meter.
- (k) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and recheck the adjustment of the bottom trimmer of the 1st I-F transformer.
- (l) To adjust the AFC system it will be necessary to transfer the output lead of the signal generator back to the top cap of the 6K7 I-F amplifier tube. The .02 mf. condenser should still be connected in series with this lead.
- (m) Insert a 0.5 milliammeter in series with the cathode circuit of the 6J7 tube and with a strong 450 kilocycle signal from the signal generator, the reading of the cathode current should be recorded.

(n) Turn the Phantom Control to the MYSTIC HAND position and without changing the output of the signal generator, adjust the top trimmer condenser of the 2nd I-F transformer so that the reading of the 0.5 milliammeter is the same as was recorded with the Phantom Control in the NORMAL position. This value of current will be obtained with the trimmer closed, with the trimmer open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used. An insulated screw driver should be used in adjusting the AFC trimmer condenser.

(o) As a final check on the AFC adjustment, disconnect the test equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC "ON" and "OFF." If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 10 kilocycles of the station selector setting with AFC "ON," the AFC is properly aligned.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers, 39Z and 39Y—Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

Shunt Alignment	Series Alignment
1,400 Kilocycles	600 Kilocycles
5,000 Kilocycles	2000 Kilocycles
16,000 Kilocycles	

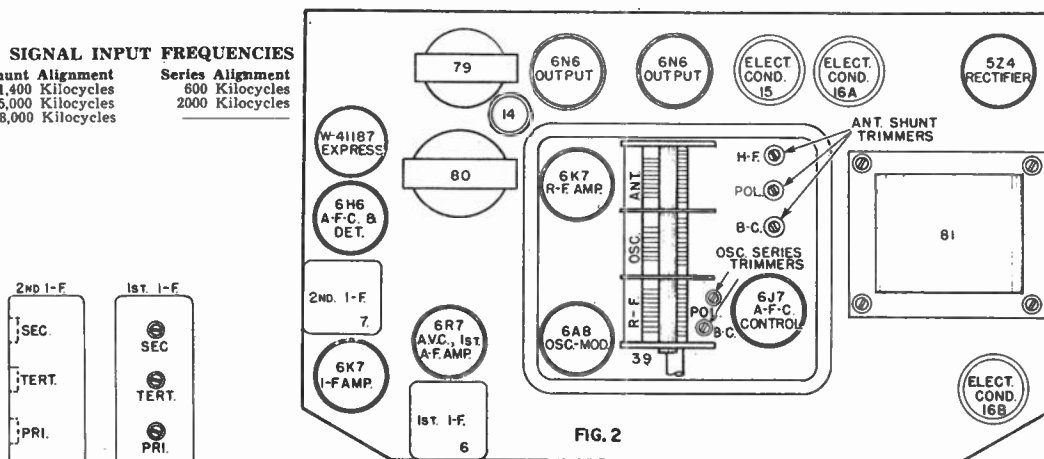


FIG. 2

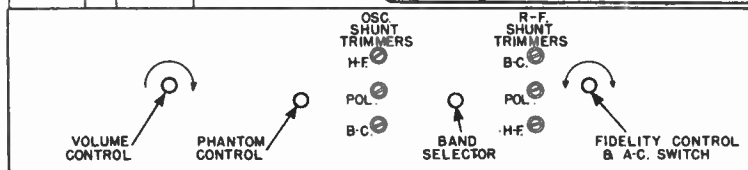
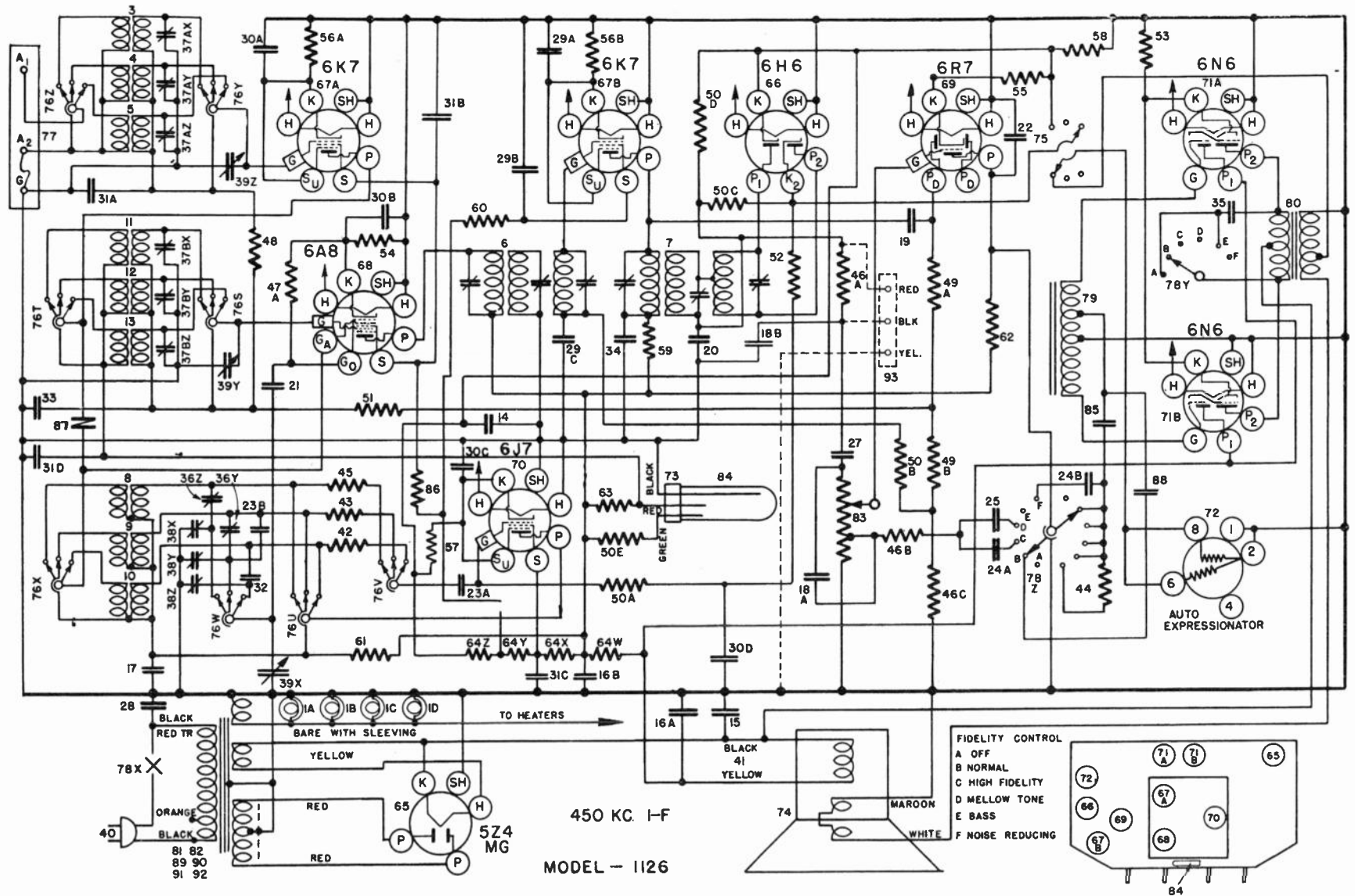


Fig. 3 Front View—1126

**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**



MODEL 1126

Fig. 1. Circuit Diagram—Model 1126

PARTS LIST—MODEL 1126

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
IABCD	W —37922	Dial Light Bulb, 6.3V.	45	—34019	Resistor, 75,000 Ohm. 1/4 W.
	G3 —37965	Socket, Dial Light	46ABC	—35600	Resistor, 100,000 Ohm. 1/4 W.
	W —40570	Shield, Dial Light	47A	—35930	Resistor, 200,000 Ohm. 1/4 W.
2	W —41187	Expressionator Tube	48	—35601	Resistor, 300,000 Ohm. 1/4 W.
3	G94 —32000	Antenna Coil—B. C. B.	49AB	—36321	Resistor, 400,000 Ohm. 1/4 W.
4	G108 —32000	Antenna Coil—Pol. B.	50A	—36322	Resistor, 500,000 Ohm. 1/4 W.
5	G107 —32000	Antenna Coil—H. F. B.	to		
6	G90 —32004	1st I-F Assembly	50E	—36322	Resistor, 500,000 Ohm. 1/4 W.
7	G126 —32004	2nd I-F Assembly	51	—21454	Resistor, 1 Megohm. 1/4 W.
8	G97 —32002	Osc. Coil—B. C. B.	52	—36688	Resistor, 3 Megohm. 1/4 W.
9	G96 —32002	Osc. Coil—Pol. B.	53	W —32961	Resistor, 100 Ohm. 3/4 W. Flex.
10	G95 —32002	Osc. Coil—H. F. B.	54	W —25937	Resistor, 275 Ohm. 1/2 W. Flex.
11	G68 —32001	R-F Coil—B. C. B.	55	W —34900	Resistor, 68 Ohm. 3/4 W. Flex.
12	G75 —32001	R-F Coil—Pol. B.	56AB	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
13	G74 —32001	R-F Coil—H. F. B.	57	—24814	Resistor, 7,000 Ohm. 1/4 W. Carbon
14	W —41598	Condenser, 50 Mf. 25V. (Elect.)	58	W —42518	Resistor, 150 Ohm. 1/2 W. Flex.
15	W —36055	Condenser, 35 Mf. 400V. (Elect.)	59	W —21452	Resistor, 1,100 Ohm. 3/4 W. Flex.
16A	W —42386	Condenser, 20 Mf. 300V. (Elect.)	60	W —27503	Resistor, 1,400 Ohm. 3/4 W. Flex.
16B	W —42386	Condenser, 20 Mf. 300V. (Elect.)	61	—4921	Resistor, 10,000 Ohm. 1W. Carbon
17	G18 —34000	Condenser, 5600 Mmf. H-F Osc. Series	62	—36952	Resistor, 30,000 Ohm. 1W. Carbon
18A	G5 —34002	Condenser, .00005 Mf. Mica 200V.	63	W —42516	Resistor, 20,000 Ohm. 1W. W. W.
18B	G5 —34002	Condenser, .00005 Mf. Mica 200V.	64Z		4,000 Ohm.
19	G10 —34002	Condenser, .00005 Mf. Mica 300V.	64Y		1,000 Ohm.
20	G2 —34002	Condenser, .0001 Mf. Mica 200V.	64X	W —41966	3,000 Ohm.
21	G6 —34002	Condenser, .000025 Mf. Mica 200V.	64W		200 Ohm.
22	G1 —34005	Condenser, .00025 Mf. Mica 300V.	65	G154—36400	Socket Type 5Z4
23A	G3 —34002	Condenser, .0005 Mf. Mica 200V.	66	G155—36400	Socket Type 6H6
23B	G3 —34002	Condenser, .0005 Mf. Mica 200V.	67AB	G151—36400	Socket Type 6K7
24A	W —35758	Condenser, .008 Mf. 400V.	68	G156—36400	Socket Type 6A8
24B	W —35758	Condenser, .008 Mf. 400V.	69	G164—36400	Socket Type 6R7
25	W —41461	Condenser, .0014 Mf. 200V.	70	G157—36400	Socket Type 6J7
26		None	71AB	G165—36400	Socket Type 6N6
27	W —28621	Condenser, .02 Mf. 200V.	72	G167—36400	Socket Type Expressionator
28	W —30805	Condenser, .01 Mf. 400V.	73	G2 —42584	Socket Neon Tube
29A	W —27216	Condenser, .05 Mf. 200V.	74	649CJ4 "M"	Speaker Spec. 1-D-668
29B	W —27216	Condenser, .05 Mf. 200V.		—40701	Cone Assy. for above Speaker
29C	W —27216	Condenser, .05 Mf. 200V.		—40699	Field Coil for above Speaker
30A	W —36541	Condenser, .02 Mf. 160V.	634CJ4 "M"	Speaker Spec. 1-D-244	Speaker Spec. 1-D-244
to				—40268	Cone Assy. for above Speaker
30D	W —36541	Condenser, .02 Mf. 160V.		—40272	Field Coil for above Speaker
31A	W —35936	Condenser, .05 Mf. 200V.	75	W —41029B	Phantom Control Switch
to			76	C —41235A	Band Sel. Switch
31D	W —35936	Condenser, .05 Mf. 200V.	77	G27 —26719	Ant. & Gnd. Terminal Assy.
32	W —41209	Condenser, .048 Mf. 200V.	78	B —42295A	Fidelity & Line Switch
33	W —32380	Condenser, .05 Mf. 200V.	79	G64 —24628	Choke, Audio Input
34	W —32780B	Condenser, .05 Mf. 400V.	80	G60 —24628	Output Transformer
35	W —22688	Condenser, .1 Mf. 400V.	81	—42557	Power Trans. 60 Cy. 110V.
36	W —41218	Trimmer Cond. B.C. & Pol. Osc. Ser.		—43088	Power Trans. 50 Cy. 110V.
37A	W —37891	Trimmer Cond. 3 Sect. Shunt		—43089	Power Trans. 50 Cy. 220V.
37B	W —37891	Trimmer Cond. 3 Sect. Shunt		—43008	Power Trans. 25 Cy. 110V.
38	W —35951	Trimmer Cond. 3 Sect. Shunt		—43170	Power Trans. 25 Cy. 220V.
39	G47 —33002	Cond. Gang—3 Sect. Var. Tuning	82		None
	MG12 —42411	Dial Drive Assembly	83		Vol. Cont. 3 Meg. Tap 1 Meg.
	C —42421	Dial Glass (Calibrated)	84	W —42419A	Neon Tube
	—42598A	Dial Mask (Paper Backing)		W —42589	Tube Cover
	—42325B	Dial Drive Unit (only)		—42592	Cover Gasket
	W —41144	Dial Hand—Long	85	W —42554	Condenser .12 Mf. 160V.
	W —42180	Dial Hand—Short	86	—6705	Resistor, 3,500 Ohm. 1W.
	W —40486	Screw—Hand Mtg.	87	G101—34403	R-F Neutralizer Assembly
	E —13647	Mystic Hand, etc., Flipper (L. H.)	88	W —43091	Condenser .07 Mf. 160V.
	E —13648	Fidelity, etc., Flipper (R. H.)		G37 —26719	Phono Terminal Assembly
	W —42308	Flipper Pulley (2)		C —43134	Escutcheon
	W —37909A	Band Indi. Pulley		—42043	Escutcheon Rubber Strip
	—43081	L. H. Flipper Control Cable		C —42044	Escutcheon Lens
	—43080	R. H. Flipper Control Cable		D —30	Mtg. Screws, Escutcheon
	—40638	Band Indicator Control Cable		W —37339	Knob, V. C. & Sta. Sel.
	—41157	Drive Belt		W —40192	Knob, Bd. Sel. & Phantom Cont.
	—40537	Drive Flexible Coupling		W —42490	Knob, Fidelity Cont.
40	B —33906A	Power Cord & Plug		W —36117	Rubber Mtg. Foot
41	G2 —37918	Speaker Cable		W —40230B	Emblem
42	—36760	Resistor, 20,000 Ohm. 1/4 W.		W —32620	Nut, Emblem Mtg.
43	—33390	Resistor, 30,000 Ohm. 1/4 W.		—6-W	Cabinet
44	—21453	Resistor, 40,000 Ohm. 1/4 W.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	250	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—
6T5	Tuning Indicator	6.3	Variable	—	—	—	—	—

Power consumption approximately 90 watts at 117.5 volts. (Tuning Motor 50 Watts Additional)  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. **DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.**

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead

from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "Ant" trimmer.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7,000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

**(D) SIGNAL INPUT FREQUENCIES**

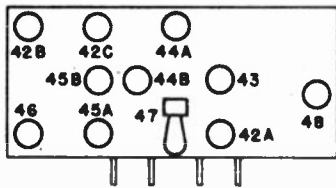
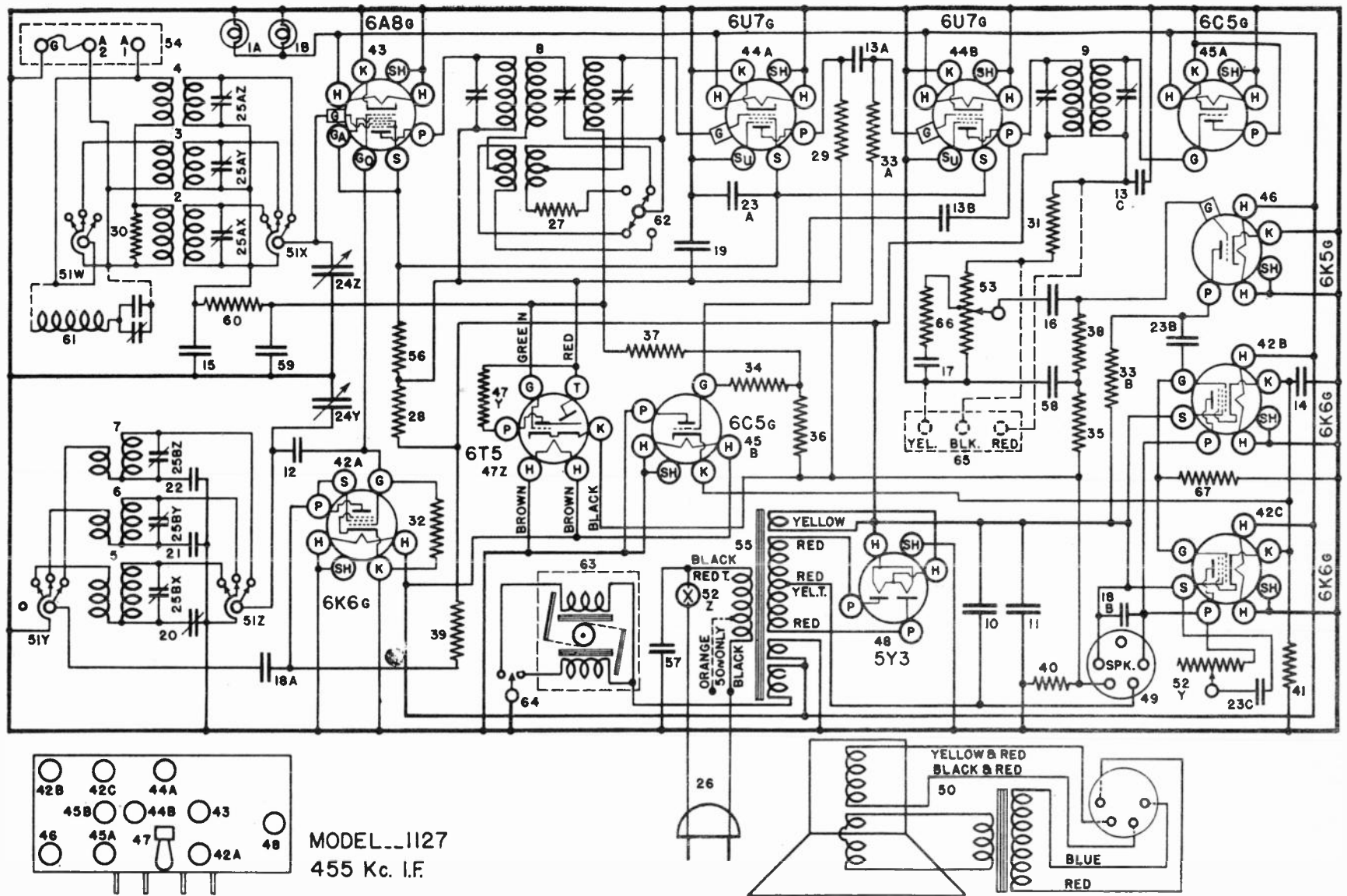
	Min. Cap. Signal	Shunt Align.	Series Align.
American Broadcast Band	1850 Kilocycles	1700 Kilocycles	600 Kilocycles
Police & Amateur Band	6600 Kilocycles	6000 Kilocycles	
High Frequency Band	22 Megacycles	18 Megacycles	

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram. Item 61, Fig. 1.

The wave trap should not be adjusted until all other

adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 200 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.



MODEL 1127  
455 Kc. I.F.

FIG. 1—WIRING DIAGRAM—MODEL 1127



PARTS LIST—MODEL 1127

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1AB	W -43567	Dial Light 6-8 V.	43	G156 -36400	Socket Type 6A8
2	G139 -32000	Ant. Coil B. C.	44AB	G171 -36400	Socket Type 6U7
3	G138 -32000	Ant. Coil Pol.	45AB	G152 -36400	Socket Type 6C5
4	G156 -32000	Ant. Coil H. F.	46	G9 -43900	Socket Type 6K5
5	G139 -32002	Osc. Coil B. C.	47Z	W -44121	Socket Type 6T5
6	G138 -32002	Osc. Coil Pol.	47Y	W -44121	Resistor 1 Meg in Socket
7	G160 -32002	Osc. Coil H. F.	48	G173 -36400	Socket Type 5Y3
8	G161 -32004	1st I-F Assy.	49	G108 -28807	Socket Speaker
9	G154 -32004	2nd I-F Assy.	W	-40911	Tube Shield
10	W -44054	Condenser 30 Mf. 350 V.	MG17	-44099	Indic. Tube Bracket (Clamp Assy.)
11	W -36057B	Condenser 40 Mf. 300 C.	W	-44137	Indic. Tube Mtg. Brkt.
12	G13	Condenser .000035 Mf. Molded	W	-2380A	Thumb Screw
13A	G2 -34002	Condenser .0001 Mf. Molded	50	-5718P18" M"	Speaker Spec. No. 1-D-1128
13B	G2 -34002	Condenser .0001 Mf. Molded		-44777	V. C. & Cone Assy.
13C	G2 -34002	Condenser .0001 Mf. Molded		-44276	Field Coil
14	W -41598	Condenser 50 Mf. 25 V.		-44678	Output Transformer
15	W -35936	Condenser .05 Mf. 200 V.		-43678	Cone Mtg. Ring (Card board)
16	W -41461	Condenser .0014 Mf. 200 V.	W	-43562	Spk. Plug Clamp
17	W -28619	Condenser .006 Mf. 200 V.		-44049A	Band Selector Switch
18A	W -35139	Condenser .004 Mf. 400 V.	51		Tone Control (100,000 Ohm)
18B	W -35139	Condenser .004 Mf. 400 V.	52Z		Line Switch
19	W -23015	Condenser .05 Mf. 400 V.	52Y		Volume Control (1 Meg.)
20	-40769	Trimmer B. C. Osc. Series	53	-44674	Ant. & Gnd. Term. Assy.
21	G23 -34000	Condenser .001560 Mf.	54	G27 -26719	Power Trans. 110 V. 60 Cy.
21	G20 -34000	Condenser .004910 Mf.	55	-44511	Power Trans. 110 V. 50 Cy.
23A	W -22688	Condenser 1 Mf. 400 V.		-44731	Power Trans. 110 V. 50 Cy.
23B	W -22688	Condenser 1 Mf. 400 V.		-44732	Power Trans. 220 V. 50 Cy.
23C	W -22688	Condenser 1 Mf. 400 V.		-44729	Power Trans. 110 V. 25 Cy.
24	G40 -33001	2 Sect. Var. Tuning Cond.		-44730	Power Trans. 220 V. 25 Cy.
	-44475A	Dial Face (Glass)	56	-4921C	Resistor 10,000 Ohm 1 W. Carb
	W -44127	Pointer	57	W -30805	Condenser .01 Mf. 400 V.
	W -40486	Screw (Pointer Mtg.)	58	W -34712	Condenser .25 Mf. 180 V.
	W -44148A	Dial Mask (Metal Disc.)	59	W -28621	Condenser .02 Mf. 200 V.
	-2045	(Pointer) Shakeproof Washer	60	-35600	Resistor 100,000 Ohm ¼ W. Ins.
	C -44110C	Dial Glass Support Brkt.	61	G164 -32004	Wave Trap
	W -44479	Drive Shaft Bracket	62	-44796	Switch (Local-Distance)
	W -44480A	Drive Shaft Sleeve	G2	-44476	Toggle L.-D. Sw. (Female)
MG21	-44484	Drive Shaft & Coupling	G3	-44470	Toggle L.-D. Sw. (Male)
G1	-43564	Pulley & Hub Assy.	63	G1 -44416	Dynatrol Motor
	-41582	Drive Cord	B	-44317	Pulley
W	-43561	Spring Cord Tension	W	-4012	Set Screw (Pulley)
G1	-44470	Switch Arm & Hub Assy.	W	-44382	Friction Spring (Shaft)
W	-44262A	Dial Support Ring	W	-43822	Felt Washer (Shaft)
W	-44263A	Dial Support Arc	W	-44493	Shaft (Motor)
W	-35961A	3 Sect. Trimmer Assy.	W	-44319	Belt Anchor (Hook)
B	-33906A	Power Cord & Plug	W	-44701	Grommet (Anchor Hook)
W	-42401B	Resistor 99 Ohm ¼ W. Ins.	W	-44976A	Guide Brkt. (Belt)
W	-23013	Resistor 2,000 Ohm 1¼ W. Flex.	W	-24074	Stop Nut (Anchor Ret.)
29	-44185	Resistor 5,000 Ohm ½ W. Carb.	W	-7578	Tubing 1¼" (Anchor Hook)
30	-22196	Resistor 20,000 Ohm 1/3 W. Carb.	W	-44384A	Shock Pad
31	-36320	Resistor 120,000 Ohm ¼ W. Ins.	W	-45218	Vibrator Drive Unit (Right or Left)
32	-21237A	Resistor 60,000 Ohm 1/3 W. Carb.	64	G1 -44476	Motor Switch Assembly.
33A	-21875	Resistor, 100,000 Ohm 1/3 W. Carb.	65	G37 -26719	Phono. Term. Board
33B	-21875	Resistor, 100,000 Ohm 1/3 W. Carb.	66	-21875	Resistor 100,000 Ohm 1/3 W. Carb.
34	-34020	Resistor 250,000 Ohm 1/3 W. Carb.	67	-34018	Resistor 200,000 Ohm 1/3 W. Carb.
35	-23785	Resistor 500,000 Ohm 1/3 W. Carb.	B	-44207B	Escutcheon (Dial)
36	-37590	Resistor 750,000 Ohm 1/3 W. Carb.	W	-44208C	Escutcheon (Tun. Indic. Tube)
37	-21454	Resistor 1. Megohm 1/3 W. Carb.	W	-43553	Rubber Mtg. Foot
38	-26577	Resistor 3. Megohm 1/3 W. Carb.		-45067	Call Letter Sheet
39	-44008	Resistor 10,000 Ohm 2 W. Carb.		-44366B	Knob (2) (Vol. Cont. & Station Select.)
40	W -37631	Resistor 32 Ohm ¼ W. Flex.		-44387B	Knob (Motor Control)
41	W -22873	Resistor 220 Ohm 2¼ W. Flex.	W	-44381B	Knob (Line Sw. & Tone Con.)
42ABC	G172 -36400	Socket Type 6K6	W	-44432	Knob (Band Select. Sw.)
			W	-45062	Knob (Local Distance Sw.)
				-7 S	Cabinet
			W	-44510	Grille Cloth (75 Cab.)
			W	-44865A	Call Letter Clip
			W	-44866	Call Letter Mag. Lens
			G13	-44383	D. L. Socket Assy.

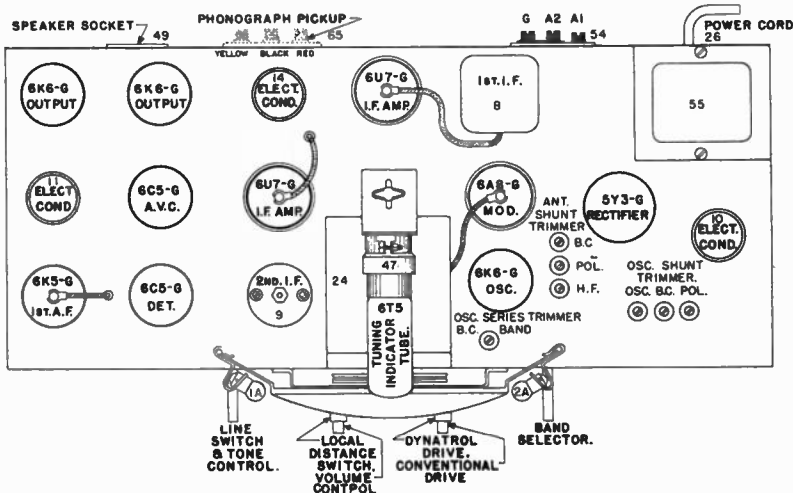


Fig. 2—Top View Model 1127

## CHASSIS MODEL 1137

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6C5G	"Squelch"	6.3	0	—	—	0	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 90 watts at 117.5 volts.

Power output approximately 10 watts.

Voltage drop across speaker field 60 volts.

### Tuning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance Switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. **DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.**

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

### Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT"

#### (D) SIGNAL INPUT FREQUENCIES

American Broadcast Band	1850 Kilocycles
Police & Amateur Band	6600 Kilocycles
High Frequency Band	22 Megacycles

Shunt Align.
1700 Kilocycles
6000 Kilocycles
18 Megacycles

Series Align.
600 Kilocycles

### SETTING PUSH BUTTONS

To set the electric tuning system, turn the receiver "ON" and hold No. 1 push button in the depressed position until the dial pointer stops. The key slot in No. 1 disc on the selector switch will now be in the "UP" position. Remove the key from its mounting and place it (knob up) through No. 1 hole in the disc identification bracket. If it does not drop into the slot in the disc, push it in with the fingers.

Turn the Local-Distance switch to the "Distance" po-

terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE, the station whose call letters have been placed in No. 1 push button. Then remove the key.

The electric tuning system is now correctly set for the 1st station. Follow through with this same procedure until the proper adjustments have been made for all eight of the favorite stations. When tuning the receiver by means of the push buttons, the Local-Distance switch should be turned to the "Local" position.

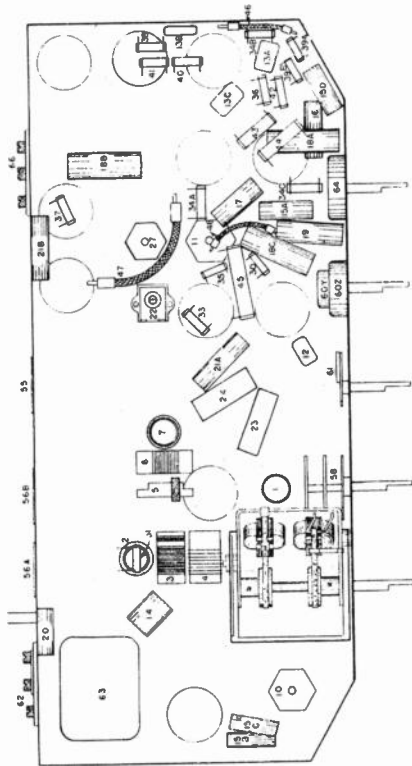


Fig. 3 Bottom View Model 1137

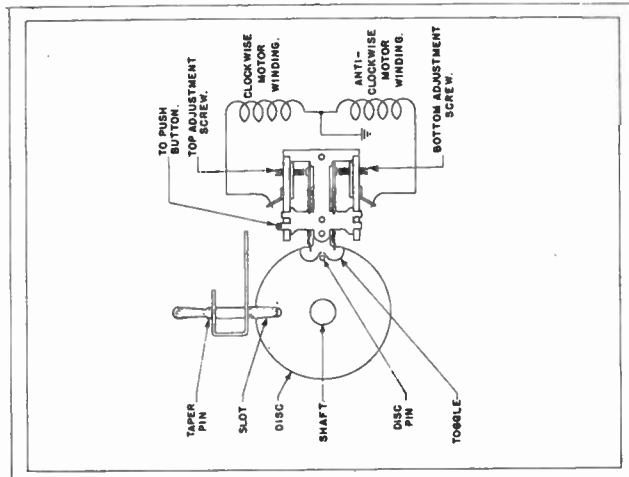


Fig. 6

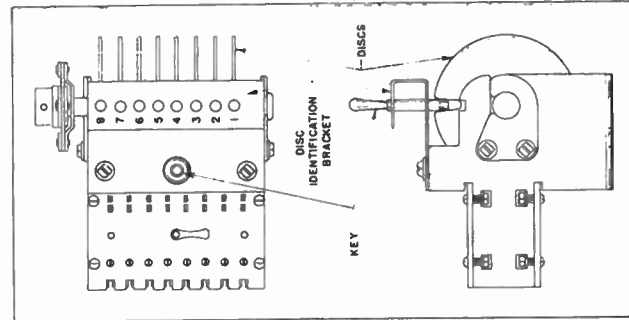


Fig. 7

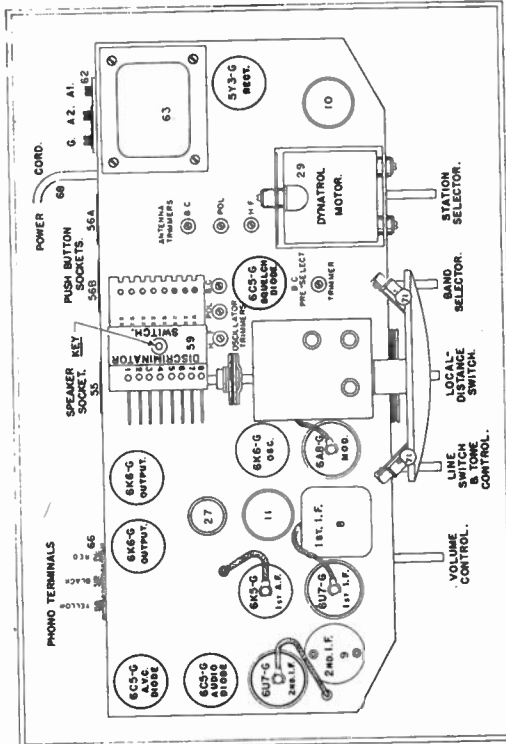


Fig. 2 Top View Model 1137

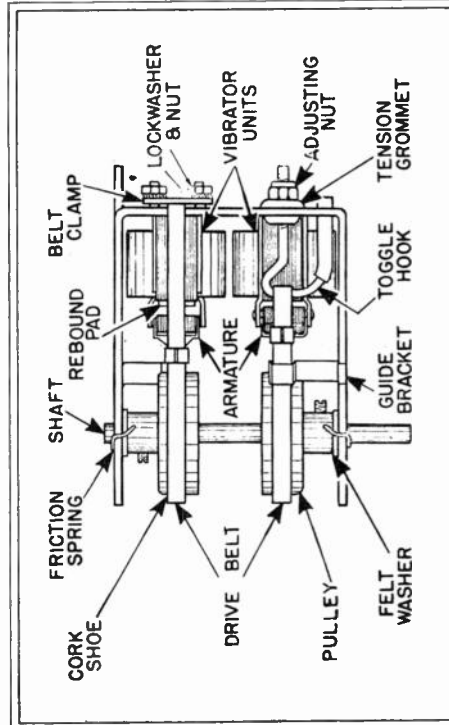


Fig. 5

**Dynatrol Motor**

Should either vibrator unit of the Dynatrol motor need readjustment the following procedure should be carefully followed:

- (a) Loosen the adjustment nut until the belt is loose on the pulley. The gap between the armature and "E" laminations should be approximately 3/16".
- (b) With the motor running, tighten the adjustment nut until chatter stops. Care should be taken, however, not to tighten this adjustment too tight as an unstable condition will be reached wherein a slight change may result in a locked motor. On the other hand, the

adjustment should not be so loose that the armature actually hits the rebound pad.

(c) Check the time required for the dial pointer to travel between two points on the dial. The adjustment nuts should be set so that approximately eight or nine seconds are required for the pointer to travel from one end of the dial to the other in either direction. If it is only convenient to check the speed of the pointer over a portion of the dial, the time required will be in direct proportion to the length of the dial scale traversed. That is, approximately 6 seconds will be required to travel two-thirds of the scale, etc.



PARTS LIST—MODEL 1137

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	G97—32001	Pre-Selector Coil B-C.	36	—36320	Resistor 120,000 Ohm ¼ W. Ins.
2	G138—32000	Ant. Coil B-C.	37	—34018	Resistor 200,000 Ohm 1/3 W. Carb.
3	G151—32000	Ant. Coil Pol.	38	—34020	Resistor 250,000 Ohm 1/3 W. Carb.
4	G150—32000	Ant. Coil H-F.	39A	—23785	Resistor 500,000 Ohm 1/3 W. Carb.
5	G139—32002	Osc. Coil B-C.	39B	—23785	Resistor 500,000 Ohm 1/3 W. Carb.
6	G154—32002	Osc. Coil Pol.	40	—37590	Resistor 750,000 Ohm 1/3 W. Carb.
7	G153—32002	Osc. Coil H-F.	41	—21454	Resistor 1 Megohm 1/3 W. Carb.
8	G161—32004	1st I-F 455 Kc.	42	—26577	Resistor 3 Megohm 1/3 W. Carb.
9	G154—32004	3rd I-F 455 Kc.	43	—44165	Resistor 5,000 Ohm ½ W. Carb.
10	W —44054	Condenser 30 Mf. 350 V.	44	—4921C	Resistor 10,000 Ohm 1 W. Carb.
11	W —36057B	Condenser 40 Mf. 300 V.	45	—44008	Resistor 10,000 Ohm 2 W. Carb.
12	G1 —44886	Condenser Bimetal Temp. Control	46	W —37631	Resistor 32 Ohm ½ W. Flex.
13A	G2 —34002	Condenser .0001 Mf. Molded	47	W —22873	Resistor 220 Ohm 2½ W. Flex.
13B	G2 —34002	Condenser .0001 Mf. Molded	48	W —23013	Resistor 2,000 Ohm ¼ W. Flex.
13C	G2 —34002	Condenser .0001 Mf. Molded	49	G172—36400	Socket Type 6K6
14	W —35936	Condenser .05 Mf. 200 V.	50	G156—36400	Socket Type 6A8
15A	W —28621	Condenser .02 Mf. 200 V.	51	G171—36400	Socket Type 6U7
15B	W —28621	Condenser .02 Mf. 200 V.	52	G152—36400	Socket Type 6C5
15C	W —28621	Condenser .02 Mf. 200 V.	53	G9 —43900	Socket Type 6K5
15D	W —28621	Condenser .02 Mf. 200 V.	54	G173—36400	Socket Type 5Y3
16	W —41461	Condenser .0014 Mf. 200 V.	55	G103—28807	Socket Speaker
17	W —28619	Condenser .006 Mf. 200 V.	56	G16 —28807	Socket Push Button Cable
18A	W —22688	Condenser .1 Mf. 400 V.	57	W —41007	Cable Clamp, P. B. Cable
18B	W —22688	Condenser .1 Mf. 400 V.		—671BP18“M”	Speaker Spec. No. 1-D-1180
18C	W —22688	Condenser .1 Mf. 400 V.		—45184	V. C. & Cone Assem.
19	W —23615	Condenser .05 Mf. 400 V.		—45185	Field Coil
20	W —30805	Condenser .01 Mf. 400 V.		—44678	Output Transformer
21A	W —35139	Condenser .004 Mf. 400 V.		—43680	Cone Mtg. Ring
21B	W —35139	Condenser .004 Mf. 400 V.		—44049	Band Selector Switch
22	—40769	Condenser B. C. Osc. Series Trimmer	58	G1 —44628	Switch Discriminator Assy. Complete
23	G23 —34000	Condenser .001560 Mf. Pol. Osc. Fixed Trimmer	59	G2 —44628	Flex. Coupling
24	G20 —34000	Condenser .004910 Mf. H-F. Osc. Fixed Trimmer	60	—44024B	Tone Control (300,000 Ohm) & Line Switch
25	W —35951A	3 Sec. Shunt Trimmer Assy.	61	—44665A	Switch Local-Distance
26	G60 —33002	3 Sec. Var. Tuning Cond.	62	G27 —26719	Ant. & Gnd. Terminal Assy.
	—44891B	Dial Face (Glass)	63	—44910	Power Trans 110 V. 60 Cy.
	W —44146A	Mask (Polished Metal)		—44915	Power Trans. 110 V. 50 Cy.
	C —44110C	Support Brkt. (Dial Glass)		—44913	Power Trans. 110 V. 25 Cy.
	W —44262	Ring (Glass Support)		—44916	Power Trans. 220 V. 50 Cy.
	W —44263	Arc (Glass Support)		—44914	Power Trans. 220 V. 25 Cy.
	W —44127	Pointer	64	—44702	Volume Cont. 1 Meg. Tapped
	W —40486	Screw—Pointer Mtg.	65A	W —44877A	Push Button—Cable & Plug Assy.
	G5 —43564	Pulley & Hub Assy.	65B	W —44877A	Push Button—Cable & Plug Assy.
	—41582	Drive Cord	66	G37 —26719	Phono. Terminal Assy.
	W —44813	Drive Belt	67	B —33906A	Line Cord & Plug
	W —44907A	Idler Pulley	68		
	W —44908	Idler Mtg. Stud	69		
27	W —41598	Condenser 50 Mf. 25 V.	70	W —43567	Dial Light Bulb 6-8 V.
28	—44516	Condenser Pre-Select. Shunt	71	G12 —44363	Dial L. Socket Assy.
29	G4 —44416	Vibrator Motor Assy. (50-60 Cy.)		—7P	Cabinet
	W —45218	Vibrator Drive Unit (Left or Right)		W —43552	Clamp—Spk. Plug
	W —44317A	Pulley (Vib. Motor)		W —43553	Rubber Mtg. Foot
	W —43622	Felt Washer (Shaft)		W —44380B	Knob (2)
	W —44382	Friction Spring (Shaft)		W —44426A	Knob (3)
	W —44319	Toggle Hook (Belt)		C —44883B	Escutcheon (Dial)
	—7593	Tubing ⅜" (For Hook)		G1 —45228	Push Button & Cable Assy.
	W —44701C	Grommet (Tension)		W —44871A	Push Button (Bakelite)
	W —24074	Nut—Adjusting		B —44876A	Switch (Push Button) Only
	W —44384A	Rubber Pad (Rebound)		W —44875	Celluloid Cover (Button)
	W —44745	Clamp Plate (Belt)		—44902	Call Letter Sheet
30	—42401A	Resistor 99 Ohm ¼ W. Ins.		B —44873B	Escutcheon, Push Button
31	—22196	Resistor 20,000 Ohm 1/3 W. Carb.		W —40911	Tube Shield
32					
33	—21237A	Resistor 60,000 Ohm 1/3 W. Carb.			
34A	—21875	Resistor 100,000 Ohm 1/3 W. Carb.			
34B	—21875	Resistor 100,000 Ohm 1/3 W. Carb.			
34C	—21875	Resistor 100,000 Ohm 1/3 W. Carb.			
35	—35600	Resistor 100,000 Ohm ¼ W. Ins.			

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	G	K	Go
6K7	R. F. Amplifier	6.3	238	100	3	0	3	—
6L7	Modulator	6.3	230	100	—	0	3.5	—5 to —30
6C5	Oscillator	6.3	140	—	—	—5 to —30	—	—
6K7	I-F Amplifier	6.3	230	95	3	0	3	—
6H6	Diode Detector	6.3	—	—	—	—	—	—
6Q7	A. F. Amplifier	6.3	155	—	—	0	2	—
6F6	Output Driver	6.3	210	210	—	0	17	—
6F6	(2) Output	6.3	360	235	—	0	17	—
5Z4	(2) Rectifiers	5.0	360	—	—	—	—	—

**Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver chassis.

(b) Set the band selector switch to the broadcast band and rotate the station selector to 60 on the Broadcast Band. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE), and turn the expressionator control knob to the left (OFF).

(c) Set the signal generator to 450 kilocycles.

(d) Close the middle trimmer condenser on the 2nd I-F transformer (Tert. Fig 4) so that it is moderately tight. (Do not force adjusting screw).

(e) Adjust the top and then the bottom trimmers (Sec. and Pri.) of the 2nd I-F transformer for maximum output.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6L7 modulator tube leaving the tube's grid clip in place.

(g) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the screw does not become dislodged from the nut).

(h) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(i) Transfer the output lead of the signal generator from the 6L7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(j) Adjust the middle trimmer of the 2nd I-F transformer by opening condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

(k) Adjust the middle trimmer of the 1st I-F transformer by closing condenser until maximum output is obtained.

**Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE, RED and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (BLUE, RED and GREEN bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" parallel trimmers (Fig. 4 and 2) in the order given for maximum put. Tune the station selector slightly to the generator signal for maximum output and then check the adjustments of the "R-F" (Fig. 4) and "ANT" trimmers (Fig. 2) in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the "series" trimmers (Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. Tune the station selector slightly to the generator output. Adjust the series trimmer while rotating the station selector back and forth slightly until no further improvement in output can be obtained.

(c) Signal Input Frequencies for Alignment:

Shunt Alignment	Series Alignment
400 Kc	150 Kc
1700 Kc	600 Kc
6000 Kc	2500 Kc
18000 Kc	

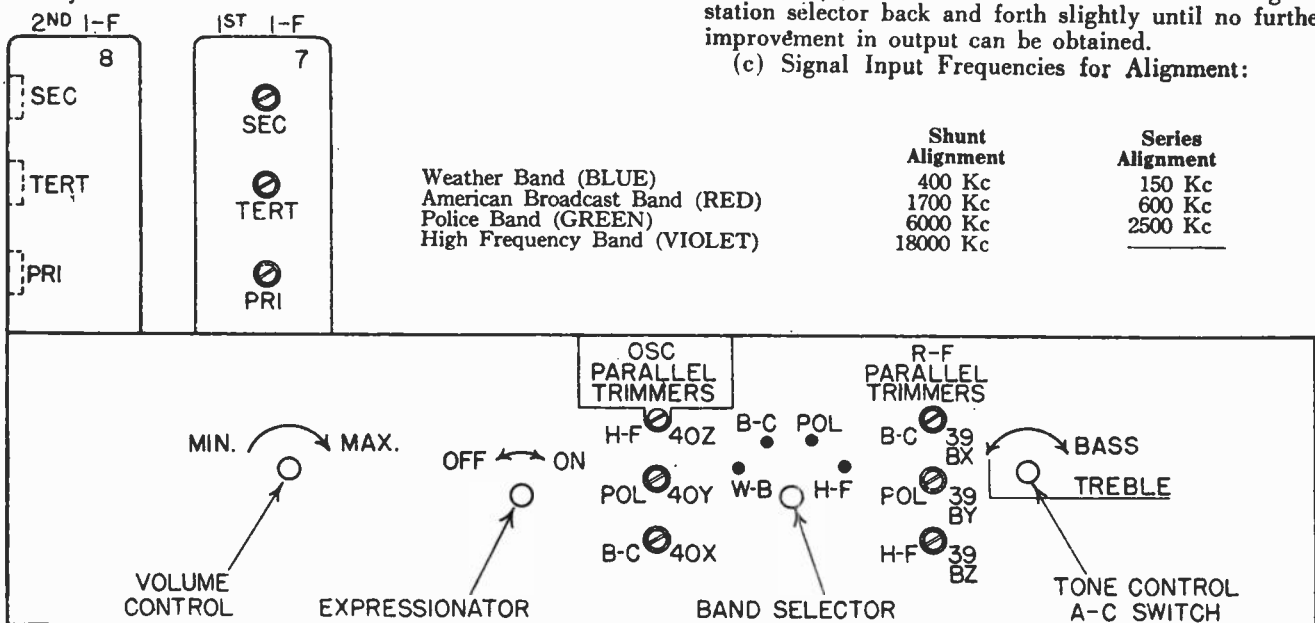


Fig. 4. Front View 1155

# PARTS LIST—MODEL 1155

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Description	Item No.	Part No.	Name	Description
1A	W -37922	Bulb	Dial Light	49B	-35601	Resistor	300,000 Ohms, 1/4 W. Insul.
B	W -37922	Bulb	Dial Light	49C	-35601	Resistor	300,000 Ohms, 1/4 W. Insul.
C	W -37922	Bulb	Dial Light	50	-33334	Resistor	400,000 Ohms, 1/4 W. Carbon
D	W -37922	Bulb	Indicator Light	51A	-36322	Resistor	500,000 Ohms, 1/4 W. Carbon
2A	W -10145	Bulb	Auto-Expression Ballast	51B	-36322	Resistor	500,000 Ohms, 1/4 W. Carbon
B	W -10445	Bulb	Auto-Expression Ballast	51C	-36322	Resistor	500,000 Ohms, 1/4 W. Carbon
	G2 -37965	Socket	Auto-Expression Ballast	52	-21454	Resistor	1. Megohm, 1/4 W. Carbon
3	G6 -32000	Coil	Ant. 150-400 Kc.	54A	W -37933	Resistor	1.0 Ohms, 1 Watt
4	G94 -32000	Coil	Ant. 540-1900 Kc.	54B	W -37933	Resistor	1.0 Ohms, 1 Watt
5	G95 -32000	Coil	Ant. 1900-6000 Kc.	55	W -22873	Resistor	220 Ohms, 2 1/2 W. Flex.
6	G93 -32000	Coil	Ant. 6-18 Mc.	56	None		
7	G96 -32004	Coil	1st I. F. Assem.	57A	W -28589	Resistor	350 Ohms, 1/4 W. Flex.
8	G91 -32004	Coil	2nd I. F. Assem.	57B	W -28589	Resistor	350 Ohms, 1/4 W. Flex.
9	G79 -32002	Coil	Osc. 150-400 Kc.	57C	W -28589	Resistor	350 Ohms, 1/4 W. Flex.
10	G30 -32002	Coil	Osc. 540-1900 Kc.	58	W -32337	Resistor	20 Ohm., Wire Wound
11	G81 -32002	Coil	Osc. 1900-6000 Kc.	59Z	W -37955	Resistor	4000 Ohms, Wire Wound
12	G78 -32002	Coil	Osc. 6-18 Mc.	59Y	W -37955	Resistor	4000 Ohms, Wire Wound
13	G67 -32001	Coil	R. F. 150-400 Kc.	60	W -30960	Resistor	2600 Ohms, 1 1/2 W. Flex.
14	G68 -32001	Coil	R. F. 540-1900 Kc.	61	W -27503	Resistor	1400 Ohms, 1/4 W.
15	G69 -32001	Coil	R. F. 1900-6000 Kc.	62	W -22180	Resistor	1650 Ohms, 1 1/4 W.
16	G66 -32001	Coil	R. F. 6-18 Mc.	63	W -23013	Resistor	2000 Ohms, 1 1/2 W.
17Z	W -37632	Condenser	25 Mfd., 25 Volt	64	W -37987	Resistor	15000 Ohms, 1 W.
17Y	W -37632	Condenser	12 Mfd., 25 Volt	65	-21876	Resistor	10,000 Ohms, 1/4 W.
18A	W -36055	Condenser	35 Mfd., 400 Volt	66A	G54 -36400	Socket	Type 5Z4
18B	W -36055	Condenser	35 Mfd., 400 Volt	66B	G54 -36400	Socket	Type 5Z4
19	W -36057	Condenser	40 Mfd., 300 Volt	67	G152 -36400	Socket	Type 6C5
20	G18 -34000	Condenser	.0056 Mfd., 300 Volt	68A	G152 -36400	Socket	Type 6F6
21	G6 -34002	Condenser	.00025 Mfd., 200 Volt	68B	G153 -36400	Socket	Type 6F6
22A	G2 -34002	Condenser	.0001 Mfd., 200 Volt	68C	G153 -36400	Socket	Type 6F6
22B	G2 -34002	Condenser	.0001 Mfd., 200 Volt	69	G155 -36400	Socket	Type 6H6
23	G1 -34002	Condenser	.00025 Mfd., 200 Volt	70A	G151 -36400	Socket	Type 6K7
24	G1 -34005	Condenser	.00025 Mfd., 300 Volt	70B	G151 -36400	Socket	Type 6K7
25	W -34647	Condenser	.006 Mfd., 400 Volt	71	G159 -36400	Socket	Type 6L7
26A	W -35139	Condenser	.004 Mfd., 400 Volt	72	None		
26B	W -35139	Condenser	.004 Mfd., 400 Volt	73	-634CJ4	Speaker	
27	W -30805	Condenser	.01 Mfd., 400 Volt	74	W -37956	Switch	Auto-Expressionator
28A	W -32378	Condenser	.01 Mfd., 400 Volt	75Z	C -37957-A	Switch	Band Selector
28B	W -32378	Condenser	.01 Mfd., 400 Volt	75Y	C -37957-A	Switch	Band Selector
29A	W -36541	Condenser	.02 Mfd., 160 Volt	75X	C -37957-A	Switch	Band Selector
29B	W -36541	Condenser	.02 Mfd., 160 Volt	76	G27 -26719	Ter. Board	Ant. and Ground
30	W -28621	Condenser	.02 Mfd., 200 Volt	77Y	-37966	On-off	Switch
31A	W -35936	Condenser	.05 Mfd., 200 Volt	77Z	-37966	On-off	Switch
31B	W -35936	Condenser	.05 Mfd., 200 Volt	78	G31 -24628	Transformer	Audio
31C	W -35936	Condenser	.05 Mfd., 200 Volt	79	G36 -24628	Transformer	Base Compensator
32	W -32380	Condenser	.05 Mfd., 200 Volt	80	G1 -37900	Transformer	60 Cycle, 110 V. Power
33A	W -27216	Condenser	.05 Mfd., 200 Volt	81	G2 -37900	Transformer	Universal Power
33B	W -27216	Condenser	.05 Mfd., 200 Volt	82	G35 -24628	Transformer	Push-pull Output
34A	W -32780	Condenser	.05 Mfd., 400 Volt	83	W -37962	Transformer	Tuning Ind.
34B	W -32780	Condenser	.05 Mfd., 400 Volt	84Z	-37907	Volume	Shadow-graph
35	W -23615	Condenser	.05 Mfd., 400 Volt	84Y	-37907	Control	1st A. F. Grid
36	W -37732	Condenser	.3 Mfd., 160 Volt	85	G160 -36400	Socket	Driver Grid
37	W -37954	Condenser	Single Ant. Trimmer	86	-27086	Resistor	Type 6Q7
38Z	W -37986	Condenser	Double Section Osc. Trimmer	87	W -37983	Resistor	6400 Ohms
38Y	W -37986	Condenser	R. F. Trimmer	88	W -33270	Condenser	.017 Mfd., 200 Volt
39AZ	W -37891	Condenser	Ant. Triple Sec. H. F. Trimmer	89	-27121	Resistor	.001 Mfd., 400 Volt
39AY	W -37891	Condenser	Pol. Trimmer	90	-31018	Resistor	5,000 Ohms, 1/4 Watt
39AX	W -37891	Condenser	B. C. Trimmer		-37945	Dial Assem.	200,000 Ohms, 1/4 Watt
39BZ	W -37891	Condenser	R. F. Triple Sec. Pol. Trimmer		-40531	Drive	Complete
39BY	W -37891	Condenser	H. F. Trimmer		-40195	Belt	Flex. Drive
39BX	W -37891	Condenser	B. C. Trimmer		-40195	Coupling	Celluloid Dial
40Z	W -35951	Condenser	H. F. Trimmer		-37968	Face	Glass Dial
40Y	W -35951	Condenser	Triple Sec. Osc. Pol. Trimmer		-40485	Pointer	Long
40X	W -35951	Condenser	B. C. Trimmer		-40484	Pointer	Short
41	W -37917	Condenser	L. F. Osc., Series Trimmer		-40486	Screw	Pointer Retaining
42Z	W -37874	Condenser	H. F. Osc., Series Trimmer		B -37898	Ring	Glass
42Y	W -37874	Condenser	Pol. Osc. Series Trimmer		B -37897	Ring	Lens Retaining
43Z	G47 -33002	Condenser	3 Section Var. Tuning		C -37894	Escutcheon	
43Y	G47 -33002	Condenser	3 Section Var. Tuning		B -37896	Spring	Escutcheon Retaining
43X	G47 -33002	Condenser	3 Section Var. Tuning		W -37117	Foot	Rubber Mgt.
44	B -33906-A	Cable	Power Supply		W -22334	Cable	Indicator Control
45	G1 -37918	Cable	Speaker		W -37339	Knob	3 required
46	-21453	Resistor	40,000 Ohms, 1/4 W.		W -40192	Knob	2 required
47A	-35600	Resistor	100,000 Ohms, 1/4 W. Insul.		W -37909	Pulley	Band Selector Switch
47B	-35600	Resistor	100,000 Ohms, 1/4 W. Insul.		G2 -37965	Socket	Dial Light Assem.
48	-None				G3 -37965	Socket	Indicator Light
49A	-35601	Resistor	300,000 Ohms, 1/4 W. Insul.				

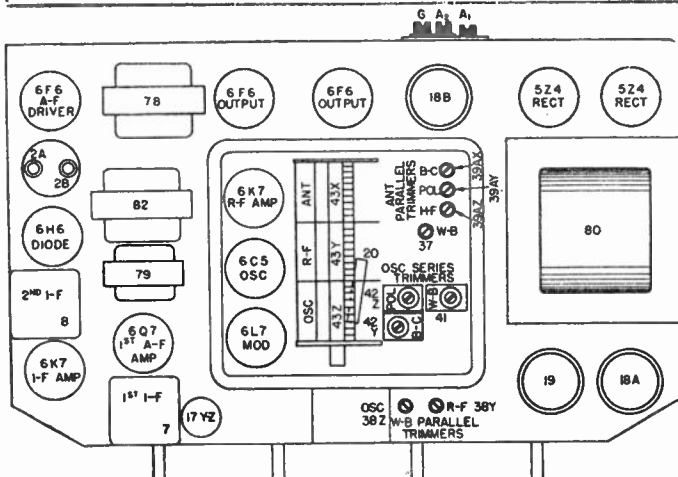


Fig. 2. Top View 1155

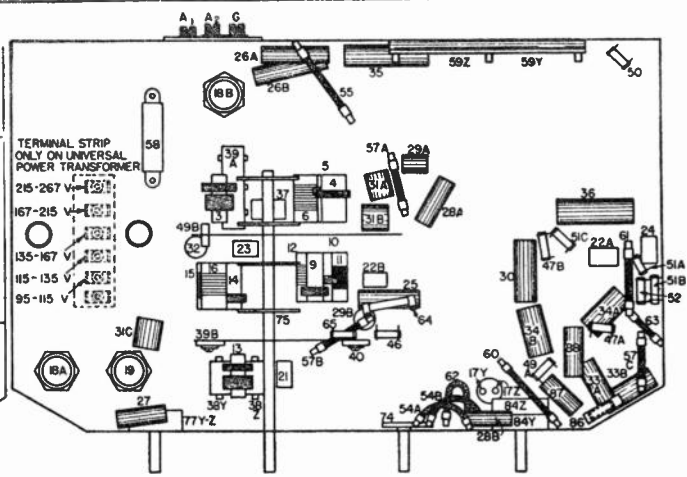


Fig. 3. Bottom View 1155

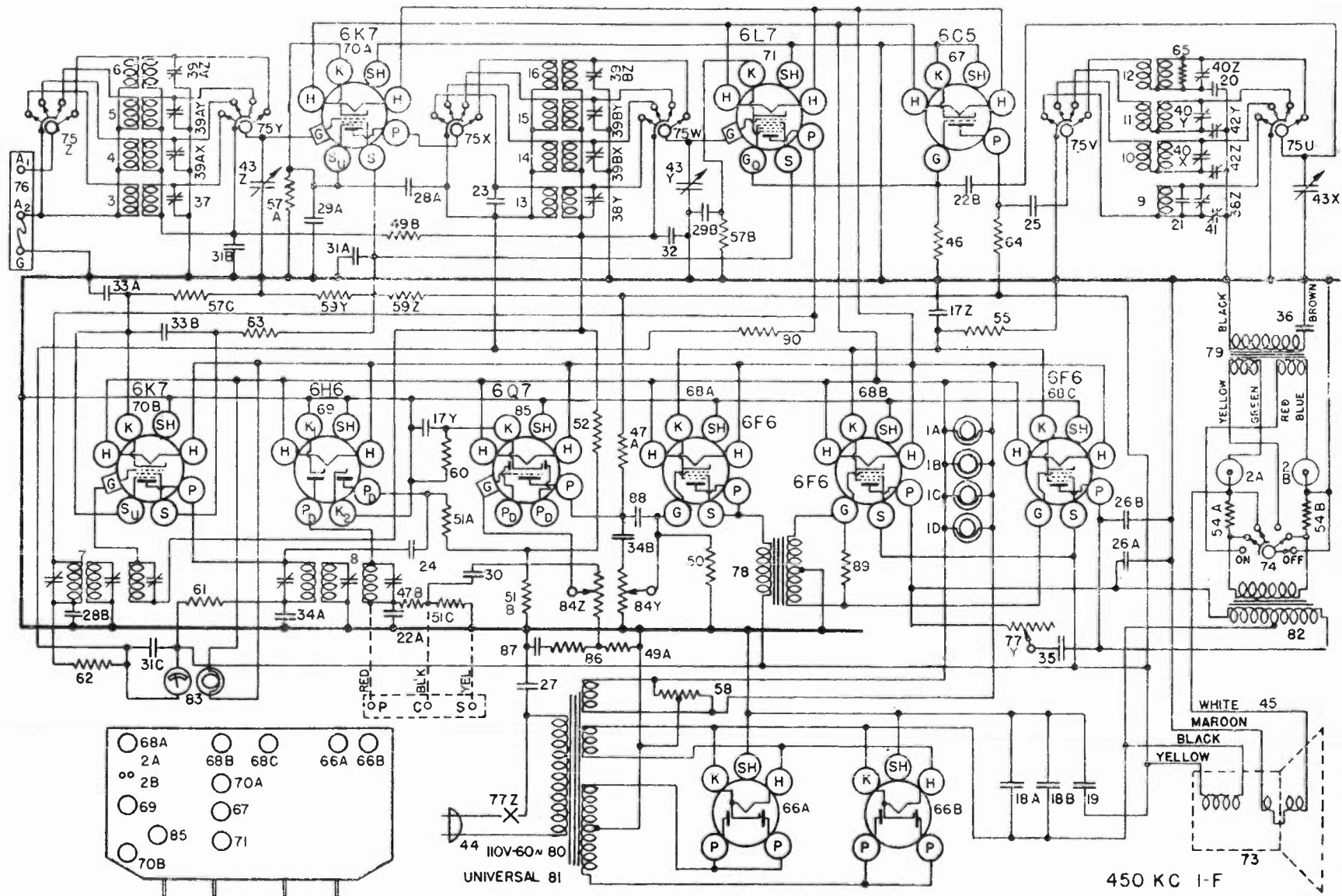


FIG. 1—WIRING DIAGRAM—MODEL 1155



TUBE SOCKET VOLTAGE READINGS										
Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	Su	K	Ga	Go	
6K7	R-F Amplifier	6.3	100	—	110	3.3	3.3	—	—	—
6A8	Oscillator-Modulator	6.3	250	—	110	—	3.8	175	-4 to -12	—
6J7	AFC Control	6.3	160	—	140	6.3	6.3	—	—	—
6K7	I-F Amplifier	6.3	240	—	108	3.0	3.0	—	—	—
6H6	AFC Detector	6.3	—	—	—	—	—	—	—	—
6R7	Diode and 1st A-F Amplifier	6.3	75	—	—	—	2.3	—	—	—
6C5	A-F Driver	6.3	170	—	—	—	5.2	—	—	—
6N6	(2) Output	6.3	250	370	—	—	6.0	—	—	—
SZ4	Rectifier	5.0	—	—	—	—	370	—	—	—
W42419A	Tuning Tube	—	100-170	170	—	—	—	—	—	—
W41187	Auto-Expressionator Tube	—	Varies with power output.		—	—	—	—	—	—

Voltage drop across speaker field 120 volts.  
 Power output approximately 20 watts.  
 Power consumption approximately 123 watts.  
 All readings taken on 117.5 volt power supply.

**TUNING I-F AMPLIFIER**

- (a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic to P2 of the other 6N6 Output tube.
- (b) Check the 6J7 cathode bias which should be approximately 6.5 volts with no signal applied.
- (c) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the "C" terminal of the receiver chassis.
- (d) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control all the way to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.
- (e) Set the signal generator to 450 kilocycles.
- (f) Adjust the middle trimmer and then the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. Caution: do not attempt to adjust the top trimmer at this time. ALWAYS USE THE LOWEST GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).
- (i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum reading on the output meter.
- (j) Adjust the middle trimmer of the 1st I-F transformer by closing until maximum reading is obtained on the output meter.
- (k) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and recheck the adjustment of the bottom trimmer of the 1st I-F transformer.
- (l) To adjust the AFC system it will be necessary to transfer the output lead of the signal generator back to the top cap of the 6K7 I-F amplifier tube. The .02 mf. condenser should still be connected in series with this lead.
- (m) Insert a 0.5 milliammeter in series with the cathode circuit of the 6J7 tube and with a strong 450 kilocycle signal from the signal generator, the reading of the cathode current should be recorded.

(n) Turn the Phantom Control to the MYSTIC HAND position and without changing the output of the signal generator, adjust the top trimmer condenser of the 2nd I-F transformer so that the reading of the 0.5 milliammeter is the same as was recorded with the Phantom Control in the NORMAL position. This value of current will be obtained with the trimmer closed, with the trimmer open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used. An insulated screw driver should be used in adjusting the AFC trimmer condenser.

(o) As a final check on the AFC adjustment, disconnect the test equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC "ON" and "OFF". If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 10 kilocycles of the station selector setting with AFC "ON", the AFC is properly aligned.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers, "Osc. Series"—Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

American Broadcast Band (BLUE)	Shunt Alignment	Series Alignment
Police and Amateur Band (RED)	1,406 Kilocycles	600 Kilocycles
High Frequency Band (GREEN)	5,000 Kilocycles	2000 Kilocycles
	18,000 Kilocycles	

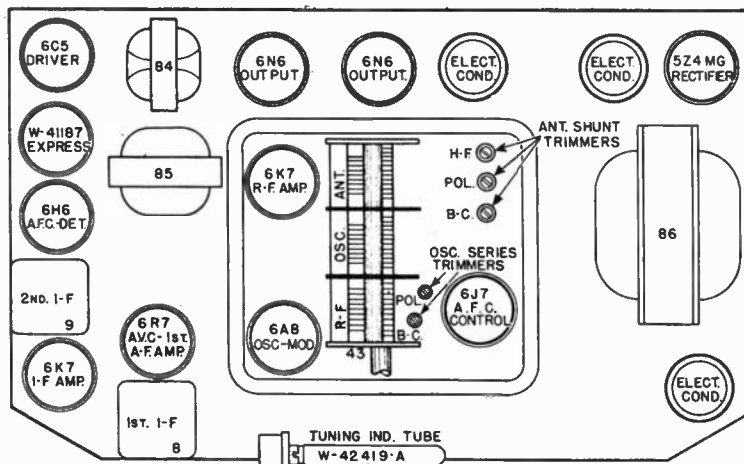


Fig. 2 Top View—1216

PARTS LIST—MODEL 1216

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light Bulb	45	G 2-37918	Speaker Cable
2	G 3-37965	D. L. Socket	46	-35760	Resistor, 20,000 Ohm 1/2W.
3	W -4057	D. L. Shield	47	-33390	Resistor, 30,000 Ohm 1/2W.
4	W -41187	Auto Express. Tube	48AB	-35928	Resistor, 60,000 Ohm 1/2W.
5	W -42119A	Neon Tuning Indi. Tube	49	-34019	Resistor, 75,000 Ohm 1/2W.
6	G 2-42584	Neon Socket Assembly	50ABC	-35600	Resistor, 100,000 Ohm 1/2W.
7	W -42589	Neon Tube Cover	51	-35930	Resistor, 200,000 Ohm 1/2W.
8	W -42592	Cover Gasket, (N. T.)	52	-35601	Resistor, 300,000 Ohm 1/2W.
9	None	None	53AB	-36321	Resistor, 400,000 Ohm 1/2W.
10	G 94-32000	Antenna Coil, B. C. B.	54AB	-36322	Resistor, 500,000 Ohm 1/2W.
11	G108-32000	Antenna Coil, Pol. B.	55	-36176	Resistor, 1.3 Megohm 1/2W.
12	G107-32000	Antenna Coil, H. F. B.	56	-21454	Resistor, 1. Megohm 1/2W.
13	G 90-32004	1st I-F Assembly	57	-36688	Resistor, 3. Megohm 1/2W.
14	G126-32004	2nd I-F Assembly	58	W -32961	Resistor, 100 Ohm 3W. Flex.
15	G 97-32002	Osc. Coil, R. C. B.	59	W -25937	Resistor, 275 Ohm 1/2W. Flex.
16	G 96-32002	Osc. Coil, Pol. B.	60AB	W -28589	Resistor, 350 Ohm 1/2W. Flex.
17	G 95-32002	Osc. Coil, H. F. P.	61	W -22514	Resistor, 750 Ohm 1/2W. Flex.
18	G 68-32001	R-F. Coil, B. C. B.	62AB	W -21452	Resistor, 1100 Ohm 1/2W. Flex.
19	G 75-32001	R-F. Coil, Pol. B.	63	W -23013	Resistor, 2000 Ohm 1 1/2W. Flex.
20	G 74-32001	R-F. Coil, H. F. P.	64	W -23907	Resistor, 750 Ohm 1 1/2W. Flex.
21	W -37778	Condenser, .12 Mf. 25V.	65	-4921C	Resistor, 10,000 Ohm 1W.
22	W -36055	Condenser, .12 Mf. 25V.	66	-36952	Resistor, 30,000 Ohm 1W.
23	18AB W -42386	Condenser, .20 Mf. 300V.	67	W -42516	Resistor, 20,000 Ohm 1W.
24	G 18-34000	Condenser, 5600 Mmf.	68Z		Resistor, 4,000 Ohm
25	G 5-34002	Condenser, .00005 Mf. 200V.	68Y	W -41966	Resistor, 1,000 Ohm (Candohm)
26	G 10-34002	Condenser, .00005 Mf. 300V.	68X		Resistor, 3,000 Ohm
27	G 2-34002	Condenser, .0001 Mf. 200V.	68W		(Resistor, 200 Ohm)
28	G 6-34002	Condenser, .00025 Mf. 200V.	69	G154-36400	Socket Type, 5Z4
29	G 1-34005	Condenser, .00025 Mf. 300V.	70	G155-36400	Socket Type, 6H6
30	G 3-34002	Condenser, .0005 Mf. 200V.	71AB	G151-36400	Socket Type, 6K7
31	W -35758	Condenser, .008 Mf. 400V.	72	G156-36400	Socket Type, 6A8
32	W -41461	Condenser, .0014 Mf. 200V.	73	G164-36400	Socket Type, 6R7
33	W -30805	Condenser, .01 Mf. 400V.	74	G157-36400	Socket Type, 6J7
34	None	NONE	75AB	G165-36400	Socket Type, 6N6
35	W -36541	Condenser, .02 Mf. 160V.	76AB	G152-36400	Socket Type, 6C5
36	W -28621	Condenser, .02 Mf. 200V.	77	G167-36400	Socket Type, Auto Expressionator
37	W -41209	Condenser, .048 Mf. 200V.	78		See Item 3
38	W -35936	Condenser, .05 Mf. 200V.	79	649CJ4 "M"	Speaker, Spec. 1-D-668
39	W -32380	Condenser, .05 Mf. 200V.	80	-40701	Cone Assembly for above Spk.
40	W -27216	Condenser, .05 Mf. 200V.	81	-40699	Field Coil for above Spk.
41	W -32780B	Condenser, .05 Mf. 400V.	82	W -41029A	Phantom Control Switch
42	W -43094	Condenser, .011 Mf. 160V.	83	C -41235A	Band Selector Switch
43	W -22688	Condenser, .1 Mf. 200V.	84	G 27-26719	Ant. and Gnd. Terminal Assembly
44	W -42554	Condenser, .12 Mf. 160V.	85	W -42579	Resistor, 245 Ohm 1/2W. Flex.
45	W -41218	Pol. Osc. Series Trimmer	86	G 1-37395	A-F Driver Transformer
46	W -37891	3 Section Trimmer (Shunt)	87	G 60-24628	Out-Put Transformer
47	W -35951	3 Section Trimmer (Shunt)	88Z	-42557	Pwr. Trans., 60 Cy. 110V.
48	G 47-33002	3 Section Var. Tuning Cond. Gang	88Y	-43088	Pwr. Trans., 50 Cy. 110V.
49	MG12 -42411	Dial Drive Assembly	89	-43089	Pwr. Trans., 50 Cy. 220V.
50	C -42421	Dial Glass (Calibrated)	90	-43008	Pwr. Trans., 25 Cy. 110V.
51	W -42325A	Drive Unit	91	-43170	Pwr. Trans., 25 Cy. 220V.
52	W -41144	Dial Hand (Long)	92	-41375	See Item 86
53	W -42180	Dial Hand (Short)	B -42295A	-41375	Vol. Cont., 3 Meg.
54	W -40486	Hand Mtg. Screw	G101-34403	-41375	Vol. Cont., 1 Meg.
55	E -13648	R. H. Indic. Flipper	W -6705	-41375	Fidelity Cont. and Line Switch
56	E -13647	L. H. Indic. Flipper	W -24049A	-41375	Neutralizing Cond. Assembly
57	W -42308	Flipper Pulley	C -43134	-41375	Resistor, 3500 Ohm 1W.
58	W -43081	L. H. Flipper Cont. Cable	C -42043	-41375	Condenser, .1 Mf. 200V.
59	W -43080	R. H. Flipper Cont. Cable	C -42044	-41375	Escutcheon
60	W -40638	Indi. Cont. Cable	D -30	-41375	Escutcheon Gasket
61	W -41157	Drive Belt	W -37339	-41375	Escutcheon Lens
62	W -23877	Flex. Coupling	W -40192B	-41375	Screws Escut. Mtg.
63	W -37909A	Band Sel. Pulley	W -42490	-41375	Knob, V. C. and Station Selector
64	B -33906A	Power Cord and Plug	W -36117	-41375	Knob, Bd. Sel. and Phantom Cont.
					Knob, Fid. Cont.
					Rubber Mtg. Feet
					Cabinet

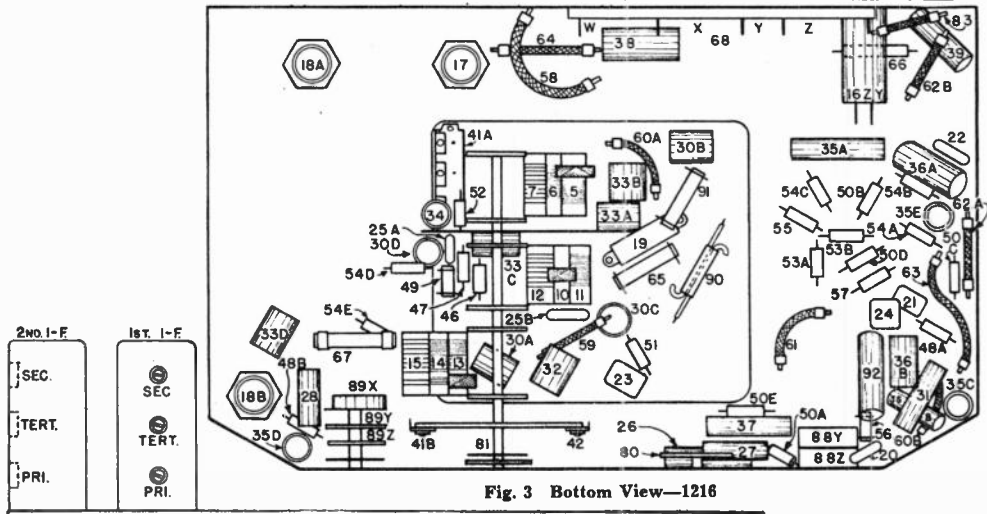


Fig. 3 Bottom View—1216

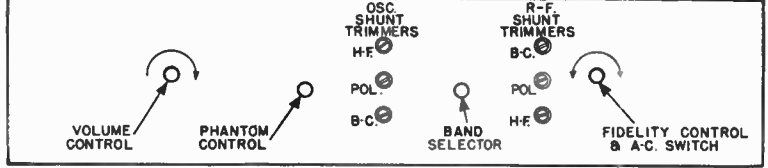


Fig. 4 Front View—1216



For Alignment Procedure, See Page 483

TUBE SOCKET VOLTAGE READINGS

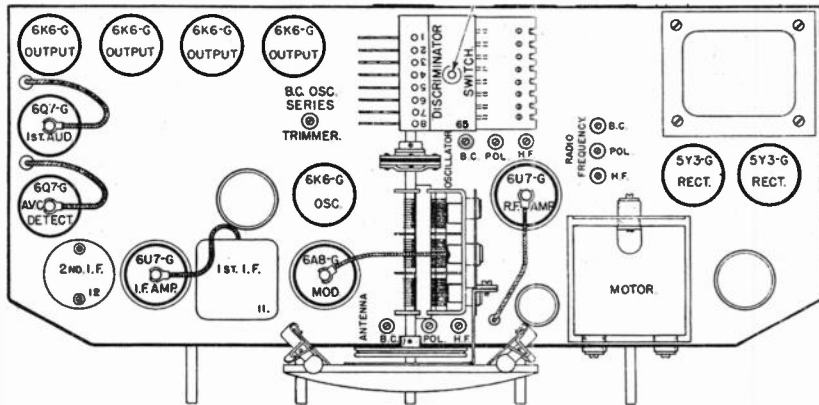
Tube	Function	H	P	S	Su	K	Go	Ga
6U7G	R. F. Amplifier	6.3	255	95	0	0	—	—
6A8G	Modulator	6.3	255	95	—	0	95	95
6K6G	Oscillator	6.3	125	125	—	0	—	—
6U7G	I. F. Amplifier	6.3	255	95	3	3	—	—
6Q7G	Det., AVC & "Squelch"	6.3	0	—	—	0	—	—
6Q7G	1st A. F. Amplifier	6.3	175	—	—	0	—	—
6K6G	(4) Output	6.2	245	255	—	—	22	—
5Y3G	(2) Rectifier	5.0	—	—	—	—	255	—

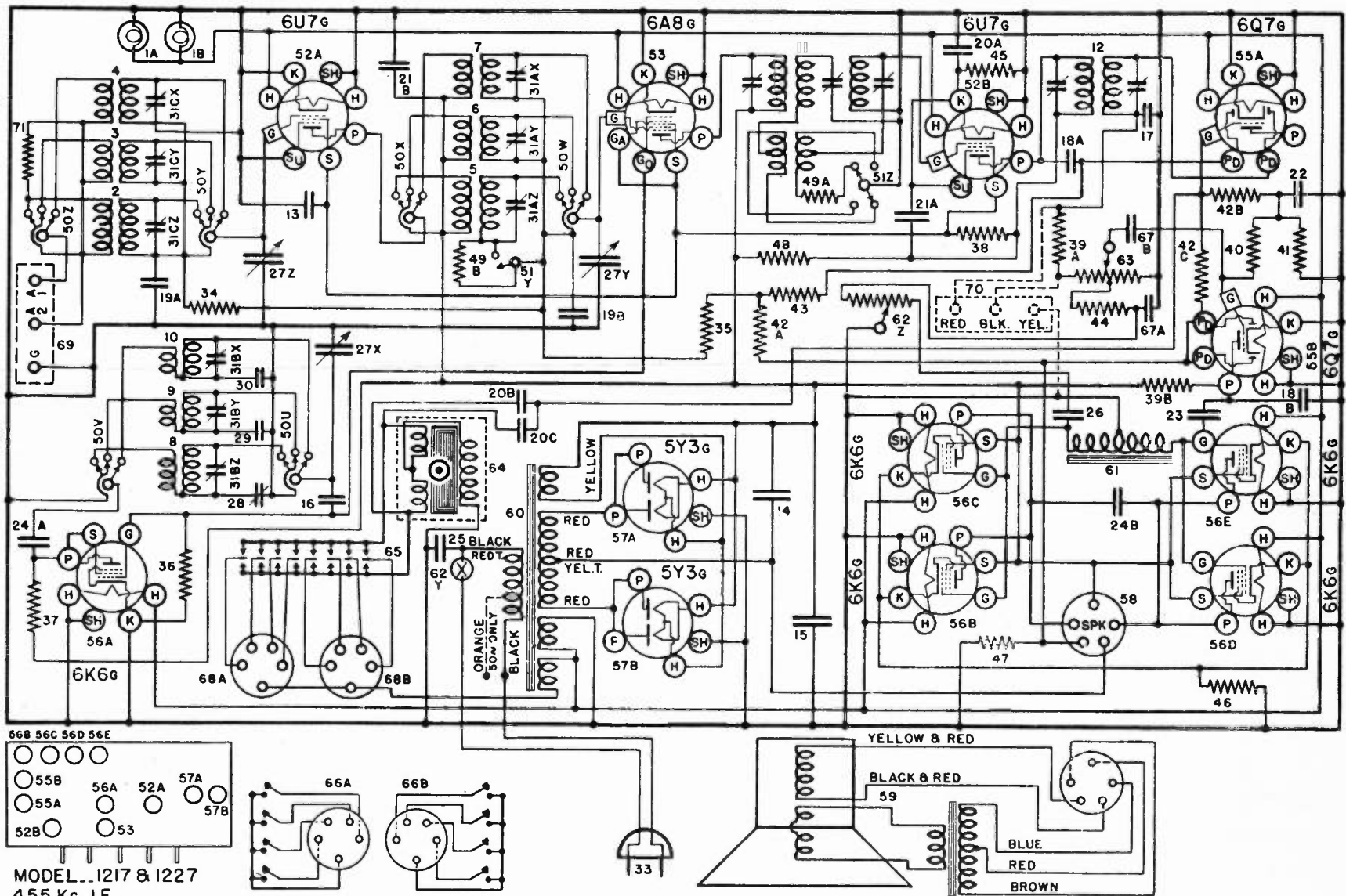
Item No.		Part No.	Description	Item No.	Part No.	Description	
1AB	W	43567	Dial Light Bulb	57AB	G173-36400	Socket, Type 5Y3	
	G8	45308	Dial Light Socket Assy.	58	G103-28807	Socket Speaker	
2	G145	32000	Ant. Coil, B-C.	W	10911	Tube Shield	
3	G146	32000	Ant. Coil, Pol.	59	668RP18"AT"	Speaker, Mtg. Spec. 1-1)-1134	
4	G147	32000	Ant. Coil, H-F.		15180	V. C. and Cone Assy.	
5	G94	32001	R-F. Coil, B-C.		15181	Field Coil (450 Ohms-125 M. A.)	
6	G86	32001	R-F. Coil, Pol.		15182	Output Trans.	
7	G96	32001	R-F. Coil, H-F.		1682	Speaker Plug	
8	G148	32002	Osc. Coil, B-C.		13680	Cardboard Ring—Cone Mtg.	
9	G149	32002	Osc. Coil, Pol.	60	44705	Power Trans., 110 V. 60 Cy.	
10	G150	32002	Osc. Coil, H-F.		44793	Power Trans., 110 V. 50 Cy.	
11	G161	32004	1st I-F. Assy.		4791	Power Trans., 110 V. 25 Cy.	
12	G166	32004	2nd I-F. Assy.		4794	Power Trans., 250 V. 50 Cy.	
13	W	41672	Condenser, 40 Mf. 125 V.		11792	Power Trans., 250 V. 25 Cy.	
14	W	44054	Condenser, 30 Mf. 350 V.	61	G20	Audio Input Choke	
15	W	36057B	Condenser, 40 Mf. 300 V. (1217 only)	62	44701A	Tone Control (1 Mtg.) and Line Switch	
15	W	44438A	Condenser, 40 Mf. 300 V. (1227 only)	63	41773	Volume Control (1 Mtg. Tap-275,000 Ohm)	
16	G1	44886	Condenser, Term. Compensating	64	45168	Motor—1217 only (50-60 Cy.)	
17	GS	41002	Condenser, .00005 Mf. Molded		45169	Motor—1227 only (50-60 Cy.)	
18A	G1	34002	Condenser, .00025 Mf. Molded	W	45165	Mtg. Foot—Motor	
18B	G1	34002	Condenser, .00025 Mf. Molded	W	45164	Bracket—Motor Mtg.	
19A	W	35936	Condenser, .05 Mf. 200 V.	G1	44628	Discriminator Switch Assy.	
19B	W	35936	Condenser, .05 Mf. 200 V.	W	44898	Pin. Switch Adjust.	
20A	W	28621	Condenser, .02 Mf. 200 V.	W	41877	Cable and Plug—Push Button	
20B	W	28621	Condenser, .02 Mf. 200 V.	W	28619	Condenser, .006 Mf. 200 V.	
20C	W	28621	Condenser, .02 Mf. 200 V.	67B	W	28619	Condenser, .006 Mf. 200 V.
21A	W	32378	Condenser, .01 Mf. 400 V.	68AB	G16	28807	Socket—Push Button Plug
21B	W	32378	Condenser, .01 Mf. 400 V.	G27	28719	Ant. and Gnd. Terminal Assy.	
22	W	28910A	Condenser, .25 Mf. 200 V.	69	W	28719	Ant. and Gnd. Terminal Assy.
23	W	24049C	Condenser, .1 Mf. 200 V.	70	G37	28719	Phone Terminal Assy.
24A	W	35139	Condenser, .004 Mf. 400 V.	71	W	22198	Resistor, 20,000 Ohm 1/2 W. Carb.
24B	W	35139	Condenser, .004 Mf. 400 V.		7R	—	Cabinet (1227 only)
25	W	30805	Condenser, .01 Mf. 400 V.		7PF	—	Cabinet (1217 only)
26	W	37968	Condenser, .017 Mf. 400 V.	W	43552	Spk. Plug Clamp	
27	CS8	33002	3 Section Var. Tun. Condenser	W	43553	Rubber Mtg. Foot (5-1217) (2-1227)	
	B	44815B	Dial Face (Glass)	B	44877B	Escutcheon (Dial)	
	B	44146B	Dial Mask (Metal)	W	44724	Extruded Rub. Spacer—Brkt. Mtg. 1227	
	C	44814A	Dial Support Bracket	B	45477	Escutcheon (2 Req.) Push Button	
	W	45417	Ring—Dial Glass Support	B	44876A	Push Button Switch only	
	W	44127	Dial Hand (Pointer)	W	44877A	Push Button Cable	
	W	40486	Screw (Hand Mtg.)	W	44871A	Push Button (1217)	
	G1	41582	Pulley and Hub Assy. (Drive Cord)	W	44308B	Knob—V. Cont.—Tuning (1227)	
	W	41582	Drive Cord (23 in.)	W	44426A	Knob—T. Cont.—Loc. Dist. (1227)	
	W	44908	Idle Stud	W	44751A	Knob—Band Sel. (1227)	
	W	44989	Spring—Drive Cord Tension	W	45105	Knob—V. Cont.—Tuning (1217)	
	W	44907A	Idle Pulley	W	45104	Knob—T. Cont.—Loc. Dist. (1217)	
	W	45448	Drive Belt	W	45103A	Knob—Band Sel. (1217)	
	W	45449	Friction Tubing—Motor Shaft	W	44875	Celluloid Cover	
	W	40769	Variable E-C Osc. Series Trimmer (.00052 Mf.)	W	44802	Station Call Letter Sheet	
28	G23	34000	Pol. Osc. Fixed Series Condenser (.00156 Mf.)	C	44401	Chassis Mtg. Bracket (1227)	
	G24	34000	H-F. Osc. Fixed Series Condenser (.005525 Mf.)		7662	Screws—Brkt. Mtg. (1227)	
29	W	35951A	3 Section Shunt Trimmer Assy.				
30	B	33906A	Power Cord and Plug				
31	W	35930	Resistor, 200,000 Ohm 1/2 W. Ins.				
32	W	34883	Resistor, 2 Megohm 1/2 W. Carb.				
33	W	21237A	Resistor, 60,000 Ohm 1/2 W. Carb.				
34	W	41008	Resistor, 10,000 Ohm 2 W. Carb.				
35	W	23616	Resistor, 15,000 Ohm 1 W. Carb.				
36	W	35600	Resistor, 100,000 Ohm 1/2 W. Ins.				
37	W	35600	Resistor, 100,000 Ohm 1/2 W. Ins.				
38	W	37472	Resistor, 50,000 Ohm 1/2 W. Carb.				
39A	W	28380	Resistor, 330 Ohm 1 W. Flex.				
39B	W	44456	Resistor, 250 Ohm 3 W. Flex.				
40	W	37830	Resistor, 21 Ohm 1/2 W. Flex.				
41	W	23013	Resistor, 2,000 Ohm 1/2 W. Flex.				
42A	W	42401B	Resistor, 99 Ohm 1/2 W. W. Ins.				
42B	W	42401B	Resistor, 99 Ohm 1/2 W. W. Ins.				
42C	W	44532A	Band Selector Switch				
43	W	44771	Local-Distance Switch				
44	G171	36400	Socket, Type 6U7				
45	G156	36400	Socket, Type 6AB				
46	G160	36400	Socket, Type 6Q7				
47	G172	36400	Socket, Type 6K6				

NON-INTERLOCKING PUSH BUTTONS		
Part No.	Description	
G2	45228	Push Button Assy. Complete (2) (1217)
B	44876A	Push Button Switch only (1217)
W	44877A	Push Button Cable and Plug only (1217)
W	45171	Push Button only (1217)
G1	45228	Push Button Assy. Complete (1227)
B	4487611	Push Button Switch only (1227)
W	44877A	Push Button Cable and Plug only (1227)
W	44871A	Push Button only (1227)
W	4487311	Push Button Escutcheon (2) (1217 and 1227)

INTERLOCKING PUSH BUTTONS		
Part No.	Description	
G1	45228	R. H. Push Button Assy. (1) (1217)
B	45177	Push Button Escutcheon R. H.
G5	45228	L. H. Push Button Assy. (1) (1217)
W	4487311	Push Button Escutcheon L. H.
W	15178	Trip Bar Connecting Link (1) (1217, 1227)
R	77	Screw—Trip Bar Mtg. (1217 and 1227)
W	44877A	P. B. Cable and Plug (1217 and 1227)
B	45175	R. H. Push Button Switch only (1217, 1227)
B	45176	L. H. Push Button Switch only (1217, 1227)
W	45171A	Push Button only (8) (1217)
G6	45228	R. H. Push Button Assy. (1) (1227)
G7	45228	L. H. Push Button Assy. (1) (1227)
W	44871A	Push Button only (8) (1227)
W	44875	Celluloid Covers (8) (1217 and 1227)
W	45183	Shock Pad—P. B. Sw. (8) (1217 and 1227)





MODELS 1217, 1227, 1228

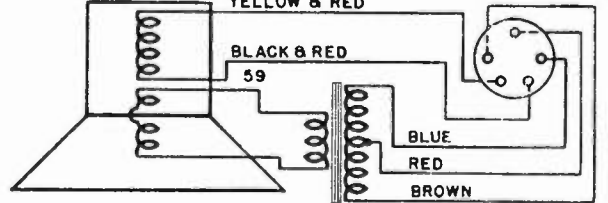
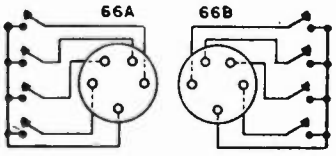
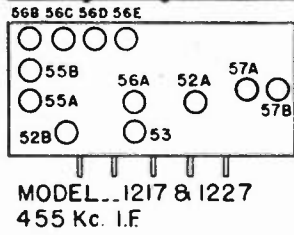


FIG. 1—WIRING DIAGRAM—MODELS 1217 and 1227 and 1228

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6K7	R-F Amplifier	6.3	238	105	2.5	2.5	—	—
6A8	Oscillator-Modulator	6.3	235	105	2.5	2.5	170	5 to 12
6J7	A. F. C. Control	6.3	170	105	—	1.8	—	—
6K7	Singal I-F Amplifier	6.3	220	100	3.0	3.0	—	—
6K7	AFC AVC I-F Amplifier	6.3	220	100	3.0	3.0	—	—
6H6	AFC Detector	6.3	—	—	—	—	—	—
6R7	Diode 1st A-F Amplifier	6.3	0	0	—	—	—	—
6C5	A-F Driver	6.3	80	—	—	2.0	—	—
6N6	(2) Output	6.3	220	—	—	6.8	—	—
5Z4	(2) Rectifier	6.3	350	240	—	2.6	—	—
Phantom Conductor Tube — Varies with power output.		4.6	—	—	—	348	—	—

Voltage drop across speaker field 108 volts.

Power Output approximately 17 watts.

Power Consumption approximately 130 watts.

All readings taken on 117.5 volt power supply.

## ALIGNMENT PROCEDURE

This model receiver should be turned-on and allowed to "warm-up" for about 15 minutes before aligning its circuits.

It is a High Fidelity receiver and in order to secure maximum performance the alignment should be done with precision instruments. The alignment condensers should not be readjusted just to determine if they are properly tuned. Fig. 5, shows the selectivity curve of a receiver whose I-F amplifier was slightly mistuned while Fig. 6, shows a curve made from actual measurements of a receiver employing a triple-tuned I-F amplifier which was properly aligned with the use of a FREQUENCY MODULATED R-F signal generator and an oscilloscope.

The alignment of the AFC circuit may be checked by means of a modulated signal generator and output meter as follows:

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic—to P2 of the other 6N6 Output tube.

(b) Connect the output of the signal generator through a .00025 mf. condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.

(c) Rotate the Phantom Control to the left-hand position (NORMAL).

(d) Adjust the frequency of the signal generator in the region of 450 kilocycles for maximum reading on the output meter.

(e) Without altering the connections or adjustments of the signal generator or output meter connect an antenna to the antenna terminal "A1" and tune-in a local broadcasting station. Turn off modulation of signal generator. Adjust station selector slightly for zero beat.

(f) Rotate the Phantom Control to its middle position and listen to the beat note. If the note is less than 200 cycles, or the equivalent of some tone below middle C on the piano, the AFC alignment is satisfactory.

(g) If the beat note is higher than middle C realignment is necessary.

(h) In cases where the beat note is not more than about two octaves above middle C or from 1000 to 1500 cycles the AFC circuit may be aligned for zero beat by making a slight adjustment of the rear trimmer condenser on the AFC I-F transformer (Fig. 2, Item No. 8). This circuit is very critical and a slight adjustment will produce a great change in the beat note.

(i) Where the AFC is considerably out of alignment as evidenced by a beat note of higher than 1500 cycles the standard alignment procedure outlined below should be followed.

## Tuning I-F Amplifier.

The I-F amplifier employs two triple-tuned signal I-F transformers and one double-tuned AFC I-F transformer.

## I. Conventional Method.

(a) Connect the output meter and signal generator as outlined above in (a) and (b) except that the signal generator should be connected through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place.

(b) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the fidelity control to its middle position and turn the phantom control to the left (NORMAL).

(c) Set the signal generator to 450 kilocycles.

(d) Close the middle trimmer condenser of the 2nd I-F transformer (Fig. 4, item No. 7) so that it is moderately tight. (Do not force adjustment screw).

(e) Adjust the top trimmer and then the bottom trimmer (Sec. & Pri.) of the 2nd I-F transformer for maximum output. Do not readjust the middle trimmer. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc.-Mod. tube, leaving the tube's grid clip in place.

(g) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw, from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(h) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum output.

(i) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and increase the output of the signal generator if necessary.

(j) Adjust the middle trimmer of the 2nd I-F transformer, by opening, until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

(k) Adjust the middle trimmer of the 1st I-F transformer, by closing, until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

(l) To adjust the AFC system it will be necessary to remove the signal generator lead from the receiver and adjust the 6J7 cathode bias to 4.8 volts by means of the variable control (Illustration No. 73—Fig. 3) in this cathode circuit. The cathode voltage is measured between the cathode terminal and chassis.

(m) Turn the phantom control to the left (NORMAL) and connect the signal output lead through a .02 mf. condenser to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(n) Adjust the signal generator to 450 kilocycles.

(o) Adjust the front trimmer (plate winding) of the AFC I-F transformer for minimum reading on the output meter. It will be necessary to retard the volume control of the receiver in order to prevent AVC action. A fairly strong I-F signal will be required. (An insulated screw driver should be used for aligning the AFC I-F amplifier system).

(p) Insert an 0.5 millimeter in series with the lead to the cathode terminal of the 6J7 socket and note the current reading.

(q) Turn the phantom control to its middle position and increase the output of the signal generator to approximately 100,000 microvolts.

(r) Transfer the output lead of the signal generator from the 6A8 tube to the top cap of the 6K7 AFC I-F amplifier tube, leaving the tube's grid clip in place.

(s) Adjust the rear trimmer of the AFC I-F transformer for the same value of cathode current as obtained in (p) above. This value of current will be obtained with the trimmer closed, with it open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used.

(t) To check on the AFC adjustment, disconnect the equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC ON and OFF. If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 20 kilocycles of the station selector setting with the AFC ON, the AFC is properly aligned. If distortion is noted and the set will not automatically tune-in stations as described, the AFC alignment should be rechecked.

## II. Oscilloscope Method.

(a) Connect the output of a FREQUENCY MODULATED R-F signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the receiver chassis. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows: The binding post marked "GND" should be connected to the receiver chassis and the other binding post should be connected to the plate of the 6R7 tube. (Be sure the oscilloscope is protected from D. C. by connecting a condenser, .1 mf. to .05 mf., in series with the lead connected to the plate of the 6R7 tube).

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control knob to the right (ON), turn the fidelity control to the middle position and turn the phantom control to the left (NORMAL).

(d) Set the signal generator to 450 kilocycles. See instructions supplied with signal generator and oscilloscope.

(e) Close the middle trimmer condenser on the 2nd I-F transformer so that it is moderately tight. (Do not

(for adjustment screw).

(f) Adjust the top trimmer of the 2nd I-F transformer so that the nose of the selectivity curve is centered on the resonance axis (R) of the transparent scale supplied with the oscilloscope.

(g) Adjust the bottom trimmer of the 2nd I-F transformer for maximum amplitude of the selectivity curve on resonance line (R).

(h) Reduce the output of the signal generator and adjust the middle trimmer of the 2nd I-F transformer for maximum amplitude and symmetry of the selectivity curve about the resonance line.

NOTE: Keep the base of the selectivity curve centered on the transparent scale from -15 to +15 and keep the signal generator output as low as possible in order to prevent AVC action in the receiver.

(i) Readjust the bottom trimmer of the 2nd I-F transformer for maximum symmetry and amplitude.

(j) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(k) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(l) Increase the output of the signal generator and adjust the top trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(m) Adjust the bottom trimmer of the 1st I-F transformer for maximum amplitude.

(n) Reduce the output of the signal generator and adjust the middle trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(o) Carefully repeat operations (h), (i) and (m) for more accurate adjustments. (See Fig. 6).

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and the "ANT" trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, 34Z and 34Y — Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

American Broadcast Band (BLUE)  
Police and Amateur Band (RED)  
High Frequency Band (GREEN)

Shunt Alignment	Series Alignment
1,400 Kilocycles	800 Kilocycles
5,000 Kilocycles	2,000 Kilocycles
18,000 Kilocycles	

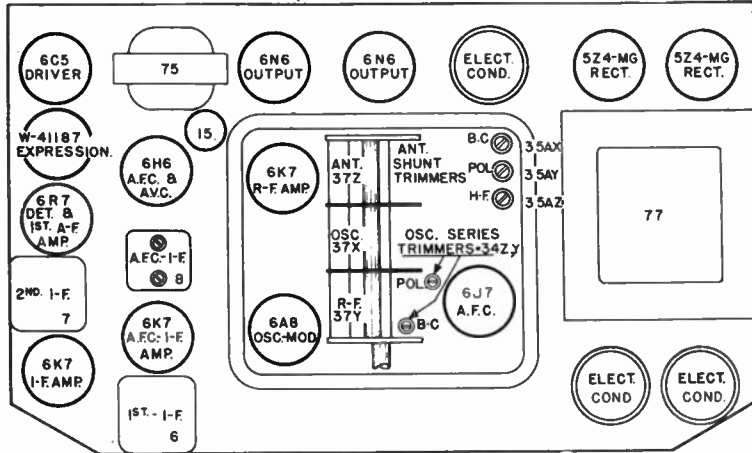


Fig. 2. Top View—1316

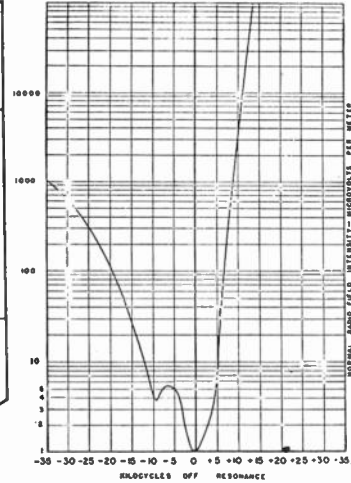


Fig. 5

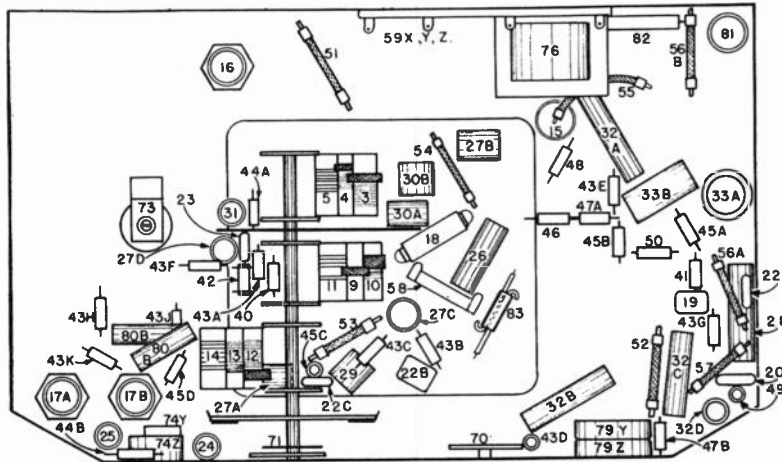


Fig. 3. Bottom View—1316

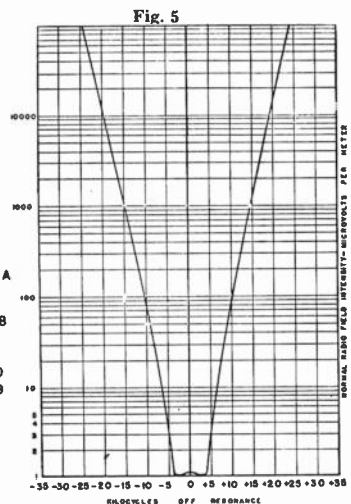


Fig. 6

PARTS LIST—MODEL 1316

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A/B/C	W -37922	Dial Light	43A	To	Resistor 100,000 Ohm 1/4 W. Insulated
	G3 -37965	Light Socket Assembly	43K		
	W -40570	Light Shield	44A	-35601	Resistor 300,000 Ohm 1/4 W. Insulated
2	W -41187	Phantom Conductor Tube	44B	-35601	Resistor 300,000 Ohm 1/4 W. Insulated
3	G94 -32000	Ant. Coil -B-C-B	45A	-36322	Resistor 500,000 Ohm 1/4 W. Insulated
4	G10R -32000	Ant. Coil -H-F-B	45B	-36322	Resistor 500,000 Ohm 1/4 W. Insulated
5	G107 -32000	1st I-F Assembly	45C	-36322	Resistor 500,000 Ohm 1/4 W. Insulated
6	G107 -32001	2nd I-F Assembly	45D	-36322	Resistor 500,000 Ohm 1/4 W. Insulated
7	G91 -32001	A-F-C. I-F Assembly	46	-37590	Resistor 750,000 Ohm 1/4 W. Insulated
8	G10R -32004	A-F-C. I-F Assembly	47A	-35602	Resistor 1. Megohm 1/4 W. Insulated
9	G97 -32002	Osc. Coil B-C-B	47B	-35602	Resistor 1. Megohm 1/4 W. Insulated
10	G96 -32002	Osc. Coil Pol.-B	48	-36176	Resistor 1.3 Megohm 1/4 W. Insulated
11	G95 -32002	Osc. Coil H-F-B	49	NONE	
12	G68 -32001	R-F Coil B-C-B	50	-36688	Resistor 3. Megohm 1/4 W. Insulated
13	G75 -32001	R-F Coil Pol.-B	51	W -23012A	Resistor 40 Ohm 3/4 W. Flexible
14	G74 -32001	R-F Coil H-F-B	52	W -21964	Resistor 165 Ohm 1/4 W. Flexible
15Z	W -37632	Condenser 12 Mfd. 25 V. Electrolytic	53	W -28537	Resistor 275 Ohm 1/4 W. Flexible
15Y	W -37632	Condenser 25 Mfd. 25 V. Electrolytic	54	W -28589	Resistor 350 Ohm 1/4 W. Flexible
16	W -36055	Condenser 35 Mfd. 400 V. Electrolytic	55	W -28106	Resistor 500 Ohm 1/4 W. Flexible
17A	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	56A	W -21452	Resistor 1100 Ohm 3/4 W. Flexible
17B	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	56B	W -21452	Resistor 1100 Ohm 3/4 W. Flexible
18	G18 -34000	H-F Osc. Fixed Series Cond. (5600Mmfd)	57	W -23013	Resistor 2000 Ohm 1 1/4 W. Flexible
19	G8 -34002	Condenser .0001 Mfd. (Molded)	58	W -37987	Resistor 15000 Ohm 1W Wire Wound
20	NONE		59Z		4000 Ohm
21	G10 -34002	Condenser .0005 Mfd. (Molded)	59Y	W -41260	4000 Ohm Candohm
22A	G2 -34002	Condenser .001 Mfd. (Molded)	59X		200 Ohm
22B	G2 -34002	Condenser .001 Mfd. (Molded)	60A	G154-36400	Socket Type 5Z4
22C	G2 -34002	Condenser .001 Mfd. (Molded)	60B	G154-36400	Socket Type 5Z4
23	G3 -34002	Condenser .005 Mfd. (Molded)	61	G155-36400	Socket Type 6H6
24	W -25435	Condenser .003 Mfd. 400 V. Tubular	62A	G151-36400	Socket Type 6K7
25	W -38085	Condenser .01 Mfd. 400 V. Tubular	62B	G151-36400	Socket Type 6K7
26	W -37988	Condenser .017 Mfd. 200 V. Tubular	62C	G151-36400	Socket Type 6K7
27A	W -36541	Condenser .02 Mfd. 160 V. Tubular	63	G156-36400	Socket Type 6A8
27B	W -36541	Condenser .02 Mfd. 160 V. Tubular	64	G164-36400	Socket Type 6R7
27C	W -36541	Condenser .02 Mfd. 160 V. Tubular	65	G157-36400	Socket Type 6J7
27D	W -36541	Condenser .02 Mfd. 160 V. Tubular	66A	G165-36400	Socket Type 6N6
28	W -28621	Condenser .02 Mfd. 200 V. Tubular	66B	G165-36400	Socket Type 6N6
29	W -41209	Condenser .048 Mfd. 200 V. Tubular	67	G152-36400	Socket Type 6C5
30A	W -35936	Condenser .05 Mfd. 200 V. Tubular	68	G167-36400	Socket Type 5 prong Plain
30B	W -35936	Condenser .05 Mfd. 200 V. Tubular	69	-41416	Speaker-734-CJ-4
31	W -32380	Condenser .05 Mfd. 200 V. Tubular		-41603	Speaker-Cone Assembly
32A	W -27216	Condenser .05 Mfd. 200 V. Tubular		-41601	Speaker-Field Coil
32B	W -27216	Condenser .05 Mfd. 200 V. Tubular	70	W -41029	Phantom Control
32C	W -27216	Condenser .05 Mfd. 200 V. Tubular	71	C -41235	Band Selector Switch
32D	W -27216	Condenser .05 Mfd. 200 V. Tubular	72	G27 -26719	Ant & Grd. Terminal Assembly
33A	W -32780B	Condenser .05 Mfd. 400 V. Tubular	73	W -41287	A-F-C Bias Control
33B	W -32780B	Condenser .05 Mfd. 400 V. Tubular	74Z		Fidelity Control
34Z	W -41218	B-C Osc Series Condenser (390 Mmf)	74Y	-41300	A-C Switch
34Y	W -41218	Pol. Osc Series Condenser (2000 Mmf.)	75	G2 -37955	Audio Driver Transformer
35	W -37819	3 Section Trim. Assy. (Ant & R-F Shunt)	76	G52 -24628	Audio Output Transformer
36	W -35951	3 Section Trimmer Assy. (Osc. Shunt)	77	G1 -37900	Power Transformer 110 V. 60 Cy.
37	G47 -33002	3 Section Var. Tuning Condenser	78	G2 -37900	Universal Power Transformer
	MG12 -41211	Dial Drive Assembly Complete	79Z		Volume Control 1st A-F Grid
	C -41150	Dial Glass	79Y	-41375B	Volume Control 2nd A-F Grid
	W -41138	Dial Mask	80A	W -41461	Condenser .0014 Mfd. 200 V. Tubular
	W -40804	Cushion, Dial Glass	80B	W -41461	Condenser .0014 Mfd. 200 V. Tubular
	W -41144	Long Pointer	81	W -37732	Condenser .3 Mfd. 160 V. Tubular
	W -41146	Short Pointer	82	-5370A	Resistor 20,000 Ohm 1W. Carbon
	W -40486	Pointer Mtg. Screw	83	G101-34403	1.9 Mmfd. Coupling Condenser
	W -41157	Drive Belt		C -41219	Escutcheon
	W -40638	Indicator Control Cable		B -41233	Escutcheon Retaining Spring
38	B -38906A	Power Cord & Plug		W -40265	Escutcheon Felt
39	G2 -37918	Speaker Cable		B -41232	Dial Lens
40	W -36760	Resistor 20,000 Ohm 1/4 W. Insulated		B -41234	Lens Retaining Spring
41	W -36761	Resistor 40,000 Ohm 1/4 W. Insulated		W -36117	Mounting Foot (Rubber)
42	W -37472	Resistor 50,000 Ohm 1/4 W. carbon		W -37339	Knob (3 used)
				W -40192B	Knob (2 used)

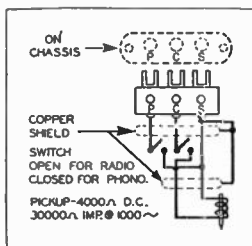


Fig. 7. Phonograph Pickup

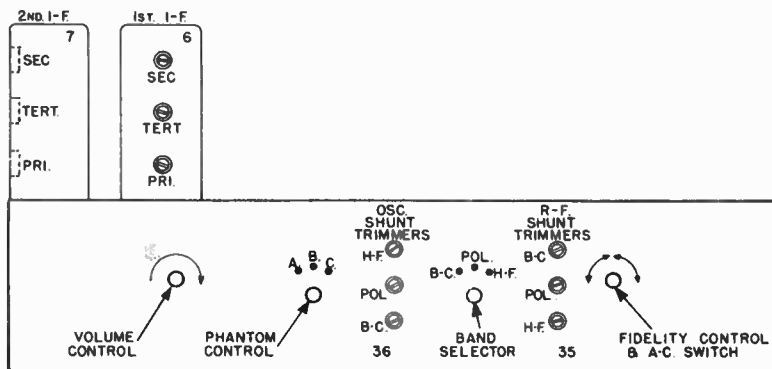


Fig. 4. Front View 1316



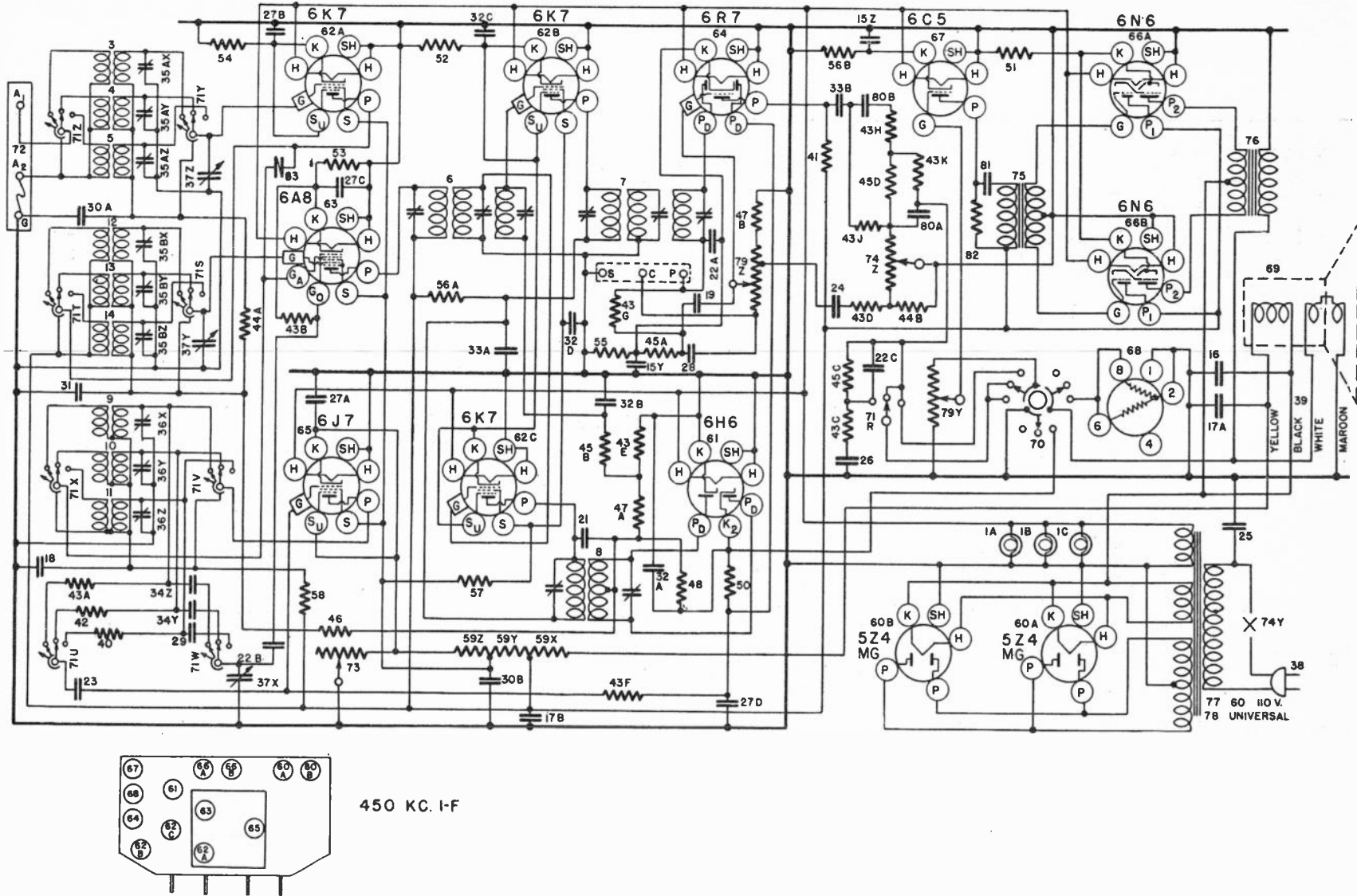


Fig. 1. Circuit Diagram—Model 1316

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	Su	K	Ga	Go
6K7	R-F Amplifier	6.3	235	—	106	2.2	2.2	—	—
6A8	Oscillator-Modulator	6.3	235	—	106	—	3.1	140	-6 to -12
6J7	AFC Control	6.3	140	—	137	6.5	6.5	—	—
6K7	I-F Amplifier	6.3	225	—	100	2.7	2.7	—	—
6H6	AFC Detector	6.3	0	—	—	—	0	—	—
6R7	Diode and 1st A-F Amplifier	6.3	85	—	—	—	2.1	—	—
6C5	A-F Driver	6.3	150	—	—	—	5.0	—	—
6N6	(2) Output	6.3	235	340	—	—	5.2	—	—
6C5	Tuning Indicator Amplifier	6.3	100-200	—	—	—	0	—	—
5Z4	Rectifier	5.0	—	—	—	—	350	—	—
W42419A	Tuning Indicator Tube	—	100-200	150	—	—	0	—	—
W41187	Expander Tube	—	Varies with power output.		—	—	0	—	—

Voltage drop across speaker field 105 volts.  
 Power output approximately 25 watts.  
 Power consumption approximately 135 watts.  
 All readings taken on 117.5 volt power supply.

TUNING I-F AMPLIFIER

This model receiver should be turned-on and allowed to "warm-up" for about 15 minutes before aligning its circuits.

It is a High Fidelity receiver and in order to secure maximum performance the alignment should be done with precision instruments. The alignment condensers should not be readjusted just to determine if they are properly tuned. Fig. 5, shows the selectivity curve of a receiver whose I-F amplifier was slightly mistuned while Fig. 6, shows a curve made from actual measurements of a receiver employing a triple-tuned I-F amplifier which was properly aligned with the use of a FREQUENCY MODULATED R-F signal generator and an oscilloscope.

The alignment of the AFC circuit may be checked by means of a modulated signal generator and output meter as follows:

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic to P2 of the other 6N6 Output tube.

(b) Connect the output of the signal generator through a .0025 mf. condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.

(c) Rotate the Phantom Control to the left-hand position (NORMAL).

(d) Adjust the frequency of the signal generator in the region of 450 kilocycles for maximum reading on the output meter.

(e) Without altering the connections or adjustments of the signal generator or output meter connect an antenna to the antenna terminal "A1" and tune-in a local broadcasting station. Turn off modulation of signal generator. Adjust station selector slightly for zero beat.

(f) Rotate the Phantom Control to the Mystic Hand position and listen to the beat note. If the note is less than 200 cycles, or the equivalent of some tone below middle C on the piano, the AFC alignment is satisfactory.

(g) If the beat note is higher than middle C alignment is necessary.

(h) In cases where the beat note is not more than about two octaves above middle C or from 1000 to 1500 cycles the AFC circuit may be aligned for zero beat by making a slight adjustment of the top trimmer condenser on the 2nd I-F transformer. This circuit is very critical and a slight adjustment will produce a great change in the beat note.

(i) Where the AFC is considerably out of alignment as evidenced by a beat note of higher than 1500 cycles the standard alignment procedure outlined below should be followed.

TUNING I-F AMPLIFIER

I. Conventional Method.

(a) Connect the output meter as outlined above in (a).

(b) Adjust the 6J7 cathode bias to 6.5 volts with no signal applied, by means of the variable control item, No. 83, Fig. 3.

(c) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal-generator to the "G" terminal of the receiver chassis.

(d) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control all the way to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.

(e) Set the signal generator to 450 kilocycles.

(f) Adjust the middle trimmer and then the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. Caution: do not attempt to adjust the top trimmer at this time. ALWAYS USE THE LOWEST GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum reading on the output meter.

(j) Adjust the middle trimmer of the 1st I-F transformer by closing until maximum reading is obtained on the output meter.

(k) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and recheck the adjustment of the bottom trimmer of the 1st I-F transformer.

(l) To adjust the AFC system it will be necessary to transfer the output lead of the signal generator back to the top cap of the 6K7 I-F amplifier tube. The .02 mf. condenser should still be connected in series with this lead.

(m) Insert a 0.5 millimeter in series with the cathode circuit of the 6J7 tube and with a strong 450 kilocycle signal from the signal generator, the reading of the cathode current should be recorded.

(n) Turn the Phantom Control to the MYSTIC HAND position and without changing the output of the signal generator, adjust the top trimmer condenser of the 2nd I-F transformer so that the reading of the 0.5 millimeter is the same as was recorded with the Phantom Control in the NORMAL position. This value of current will be obtained with the trimmer closed, with the trimmer open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used. An insulated screw driver should be used in adjusting the AFC trimmer condenser.

(o) As a final check on the AFC adjustment, disconnect the test equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC "ON" and "OFF". If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 10 kilocycles of the station selector setting with AFC "ON", the AFC is properly aligned. If distortion is noted and the receiver will not automatically tune-in stations as described, the AFC alignment should be rechecked.

II. Oscilloscope Method.

(a) Connect the output of a FREQUENCY MODULATED R-F signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows: The "High" side should be connected to the plate of the 6R7 tube and the "Low" side should be connected to the receiver chassis. Be sure the oscilloscope is protected from D.C. by connecting a condenser, .1 mf. to .05 mf., in series with the lead of the 6R7 tube).

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.

(d) Set the signal generator to 450 kilocycles. See

instructions supplied with signal generator and oscilloscope.

(e) Adjust the middle trimmer of the 2nd I-F transformer so that the nose of the selectivity curve is centered on the resonance axis (R) of the transparent scale supplied with the oscilloscope.

(f) Adjust the bottom trimmer of the 2nd I-F transformer for maximum amplitude of the selectivity curve on resonance axis (R).

(g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(i) Increase the output of the signal generator and adjust the top trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(j) Adjust the bottom trimmer of the 1st I-F transformer for maximum amplitude.

(k) Reduce the output of the signal generator and adjust the middle trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(l) Carefully repeat operations (f) and (k) for more accurate adjustments.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED

bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, "osc. series" Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

American Broadcast Band (BLUE)  
Police and Amateur Band (RED)  
High Frequency Band (GREEN)

Shunt Alignment  
1,400 Kilocycles  
5,000 Kilocycles  
18,000 Kilocycles

Series Alignment  
800 Kilocycles  
2000 Kilocycles

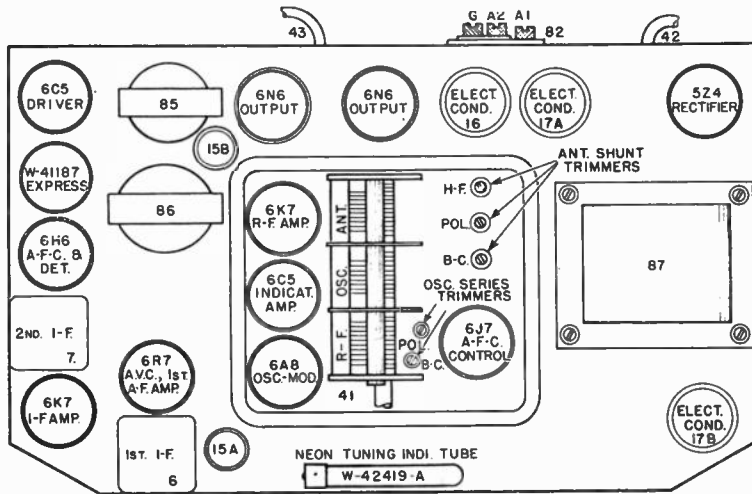


Fig. 2. Top View—1336

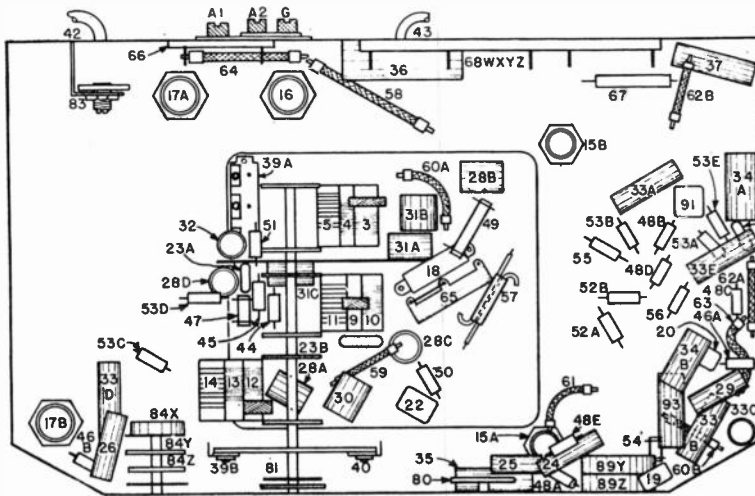


Fig. 3 Bottom View—1336

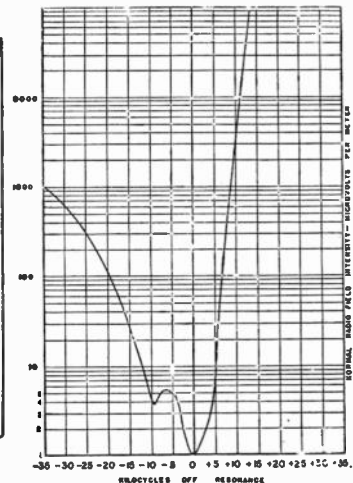


Fig. 5

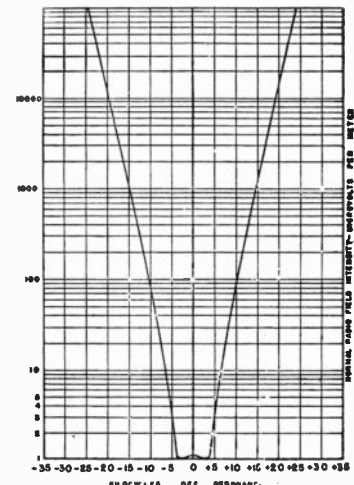


Fig. 6

PARTS LIST—MODEL 1336

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A(B,C)	W -37922	Dial Light Bulb	52AB	-36321	Resistor, 400,000 Ohm 1/2 W.
	G 3-37965	Dial Light Socket	53AB	-36322	Resistor, 500,000 Ohm 1/2 W.
	W -40570	Dial Light Shield	54	-21454	Resistor, 1 Megohm 1/2 W.
2	W -41187	Auto Expressionator Tube	55	-36176	Resistor, 1.3 Megohm 1/2 W.
3	G 94-32000	Antenna Coil, B. C. B.	56	-36588	Resistor, 3. Megohm 1/2 W.
4	G108-32000	Antenna Coil, Pol. B.	57	G101-34403	R. F. Neutralizing Condenser
5	G107-32000	Antenna Coil, H. F. B.	58	W -32926	Resistor, 100 Ohm 3W. Flex.
6	G 90-32001	1st I-F Assembly	59	W -25937	Resistor, 275 Ohm 1/2 W. Flex.
7	G126-32001	2nd I-F Assembly	60AB	W -28589	Resistor, 350 Ohm 1/2 W. Flex.
9	G 97-32002	Osc. Coil, R. C. B.	61	W -22514	Resistor, 750 Ohm 1/2 W. Flex.
10	G 96-32002	Osc. Coil, Pol. B.	62AB	W -21452	Resistor, 1100 Ohm 1/2 W. Flex.
11	G 95-32002	Osc. Coil, H. F. B.	63	W -23013	Resistor, 2000 Ohm 1/2 W. Flex.
12	G 68-32001	R. F. Coil, R.C.B.	64	W -23907	Resistor, 750 Ohm 1 1/2 W. Flex.
13	G 75-32001	R. F. Coil, Pol. B.	65	W -4921C	Resistor, 10,000 Ohm 1W.
14	G 74-32001	R. F. Coil, H. F. B.	66	W -12418A	Resistor, 30,000 Ohm 4W.
15AB	W -41598	Condenser, 50 Mf. 25V.	67	-36952	Resistor, 30,000 Ohm 1W.
16	W -36055	Condenser, 35 Mf. 400V.	68Z		Resistor, 4,000 Ohm
17AB	W -36057	Condenser, 40 Mf. 300V.	68Y	W -11966	Resistor, 1,000 Ohm
18	G 18-34000	Condenser, 5600 Mmf. 300V.	68X		Resistor, 3,000 Ohm
19	G 5-34002	Condenser, .000050 Mf. 200V.	68W		Resistor, 200 Ohm
20	G 10-34002	Condenser, .000050 Mf. 300V.	69	G154-36400	Socket Type, 5Z4
21	G 2-34002	Condenser, .0001 Mf. 200V.	70	G155-36400	Socket Type, 6H6
22	G 6-34002	Condenser, .000025 Mf. 200V.	71AB	G151-36400	Socket Type, 6K7
23AB	G 3-34002	Condenser, .0005 Mf. 200V.	72	G156-36400	Socket Type, 6A8
24	W -34713	Condenser, .005 Mf. 160V.	73	G164-36400	Socket Type, 6R7
25	W -41461	Condenser, .0014 Mf. 200V.	74	G157-36400	Socket Type, 6J7
26	W -30805	Condenser, .01 Mf. 400V.	75AB	G165-36400	Socket Type, 6N6
27		NONE	76AB	G152-36400	Socket Type, 6C5
28AB	W -36541	Condenser, .02 Mf. 160V.	77	G167-36400	Auto Expressionator
29	W -28621	Condenser, .02 Mf. 200V.	78	G 1-42584	Neon Tube Socket Assembly
30	W -41209	Condenser, .048 Mf. 200V.	W -42589	Neon Tube Cover	
31ABC	W -35936	Condenser, .05 Mf. 200V.	W -12592	Cover Rubber Gasket	
32	W -32380	Condenser, .05 Mf. 200V.	79	734C14 "M"	Speaker Spec. 1-D-437
33AB	W -27216	Condenser, .05 Mf. 200V.		-41603	Cone Assembly For above Spk.
34AB	W -32780B	Condenser, .05 Mf. 400V.		-41601	Field Coil
35	W -35758	Condenser, .005 Mf. 400V.	80	W -41029	Phantom Cont. Switch
36	W -22588	Condenser, .1 Mf. 400V.	81	C -11235	Band Select. Switch
37	W -42554	Condenser, .12 Mf. 160V.	82	G 27-26719	Ant. and Grd. Terminal Assembly
38	W -41218	B. C. and Pol. Osc. Series Trimmer	83	W -11287	300 Ohm 1/2 W. A-F-C Bias Resistor
39AB	W -37891A	3 Section Shunt Trimmer	84	B -42285A	Fidelity and Line Switch
40	W -35851A	3 Section Shunt Trimmer	85	G 2-37995	A-F Transformer
41	G 47-33002	3 Gang Var. Tuning Cond.	86	G 10-24628	Out-Put Transformer
	MG12-42411	Dial Drive Assembly, Complete		-12557	Power Trans. 60 Cy. 110V.
	C -12421	Dial Glass (Calibrated)		-43008	Power Trans. 25 Cy. 110V.
	W -42325	Dial Drive Unit only		-43068	Power Trans. 50 Cy. 110V.
	W -41144	Dial Hand (Long)		-43089	Power Trans. 50 Cy. 220V.
	W -42180	Dial Hand (Short)	88Z		Vol. Cont. 3 Meg. Tap 1 Meg.
	W -40186	Screw, Hand Mtg.	89Y	-11375B	Vol. Cont. 1 Meg.
	E -13648	R.H. Indicator Flipper(Phan. Cont.)	90	W -42419A	Neon Tuning Indic. Tube
	E -13647	L.H. Indicator Flipper (Fidelity Cont.)	91	G 5-34005	Condenser, .00005 Mf. 300V.
	W -42308	Indicator Control Pulley (2)	92	G 37-26719	Phono Terminal
	-43080	R.H. Indicator Cont. Cable Assy.	93	W -24049	Condenser, .1 Mf. 200V.
	-43081	L.H. Indicator Cont. Cable Assy.	C	-41219	Escutcheon
	-40538	Band Indic. Cont. Cable	B	-41232	Escutcheon Lens
	-41157	Drive Belt	A	-41233	Escutcheon Retaining Spring
	-40537	Flexible Coupling	B	-41234	Lens Retaining Spring
42	B -33906A	Power Cord and Plug	C	-4134A	Escutcheon
43	G 2-37918	Speaker Cable	C	-42044	Escutcheon Lens
44	W -36760	Resistor, 20,000 Ohm 1/2 W.	C	-12043	Escutcheon Rubber Ring
45	W -33390	Resistor, 30,000 Ohm 1/2 W.	W	-7670	Escutcheon Mtg. Screw
46AB	W -35928	Resistor, 60,000 Ohm 1/2 W.	W -37339	Knob, V. C. and Station Sel.	
47	W -34019	Resistor, 75,000 Ohm 1/2 W.	W -40182B	Knob, Band Sel. and Phantom Cont.	
48AB	W -35600	Resistor, 100,000 Ohm 1/2 W.	W -42490	Knob, Fidelity Control	
49	W -6705	Resistor, 3,500 Ohm 1W.	W -36117	Rubber Mtg. Foot	
50	W -35930	Resistor, 200,000 Ohm 1/2 W.	W -40230B	Emblem	
51	W -35601	Resistor, 300,000 Ohm 1/2 W.	W -32620	Nut, Emblem Mtg.	
			W -6-Q	Cabinet	

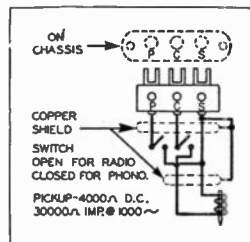


Fig. 7 Phonograph Pickup

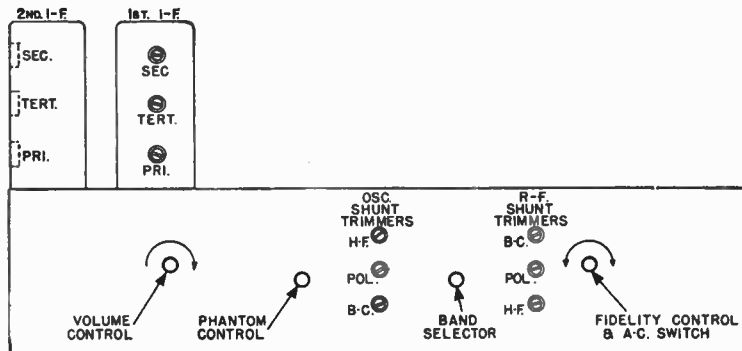
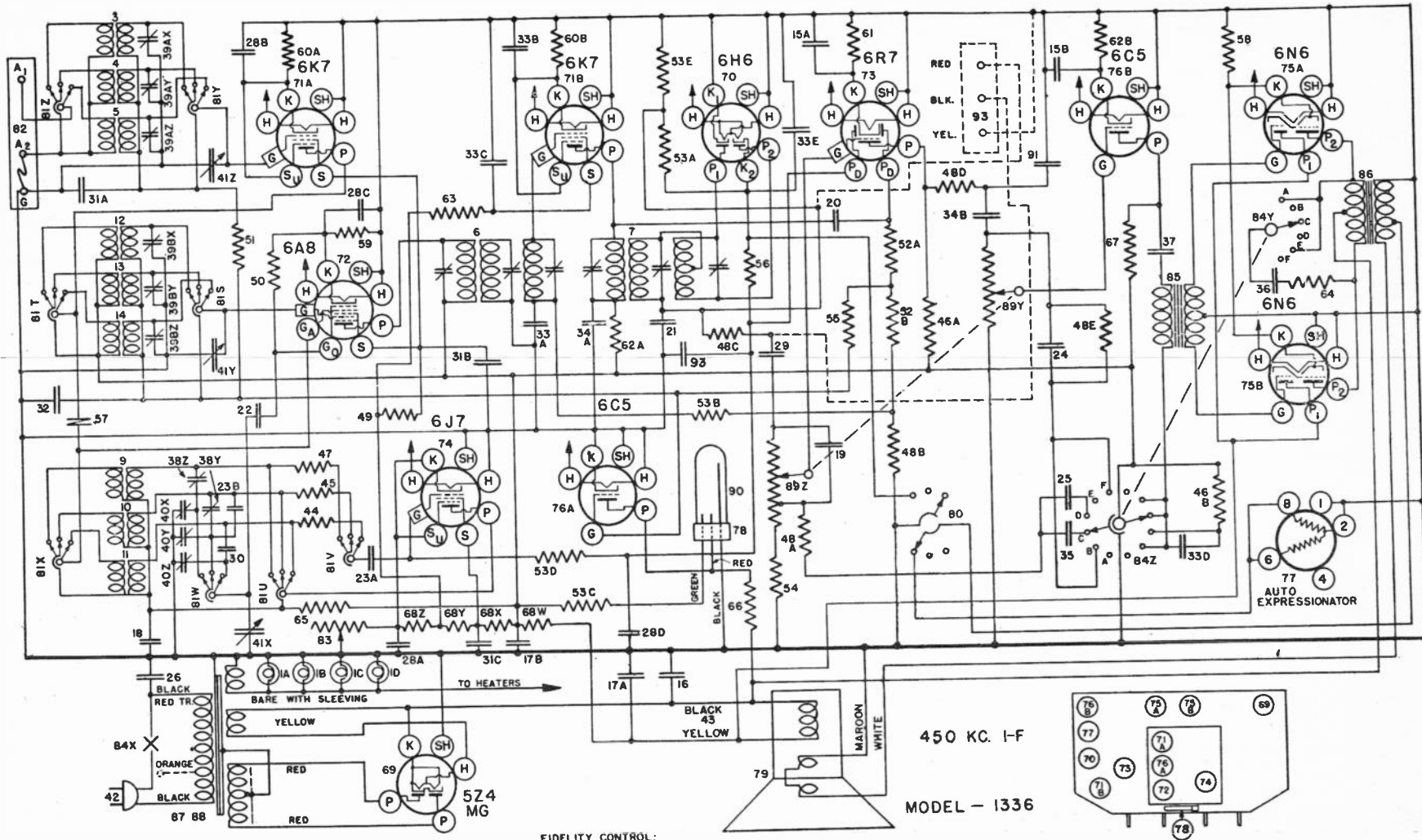


Fig. 4 Front View—1336



FIDELITY CONTROL:  
 A -- OFF  
 B -- NORMAL  
 C -- HIGH FIDELITY.  
 D -- MELLOW TONE.  
 E -- BASS.  
 F -- NOISE REDUCING.

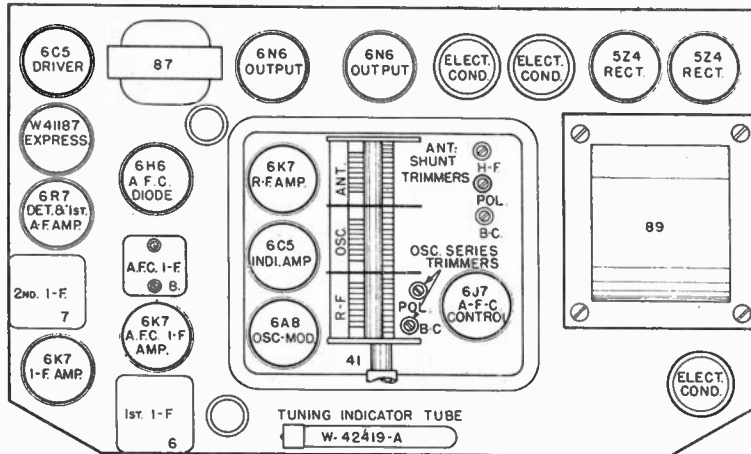
Fig. 1. Circuit Diagram—Model 1336

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	S <sub>u</sub>	K	Ca	Co
6K7	R-F Amplifier	6.3	238	—	105	—	2.5	—	—
6A8	Oscillator-Modulator	6.3	238	—	105	2.5	—	—	—
6J7	AFC Control	6.3	170	—	130	—	—	170	-5 to -12
6K7	I-F Amplifier	6.3	220	—	105	3.0	—	—	—
6K7	AFC Diode and I-F Amplifier	6.3	220	—	100	3.0	—	—	—
6H6	AFC Detector	6.3	—	—	—	—	—	—	—
6R7	Diode and 1st A-F Amplifier	6.3	80	—	—	—	—	2.0	—
6C5	A-F Driver	6.3	220	—	—	—	—	—	—
6N6	(2) Output	6.3	238	350	—	—	—	2.6	—
5Z4	(2) Rectifiers	5.0	—	—	—	—	—	350	—
6C5	Tuning Indicator Amplifier	6.3	150	—	—	—	—	0	—
W-42419A	Neon Tuning Tube	—	150	—	—	—	—	0	—
W-41187	Auto-Expressionator Tube	Varies with power output.							

Voltage drop across speaker field 112 volts.  
 Power output approximately 25 watts.  
 Power consumption approximately 142 watts.  
 All readings taken on 117.5 volt power supply.

For Alignment Procedure, See Pages 495 & 496



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37922	Dial Light Bulb	50	-35930	Resistor, 200,000 Ohm, 1/4 W.
2	W-40570	Dial Light Shield	51	-35601	Resistor, 300,000 Ohm, 1/4 W.
3	W-41187	Auto-Expressionator Tube	52AB	-36322	Resistor, 500,000 Ohm, 1/4 W.
4	G 94-32000	Antenna Coil B. C. B.	CIDE	-38623	Resistor, 750,000 Ohm, 1/4 W.
5	G107-32000	Antenna Coil H. F. B.	53	-35602	Resistor, 1 Megohm, 1/4 W.
6	G107-32004	1st I-F Assembly	54AB	-36176	Resistor, 1.3 Megohm, 1/4 W.
7	G 91-32004	2nd I-F Assembly	55	-36176	Resistor, 1.3 Megohm, 1/4 W.
8	G108-32004	A-F-C I-F Assembly	56	NONE	
9	G 97-32002	Oscillator Coil B. C. B.	57	36688	Resistor, 3 Megohm, 1/4 W.
10	G 96-32002	Oscillator Coil Pol. B.	58	G101-34403	R-F Neutralizing Cond.
11	G 95-32002	Oscillator Coil H. F. B.	59	W-23012A	Resistor, 40 Ohm, 3/4 W. Flex.
12	G 68-32001	R-F Coil B. C. B.	60	W-35167	Resistor, 220 Ohm, 1/2 W. Flex.
13	G 75-32001	R-F Coil Pol. B.	61	W-22907	Resistor, 275 Ohm, 1/2 W. Flex.
14	G 74-32001	R-F Coil H. F. B.	62	W-28589	Resistor, 350 Ohm, 1/2 W. Flex.
15AB	W-41598	Condenser, 50 Mf. 25V.	63	W-28106	Resistor, 500 Ohm, 1/2 W. Flex.
16	W-36055	Condenser, 35 Mf. 400V.	64AB	W-21152	Resistor, 1100 Ohm, 3/4 W. Flex.
17AB	W-36057	Condenser, 40 Mf. 300V.	65	W-23013	Resistor, 2000 Ohm, 1 1/2 W. Flex.
18	G 18-34000	Condenser, 5000 Mmf.	66	W-23907	Resistor, 750 Ohm, 1 1/2 W. Flex.
19	G 5-34002	Condenser, .00005 Mf. 200V.	67	W-4921C	Resistor, 10000 Ohm, 1W.
20		NONE	68	W-42418	Resistor, 30000 Ohm, 4W.
21AB	G2-34002	Condenser, .0001 Mf. 200V.	69	-36952	Resistor, 30000 Ohm, 1W.
22	G6-34002	Condenser, .000025 Mf. 200V.	70Z		Resistor, 4000 Ohm.
23AB	G3-34002	Condenser, .0005 Mf. 200V.	70Y	W-41966	Resistor, 1000 Ohm, 1/2 W. Candohm
24	W-35758	Condenser, .008 Mf. 400V.	70X		Resistor, 3000 Ohm, 1/2 W. Candohm
25	W-41461	Condenser, .0014 Mf. 200V.	70W		Resistor, 200 Ohm, 1/2 W. Candohm
26	W-30905	Condenser, .01 Mf. 400V.	71AB	G154-36400	Socket Type 5Z4
27	W-6705	Resistor, 3500 Ohm, 1W.	72	G155-36400	Socket Type 6H6
28AB	W-36541	Condenser, .02 Mf. 160V.	73ABC	G151-36400	Socket Type 6J7
29	W-28621	Condenser, .02 Mf. 200V.	74	G156-36400	Socket Type 6A8
30	W-41209	Condenser, .048 Mf. 200V.	75	G161-36400	Socket Type 6R7
31ABC	W-35936	Condenser, .05 Mf. 200V.	76	G157-36400	Socket Type 6J7
32	W-32380	Condenser, .05 Mf. 200V.	77AB	G165-36400	Socket Type 6N6
33AB	W-27216	Condenser, .05 Mf. 200V.	78AB	G152-36400	Socket Type 6C5
34AB	W-32780B	Condenser, .05 Mf. 400V.	79	G167-36400	Auto-Expressionator Socket
35	W-28904	Condenser, .001 Mf. 200V.	80		Tuning Indic. Socket
36	W-22688	Condenser, .1 Mf. 400V.	81	G2-42584	Speaker Spec. 1-D-437
37	W-42554	Condenser, .12 Mf. 160V.	82	W-41603	Cone Assembly for above Speaker
38Z	W-41218	B. C. Osc. Series Trimmer	83	W-41601	Field Coil for above Speaker
38Y		Pol. Osc. Series Trimmer	84	W-41029B	Phantom Control Switch
39AB	W-37891	3 Section Shunt Trimmer Cond.	85	W-41235A	Band Selector Switch
40	W-35951	3 Section Shunt Trimmer Cond.	86	G27-25719	Ant. and Gnd. Terminal Assembly
41	G47-33002	3 Gang Var. Tuning Cond.	87	W-11287	A-F-C Bias Control, 300 Ohm, 1/2 W.
	MG12-42425	Dial Drive Assembly Complete	88	B-12295A	Fidelity and Line Switch
	42421	Dial Glass (Calibrated)	89	G2-37995	A-F Driver Transformer
	42525B	Drive Unit only	90	G62-24628	Out-Put Transformer
	42588A	Dial Mask (Paper Backing)	91	G1-37900	Power Transformer, 60 Cy. 110V.
	41144	Hand-Long Dial	92	G5-37900	Power Transformer, 25 Cy. 110V.
	42180	Hand-Short Dial	93	G6-37900	Power Transformer, 50 Cy. 220V.
	W-40486	Screw-Hand Mounting	94	W-37900	Power Transformer, 50 Cy. 110V.
	E-13648	R. H. (Mystic Hand) Flipper	95	W-37900	Power Transformer, 25 Cy. 220V.
	E-13647	L. H. (Fidelity) Flipper	96	G8-37900	Power Transformer, Universal
	W-43080	Flipper Control Cable Assembly	97	G2-37900	Power Transformer, Universal
	W-4208A	Band Indic. Cont. Cable	98	W-41375	(Vol. Control, 3 Meg., Tap. 3 Meg.)
	W-40537	Flexible Coupling Unit	99	W-42419	Neon Tuning Indic. Tube
	W-41157	Drive Belt	100	W-21237A	Resistor, 60,000 Ohm, 1/2 W.
42	B-33906A	Power Cord and Plug	C	G37-25719	Phono. Terminal Assembly
43	G2-37918	Speaker Cable	C	42134A	Escutcheon
44	W-36760	Resistor, 20,000 Ohm, 1/4 W.	C	42043	Lens, Escutcheon
45	W-33390	Resistor, 30,000 Ohm, 1/4 W.	W	W-12043	Escutcheon Rubber Mounting
46AB	W-36761	Resistor, 40,000 Ohm, 1/4 W.	W	W-36117	Rubber Mounting Foot
47	W-34019	Resistor, 75,000 Ohm, 1/4 W.	W	W-12490	Knob (Fidelity)
48ABC	W-35600	Resistor, 100,000 Ohm, 1/4 W.	W	W-37339	Knob (Station and Volume)
49	W-35929	Resistor, 150,000 Ohm, 1/4 W.	W	W-40192	Knob (Band Sel. and A-F-C)
			W	W-10250B	Emblem
			W	W-32930	Nut, Emblem Mounting
			W	W-35922	Grille Cloth
			W	W-6-R	Cabinet

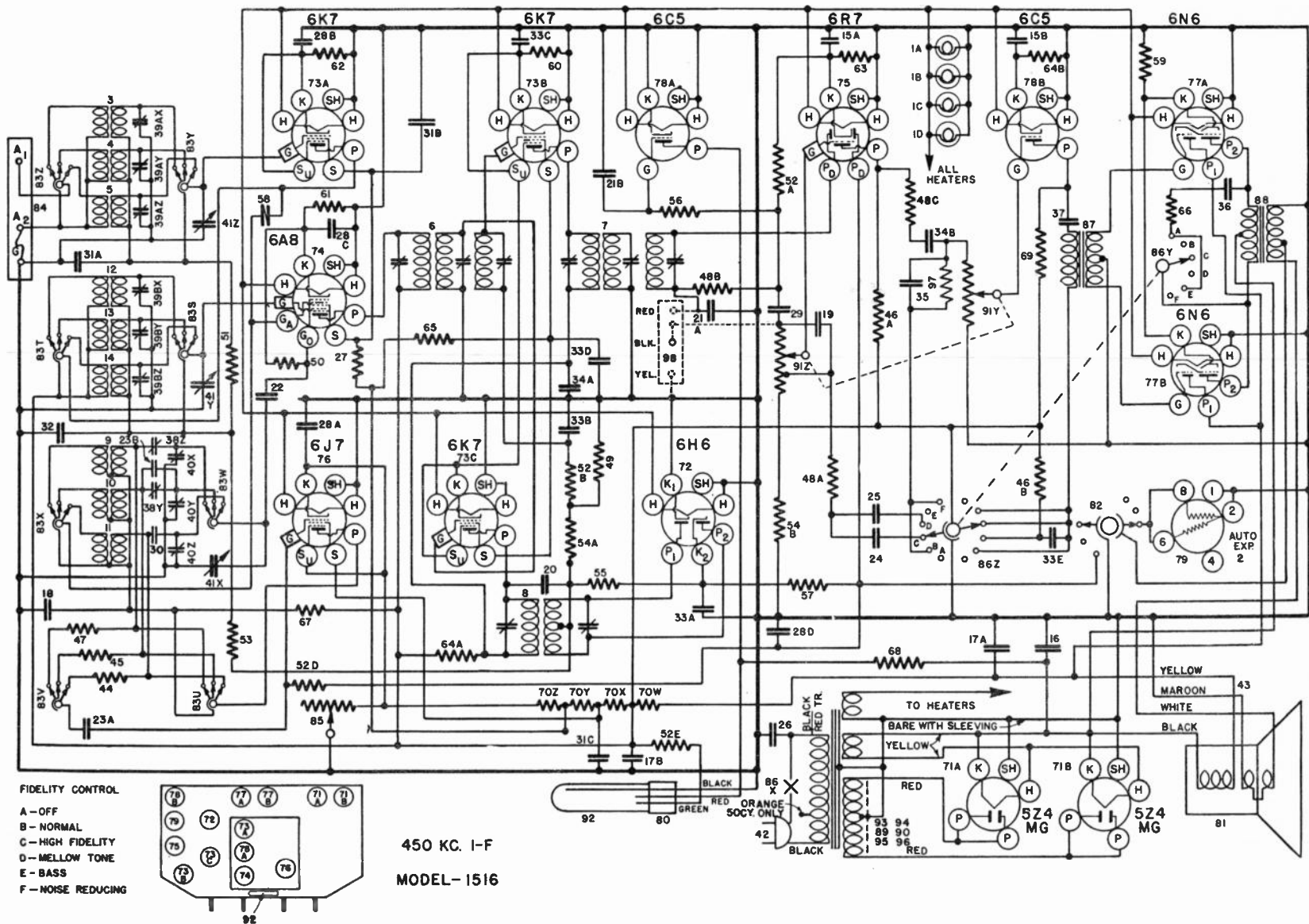


FIG. 1. Circuit Diagram—Model 1516

CHASSIS MODEL 1516-13 To 53

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	Su	K	Ga	Co
6K7	R-F Amplifier	6.3	238	—	105	2.5	2.5	—	—
6A8	Oscillator-Modulator	6.3	238	—	105	—	2.5	170	-5 to -12
6J7	AFC Control	6.3	170	—	130	—	5.8	—	—
6K7	I-F Amplifier	6.3	220	—	105	3.0	3.0	—	—
6K7	AFC Diode and I-F Amplifier	6.3	220	—	100	3.0	3.0	—	—
6H6	AFC Detector	6.3	—	—	—	—	—	—	—
6R7	Diode and 1st A-F Amplifier	6.3	80	—	—	—	2.0	—	—
6C5	A-F Driver	6.3	220	—	—	—	6.8	—	—
6N6	(2) Output	6.3	238	300	—	—	—	—	—
5Z4	(2) Rectifiers	5.0	—	—	—	—	350	—	—
6C5	Tuning Indicator Amplifier	6.3	150	—	—	—	0	—	—
W	-42419A Neon Tuning Tube	—	150	—	—	—	0	—	—
W	-41187 Auto-Expressionator Tube	—	—	—	—	—	0	—	—

Voltage drop across speaker field 112 volts.  
 Power output approximately 25 watts.  
 Power consumption approximately 142 watts.  
 All readings taken on 117.5 volt power supply.

For Alignment Procedure, See Pages 495 & 496

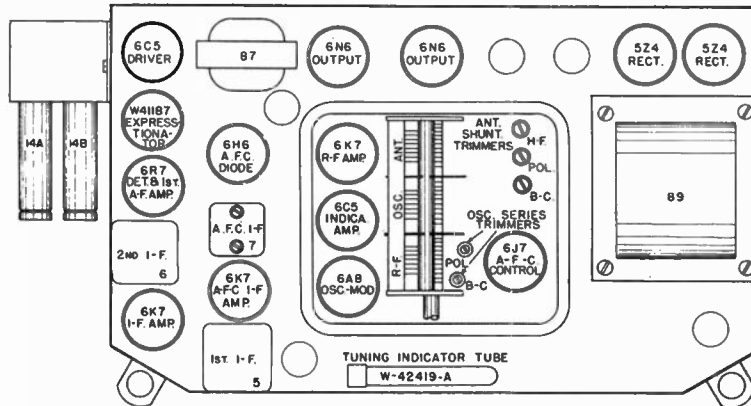
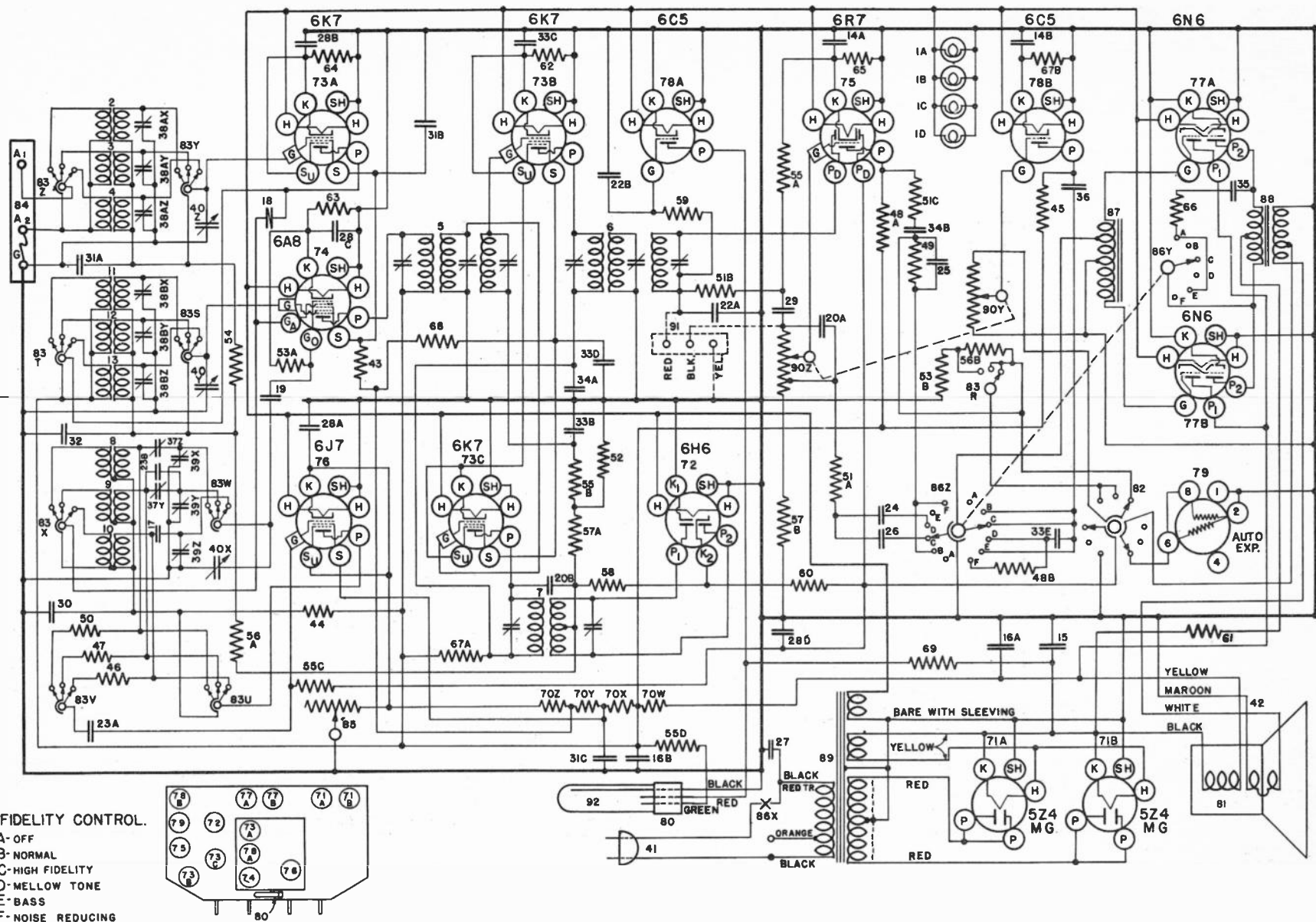


Fig. 2 Top View—1516-13 to 53

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABCD	W -37922	Dial Light Bulb	49	-21237A	Resistor, 60,000 Ohm 1/4 W.
2	G94 -32000	Arr. Coil—B-C	50	-34019	Resistor, 75,000 Ohm 1/4 W.
3	G108 -32000	Ant. Coil—Pol.	51ABC	-35600	Resistor, 100,000 Ohm 1/4 W.
4	G107 -32000	Ant. Coil—H-F	52	-35929	Resistor, 150,000 Ohm 1/4 W.
5	G107 -32004	1st I-F Assembly	53AB	-35930	Resistor, 200,000 Ohm 1/4 W.
6	G91 -32004	2nd I-F Assembly	54	-35601	Resistor, 300,000 Ohm 1/4 W.
7	G108 -32004	A-F-C I-F Assembly	55A } -36322	Resistor, 500,000 Ohm 1/4 W.	
8	G97 -32002	Osc. Coil—B-C	56AB } -38623	Resistor, 750,000 Ohm 1/4 W.	
9	G96 -32002	Osc. Coil—Pol.	57AB } -35602	Resistor, 1. Megohm 1/4 W.	
10	G95 -32002	Osc. Coil—H-F	58	-36176	Resistor, 1.3 Megohm 1/4 W.
11	G68 -32001	R-F Coil—B-C	59	-35927	Resistor, 2. Megohm 1/4 W.
12	G75 -32001	R-F Coil—Pol.	60	-36688	Resistor, 3. Megohm 1/4 W.
13	G74 -32001	R-F Coil—H-F	61	W -23012A	Resistor, 40 Ohm 1/4 W. Flex.
14AB	W -41598	Condenser, 50 Mfd. 25 V.	62	W -35467	Resistor, 220 Ohm 1/4 W. Flex.
15	W -36055	Condenser, 35 Mfd. 400 V.	63	W -25837	Resistor, 275 Ohm 1/4 W. Flex.
16AB	W -36057	Condenser, 40 Mfd. 300 V.	64	W -28589	Resistor, 350 Ohm 1/4 W. Flex.
17	G18 -34000	Condenser, 5600 Mmf.	65	W -28106	Resistor, 500 Ohm 1/4 W. Flex.
18	G101 -34403	Condenser, Neutralizing	66	W -23907	Resistor, 750 Ohm 1/4 W. Flex.
19	G6 -34002	Condenser, .00025 Mfd. 200 V.	67AB	W -21452	Resistor, 1100 Ohm 1/4 W. Flex.
20AB	G5 -34002	Condenser, .00005 Mfd. 200 V.	68	W -23013	Resistor, 2000 Ohm 1/4 W. Flex.
21	NONE		69	W -43114	Resistor, 30000 Ohm 1/4 W. Candohm
22AB	G2 -34002	Condenser, .0091 Mfd. 200 V.	70Y } -43113	Resistor, 1000 Ohm	
23AB	G3 -34002	Condenser, .0005 Mfd. 200 V.	70X } Candohm	Resistor, 3000 Ohm	
24	W -41461	Condenser, .0014 Mfd. 200 V.	70W } Resistor, 200 Ohm		
25	W -28904	Condenser, .004 Mfd. 200 V.	71AB	G154-36400	Socket Type 5Z4
26	W -35758	Condenser, .008 Mfd. 400 V.	72	G155-36400	Socket Type 6H6
27	W -30805	Condenser, .01 Mfd. 400 V.	73ABC	G151-36400	Socket Type 6K7
28AB } -36541	Condenser, .02 Mfd. 160 V.	74	G156-36400	Socket Type 6A8	
29 } -28621	Condenser, .02 Mfd. 200 V.	75	G164-36400	Socket Type 6R7	
30 } -41209	Condenser, .048 Mfd. 200 V.	76	G157-36400	Socket Type 6J7	
31ABC } -35936	Condenser, .05 Mfd. 200 V.	77AB	G165-36400	Socket Type 6N6	
32 } -32280	Condenser, .05 Mfd. 200 V.	78AB	G152-36400	Socket Type 6C5	
33AB } -27216	Condenser, .05 Mfd. 200 V.	79	G167-36400	Socket Auto-Expressionator	
34AB } -32780B	Condenser, .05 Mfd. 400 V.	80	G1 -42584	Socket Tunalite	
35 } -22698	Condenser, .1 Mfd. 400 V.	81	734CJ4 "M"	Speaker Spec. No. 1-D-437	
36 } -42554	Condenser, .12 Mfd. 160 V.	82	W -41603	Cone Assembly for above Speaker	
37Y } -41218	Condenser, Osc. Series Trimmer	83	-41601	Field Coil for above Speaker	
38AB } -37891A	Condenser, 3 Sect. Shunt Trimmer	84	W -41029B	Phantom Control Switch	
39 } -35951	Condenser, 3 Sect. Shunt Trimmer	85	C -41235A	Band Selector Switch	
40 } G47 -33002	3 Sect. Var. Tuning Condenser	86	G27 -26719	Ant. and Gnd. Terminal Board	
MG12 } -42425	Dial Drive Assembly Complete	87	W -41287	Resistor, A-F-C Var. Bias	
C } -42225B	Drive Unit Only	88	B -42295A	300 Ohm 1/4 W.	
} -42427	Glass Dial Calibrated	89	G64 -24628	Fidelity Switch	
} -42598A	Mask—Dial Backing	} G62 -24628	G62 -24628	Audio Choke	
} -41144	Pointer—Long	} G1 -37900	G1 -37900	Output Transformer	
} -42180	Pointer—Short	} G5 -37900	G5 -37900	Power Transformer 60 Cy. 110 V.	
W } -40486	Screw—Pointer Mtg.	} G6 -37900	G6 -37900	Power Transformer 25 Cy. 110 V.	
} -43080	Flipper Control Cable Assembly	} G7 -37900	G7 -37900	Power Transformer 50 Cy. 220 V.	
E } -13648	R. H. (Mystic Hand) Flipper	} G8 -37900	G8 -37900	Power Transformer 25 Cy. 220 V.	
E } -13547	L. H. (Fidelity) Flipper	90Z } -41375A	90Z -41375A	Volume Control, 3 Meg. Tap. 3 Meg.	
} -40638	Band Indicator Control Cable	90Y } -41375A	90Y -41375A	Volume Control, 1 Meg.	
} -40537	Flexible Coupling	91	G37 -26719	Phono Terminal	
} -41157	Drive Belt	92	W -42419	Tunalite Tube	
41 } -33906A	Power Cord and Plug	C } -4313A	C -4313A	Escutcheon	
42 } -37918	Speaker Cable	C } -42043	C -42043	Resistor—Escutcheon Mtg.	
43 } -6705	Resistor, 3500 Ohm 1 W.	W } -42044	W -42044	Knob—V. C. and S. S.	
44 } -4921C	Resistor, 10,000 Ohm 1 W.	W } -37339	W -37339	Knob—B. S. Sw. and Phantom Cont.	
45 } -36952	Resistor, 30,000 Ohm 1 W.	W } -40192B	W -40192B	Knob—Fidelity Cont.	
46 } -36760	Resistor, 20,000 Ohm 1/4 W.	W } -42490	W -42490	Screws—Escutcheon Mtg.	
47 } -33390	Resistor, 30,000 Ohm 1/4 W.	} -7676	} -7676		
48AB } -36761	Resistor, 40,000 Ohm 1/4 W.				





MODEL 1516-13-23-33-43-53. 450 K.C. IF.

FIG. 1 CIRCUIT DIAGRAM—MODEL 1516-13 TO 53

MODEL 3716

SPECIFICATIONS

Chassis Functions

L-1 chassis contains the tuning unit, R.F., I.F., and initial audio amplifiers, A.V.C., A.F.C., variable and fixed tone compensation and volume expander circuits. It also contains its own power rectifier which supplied field excitation for the 650DT4 twelve inch speaker.

L-2 chassis contains three individual band pass audio amplifiers in addition to the microphone pre-amplifier. It also contains its own filament supply transformer.

L-3 chassis serves as a power supply for rectified current to chassis L-2 and the field of the 65LDT4 twelve inch speaker which is in series with the "B" supply to the high frequency audio amplifier.

L-4 chassis serves as a power supply for rectified current to the fields of the three small "tweeter" speakers and to the field of the large "auditorium" speaker. It also supplies power for the four auxiliary channel control lights.

The L-1 chassis contains all the tuned circuits of the receiver and is the only chassis which need be removed from the cabinet during alignment. All normal connections should be maintained. An output meter may be connected across the plates of the two 6N6 tubes in the output stage of this chassis.

Tube Socket Voltage Readings

Tube	Item	Function	L-1 CHASSIS							
			H	P1	P2	S	SU	K	GA	GO
6K7	73A	R-F Amplifier	6.3	238	-	105	2.5	2.5	-	-
6A8	74	Osc. - Mod.	6.3	238	-	105	-	2.5	170	-5 to -12
6J7	76	AFC Control	6.3	170	-	130	-	5.8	-	-
6K7	73B	I-F Amplifier	6.3	220	-	105	3.0	3.0	-	-
6K7	73C	AFC Diode & I-F Amplifier	6.3	220	-	100	3.0	3.0	-	-
6H6	72	AFC Detector	6.3	-	-	-	-	-	-	-
6R7	75	Diode & 1st A-F Amplifier	6.3	80	-	-	-	2.0	-	-
6C5	78B	A-F Driver	6.3	220	-	-	-	6.8	-	-
6N6	77 A&B	(2) Output	6.3	238	350	-	-	2.6	-	-
5Z4	71 A&B	(2) Rectifiers	5.0	-	-	-	-	350	-	-
6C5	78A	Tuning Indicator Amplifier	6.3	150	-	-	-	0	-	-
W42419A	92	Neon Tuning Indicator Tube								
W41187	79	Auto-Expressionator Tube	Varies with power output							
			Voltage drop across speaker field 112 volts.							

L-2 CHASSIS

Tube	Item	Function	H	P1	P2	S	K			
6F6	40B	P.P. Medium & Low Frequency Amplifier	6.3	170	-	-	15			
6F6	40C		6.3	170	-	-	15			
6N6	41G		6.3	255	290	-	3.5			
6N6	41H	P.P. Parallel Low Frequency Output	6.3	255	290	-	3.5			
6N6	41I		6.3	255	290	-	3.5			
6N6	41J		6.3	255	290	-	3.5			
6N6	41E		6.3	290	290	-	0			
6C5	39B	H.F. Amplifier	6.3	145	-	-	8.0			
6F6	40A	H.F. Driver	6.3	170	-	-	15			
6N6	41C		6.3	295	300	-	0			
6N6	41D	P.P. H.F. Output	6.3	295	300	-	0			
6J7	42	Microphone Input Amplifier	6.3	125	-	70	1.5			
6C5	39A	Phase Inverter	6.3	140	-	-	12			
6C5	39C	Microphone Amplifier Driver	6.3	140	-	-	8			
6N6	41A		6.3	290	295	-	4			
6N6	41B	P.P. Microphone Output	6.3	290	295	-	4			
			"B" Supply drain approximately 610 milliamperes.							

L-3 CHASSIS

Tube	Item	Function	H	K
5Z4MG	7A	Rectifier	5.0	350
5Z4MG	7B	Rectifier	5.0	350
5Z4MG	7C	Rectifier	5.0	370

L-4 CHASSIS

Tube	Item	Function	H	K
5Z4MG	5A	Rectifier	5.0	240
5Z4MG	5B	Rectifier	5.0	240

For alignment procedure, see pages 499 & 500.

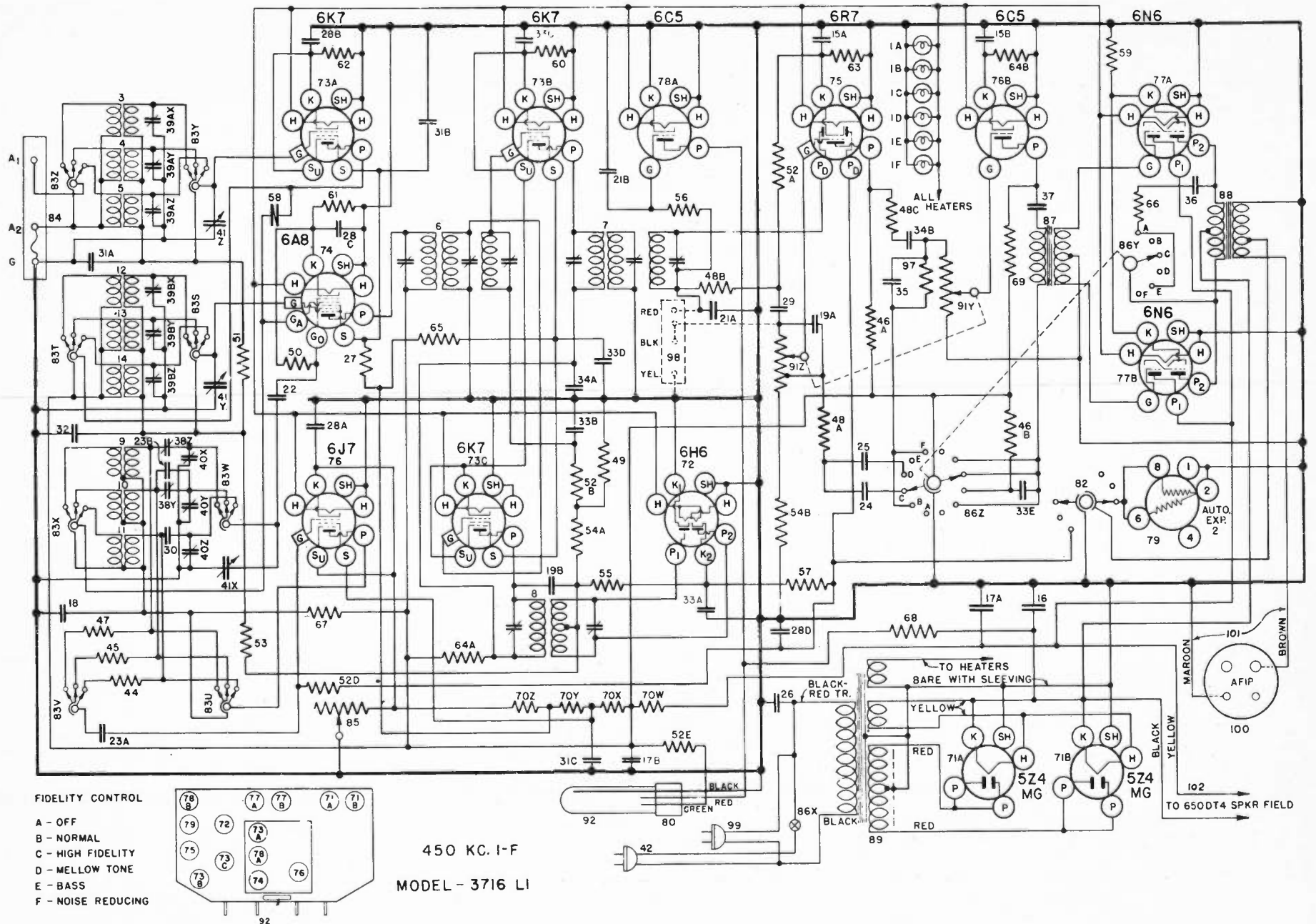
MODEL 3716

L-1 CHASSIS			PARTS LIST --- L-1 CHASSIS			L-1 CHASSIS (cont)		
Item No.	Part No.	Description	Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37922	Dial Light Bulb	80	G3-42584	Tuning Indicator Socket			
	W-40570	Dial Light Shield	82	W-41029-B	Phantom Cont. Sw.			
2	W-41187	Auto-Expressionator Tube	83	41235-A	Band Selector Sw.			
3	G94-32000	Ant. Coil B.C.B.	84	G27-26719	Ant. & Gnd. Term. Assy.			
4	G108-32000	Ant. Coil Pol. B.	85	W-41287	AFC Bias Cont., 300 ohm 1/2 w.			
5	G107-32000	Ant. Coil H.F.B.						
6	W-42739	1st I.F. Assy.	86	B-42295-A	Fidelity Line Sw.			
7	W-42740	2nd I.F. Assy.	87	G3-37995	A-F Driver Trans.			
8	G132-32004	A.F.C.J.F. Assy.	88	G62-24628	Output Trans.			
9	G97-32002	Osc. Coil B.C.B.	89	G3-37900	Power Trans. 60 cy. 110 v			
10	G96-32002	Osc. Coil Pol. B.	91Z	41375	3 meg. Tap 3 meg. Vol. Cont.			
11	G95-32002	Osc. Coil H.F.B.						
12	G68-32001	R.F. Coil B.C.B.	91Y		1 meg. Vol. Cont.			
13	G75-32001	R.F. Coil Pol. B.	92	W-42419	Neon Tuning Indicator Tube			
14	G74-32001	R.F. Coil H.F.B.						
15	W-42738	50 mf. 25 v. Cond.	97	21237-A	60,000 ohm 1/2 w. Res.			
16	W-42737	35 mf. 400 v. Cond.	98	G37-26719	Phono. Term. Assy,			
17	W-42736	40 mf. 300 v. Cond.			Escutcheon			
18	G18-34000	5600 mmf. Cond.			C-43041			
19	G5-34002	.00005 mf. 200 v. Cond.			C-43043			
21	G2-34002	.0001 mf. 200 v. Cond.			43042			
22	G6-34002	.000025 mf. 200 v. Cond.			W-43230			
23	G3-34002	.0005 mf. 200 v. Cond.			W-43231			
24	W-35758	.008 mf. 400 v. Cond.			6WK			
25	W-41461	.0014 mf. 200 v. Cond.	99	D-30	Cabinet			
26	W-30805	.01 mf. 400 v. Cond.	100	42902	Screws- Escutcheon Mtg.			
27	6705	3500 ohm 1 w. Res.	102	MG73-42708	Power Cord & Plug (short)			
28	W-36541	.02 mf. 160 v. Cond.		MG74-42708	"AFIP" Cable Assy.			
29	W-28621	.02 mf. 200 v. Cond.			Field Cable to 650 DT 4 Speaker			
30	W-41209	.048 mf. 200 v. Cond.	L-2 CHASSIS					
31	W-35936	.05 mf. 200 v. Cond.	1	G6-31618	Choke-Bass & Mezzo P.P.			
32	W-32380	.05 mf. 200 v. Cond.			P. Input			
32	W-27216	.05 mf. 200 v. Cond.	2	G15-29535	Choke-Treble 1st A-F Input			
34	W-32780-B	.05 mf. 400 v. Cond.	3	G65-24628	Choke-Treble P.P. Input			
35	W-28904	.004 mf. 200 v. Cond.	4	G7-31618	Choke-Micro. P.P. Input			
36	W-22688	.1 mf. 400 v. Cond.	5	W-42736	40 mf. 300 v. Cond.			
37	W-42554	.12 mf. 160 v. Cond.	6	G2-34002	100mmf. Cond.			
38	41218	B.C. Osc. Series Tr.	7	G6-34002	25mmf. Cond.			
		Pol. Osc. Series Tr.	8	G5-34002	50mmf. Cond.			
38	W-37891	3 Sec. Shunt Tr. Cond.	9	G1-34002	250mmf. Cond.			
40	W-35951	3 Sec. Shunt Tr. Cond.	10	W-25435	.003 mf. 400 v. Cond.			
41	W-42741-A	3 Gang Var. Tuning Cond.	11	W-3575-B	.008 mf. 400 v. Cond.			
	MG8-42708	Dial Dr. Assy. Complete	12	W-36931	.2 mf. 25 v. Cond.			
	D-42871	Dial Glass (Calibrated)	13	W-22688	.1 mf. 400 v. Cond.			
	C-42754	Drive Unit Only	14	W-29910-A	.25 mf. 200 v. Cond.			
	C-42729	Dial Mask (Pa. Backing)	15	W-31935	.25 mf. 300 v. Cond.			
	W-42730	Hand - Long Dial	16	W-31404	.5 mf. 300 v. Cond.			
	W-42731	Hand - Short Dial	17	42904	Power Cord & Plug			
	W-40486	Screw - Hand Mtg.	18	W-43069	Microphone (complete)			
	E-13761	Mystic Hand Flipper	19	B-42957	Relay S.P.D.T.			
	E-13762	Fidelity Flipper	20	36317	10,000 ohm 1/2 w. Res.			
	W-43080	Flipper Cont. Cable Assy. (4 req.)	21	4921-C	10,000 ohm 1 w. Res.			
	W-42308-A	Flipper Cont. Cable Pulley	22	27121	5,000 ohm 1/2 w. Res.			
	40638	Band Indicator Cont. Cable	23	40757	50,000 ohm 1/2 w. Res.			
	40537	Flex. Coupling Unit	24	35600	100,000 ohm 1/2 w. Res.			
42	42901	Power Cord & Plug (long)	25	35601	300,000 ohm 1/2 w. Res.			
43	G2-37918	Speaker Cable	26	36322	500,000 ohm 1/2 w. Res.			
44	36760	20,000 ohm 1/2 w. Res.	27	W-30539	26.7 ohm 2 1/2 w. Res.			
45	33390	30,000 ohm 1/2 w. Res.	28	W-23012-A	40 ohm 3/4 w. Flex. Res.			
46	36761	40,000 ohm 1/2 w. Res.	29	W-26049	450 ohm 3 w. Flex. Res.			
47	34019	75,000 ohm 1/2 w. Res.	30	W-25291	500 ohm 1 1/2 w. Flex. Res.			
48	35600	1,000 ohm 1/2 w. Res.	31	W-27503	1400 ohm 3/4 w. Flex. Res.			
49	35929	150,000 ohm 1/2 w. Res.	32	W-26422	1,000 ohm 4 w. Flex. Res.			
50	35930	200,000 ohm 1/2 w. Res.	33	W-32337	20 ohm 2 w. Candohm Res.			
51	35601	3,000 ohm 1/2 w. Res.	34	252DT4-J	Speaker (tweeter)			
52	36322	5,000 ohm 1/2 w. Res.	35	650DT4-M	Speaker (12 inch 1300 ohm field)			
53	38623	750,000 Ohm 1/2 w. Res.	36	651DT4-M	Speaker (12 inch 525 ohm field)			
54	35602	1 meg. 1/2 w. Res.	37	953GT4-J	Speaker (18 inch)			
55	36176	1.3 meg. 1/2 w. Res.	38	W-42956	S.P.D.T. Sw.			
56	35927	2 meg. 1/2 w. Res.	43	G1-42980	Socket L.P.S. (male)			
57	36688	3 meg. 1/2 w. Res.	44	G2-42980	Socket H.P.S. (male)			
58	G101-34003	R-F Neutralizing Cond.	45	G98-28807	Socket A.F.I.P.			
59	W-23012-A	40 ohm 3/4 w. Flex. Res.	46	G99-28807	Socket M.I.P.			
60	W-35467	220 ohm 1/2 w. Flex. Res.	47	G100-28807	Socket 9GT			
61	W-25937	275 ohm 1/2 w. Flex. Res.	48	G101-28807	Socket 6DT			
62	W-28589	350 ohm 1/2 w. Flex. Res.	49	G102-28807	Socket 2DT			
63	W-28106	500 ohm 1/2 w. Flex. Res.	50	G1-43000	Plug M.I.P. 4 Prong			
64	W-21452	1100 ohm 3/4 w. Flex. Res.	51	G2-43000	Plug 9GT 5 Prong			
65	W-23013	2,000 ohm 1 1/2 w. Flex. Res.	52	G3-43000	Plug 6DT 6 Prong			
66	W-23907	750 ohm 1 1/2 w. Flex. Res.	53	G4-43000	Plug 2 DT 7 Prong			
67	4921-C	10,000 ohm 1 w. Res.	54	G8-31618	Input Trans.			
68	W-42418	30,000 ohm 4 w. Res.	55	G9-31618	Bass Output Trans.			
69	36952	30,000 ohm 1 w. Res.	56	G66-24628	Mezzo Output Trans.			
70	W-41966	4,000-1,000-3,000-200 ohm Candohm Res.	57	G67-24628	Treble Output Trans.			
79	G167-36400	Auto Exp. Socket	58	G68-24628	Mike Output Trans.			
			59	G47-25669	Filament Trans.			

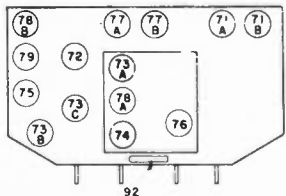
MODEL 3716

L-2 CHASSIS (cont)			SPEAKERS (cont)		
Item No.	Part No.	Description	Item No.	Part No.	Description
60	B-42951	500 ohm Treble Input Vol. Cont.		651DT4-M	"M" Speaker Spec. 1D708
61	B-42953-A	100,000 ohm Bass Vol. Cont. P.P.P. Grids		43174	Cone Assy.
61	B-42953-A	100,000 ohm Mezzo Vol. Cont. P.P. Grids		43178	Field Coil
62	B-42952	500,000 ohm Mike Input Vol. Cont.		43181	Terminal Cover
63	W-30321-A	1 mf. 160 v. Cond.		252DT4-J	Tweeter Speaker
64	W-30323	.01 mf. 200 v. Cond.		MG11-43029	Cable (Tweeter Field) Assy.
65	G5-43000	Plug "AFIP" (male)		MG12-43029	Cable (Tweeter Voice) Assy.
66	W-30805	.01 mf. 400 v. Cond.		MG13-43029	Cable (18" Speaker Field) Assy.
67	35928	60,000 ohm $\frac{1}{2}$ w. Res.		MG14-43029	Cable (18" Speaker Voice) Assy.
68	G6-43000	"SF" 4 Prong Socket		MG15-43029	Cable (12" Speaker Voice) Assy.
69	26578	5 meg. $\frac{1}{2}$ w. Res.			
L-3 CHASSIS			MISCELLANEOUS		
1					
1	W-42737	45 mf. 400 v. Cond.		C-43030-A	Cont. Panel Body
2	W-42736	40 mf. 400 v. Cond.		T-134	Screw Panel Body Mtg.
3	W-22688	.1 mf. 400 v. Cond.		B-43031	Escutcheon Cont. Panel
4	G45-25669	Filter Choke		D-30	Screw CP Escutcheon Mtg.
5	G3-33339	Fuse Panel Assy.		B-42936	LH Dial Glass (small holes)
6	W-32757	Fuse 12 Amp. Fuse Cover Cover Insulator		B-43032	LH Dial Glass (large holes)
7	G154-36400	524 Type Socket		B-42937	RH Dial Glass (small holes)
8	G4-37900	Power Trans. 60 cy. 110 v.		B-43033	RH Dial Glass (large holes)
9	G44-25669	Power Trans. 60 cy. 110 v.		W-43040	Pad for Cont. Panel Glass
10	G1-43001	Plug 4 Prong (female)		B-43034	Mask Support-Cont. Panel
11	G2-43001	Plug 5 Prong (female)		B-43035	Gasket Cont. Panel
12	42905	Power Cord & Plug		B-43036	Mask LH Cont. Panel
L-4 CHASSIS				B-43037	Mask RH Cont. Panel
1	W-37922	Dial Light Bulb		B-43038	Shield Plate Cont. Panel
2	W-42737	35 mf. 400 v. Cond.		W-43039	Light Bracket Cont. Panel
3	W-23615	.05 mf. 400 v. Cond.		W-43047	Microphone Clip
4	42903	Power Cord & Plug		W-43069	Microphone
5	G154-36400	524 Type Socket		W-43232	Knob-Cont. Panel
6	G97-28807	SF Type Socket		43067-A	Cable Cont.-4 ft. 10 in.
7	G46-25669	Power Trans. 60 Cy. 110 v.		43068-A	Cable Cont.-4 ft. 6 in.
SPEAKERS				43076-A	Cable Cont.-7 ft. 2 in.
	953GT4-J	18" Speaker		43077-A	Cable Cont.-7 ft.
	650DT4-M	"M" Speaker Spec. 1D707		43078-A	Cable Cont.-6 ft. 10 in.
	43173	Cone Assy.		W-43046	Duplex Outlet
	43177	Field Coil		W-43045	AC Receptacle Plate
	43180	Terminal Cover		R-154	Screw Outlet Mtg.
	43182	Pot Cover		W-23840	Screw Receptacle Plate Mtg.

Crosley supplies a general replacement line of radio parts through its national distributor organization. Do not hesitate to write to the factory for information as to where these parts may be purchased.



- FIDELITY CONTROL
- A - OFF
  - B - NORMAL
  - C - HIGH FIDELITY
  - D - MELLOW TONE
  - E - BASS
  - F - NOISE REDUCING



450 KC. I-F  
MODEL - 3716 LI

FIG. I.

511

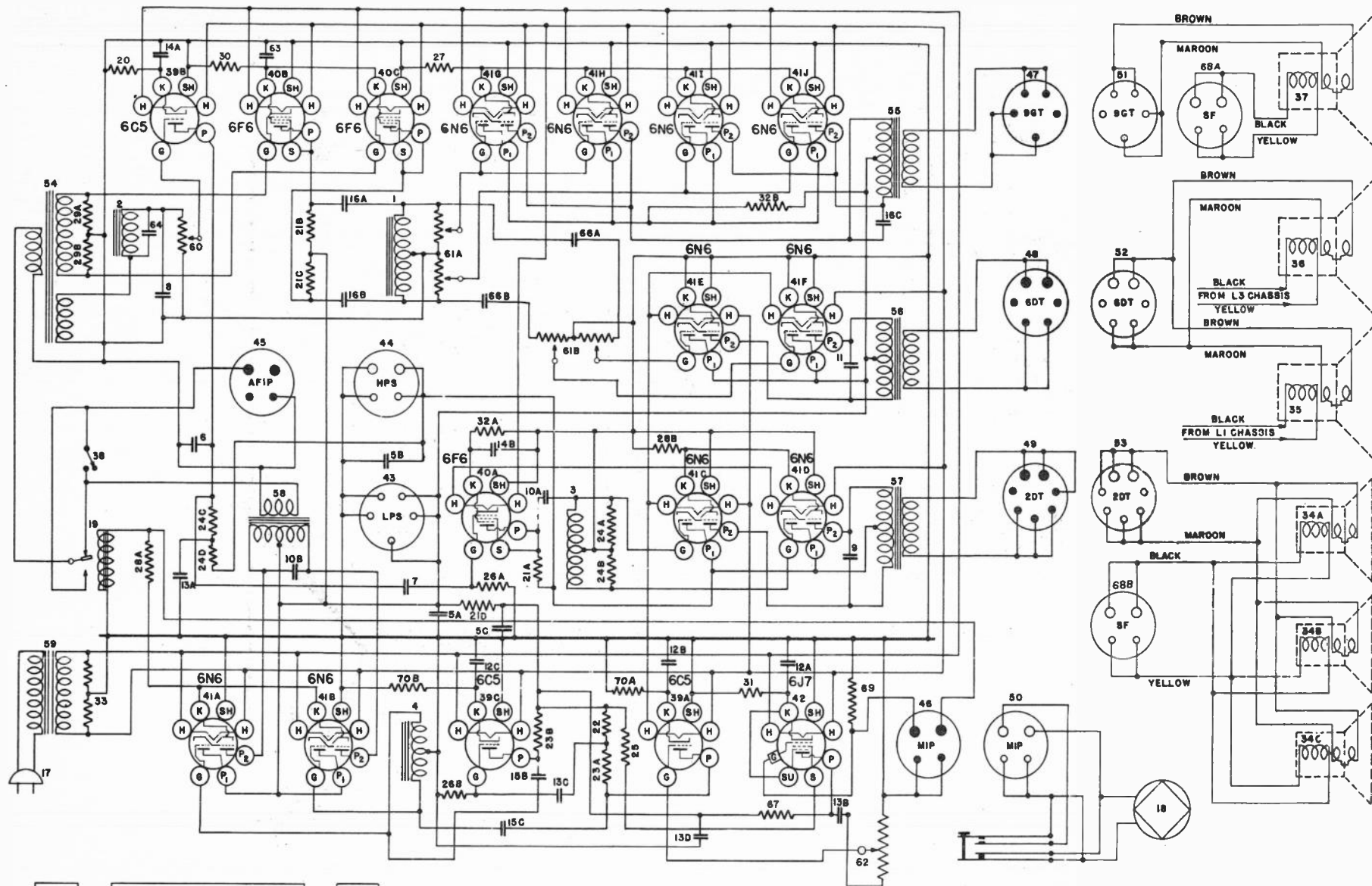
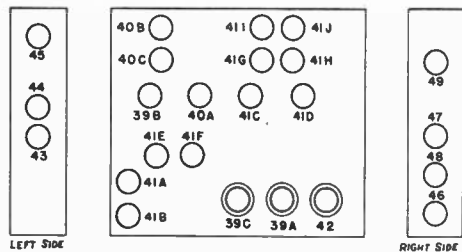
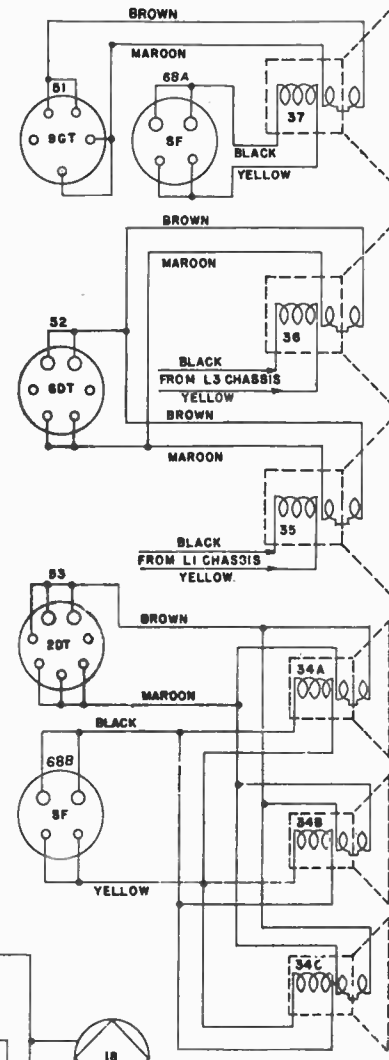


FIG. 5.



MODEL 3716-L2



MODEL 3716

MODEL 3716

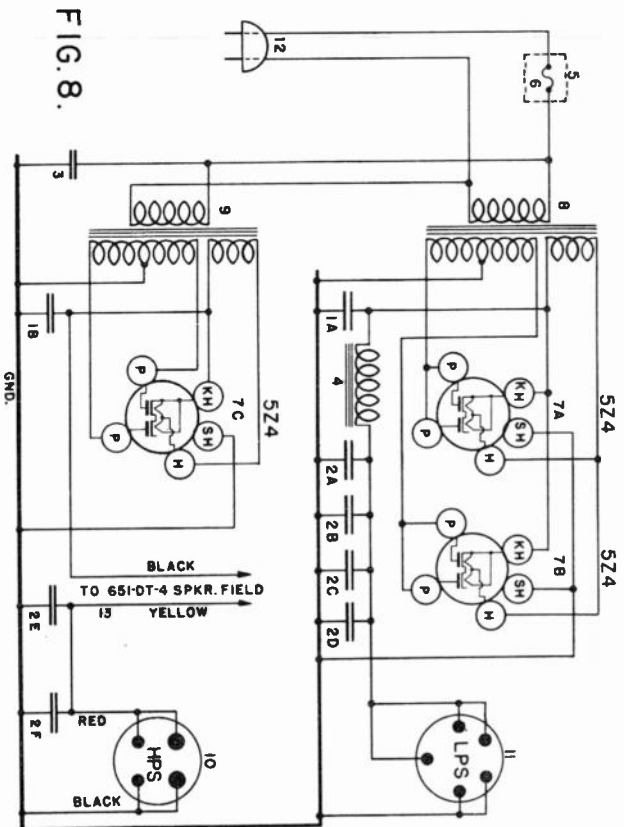
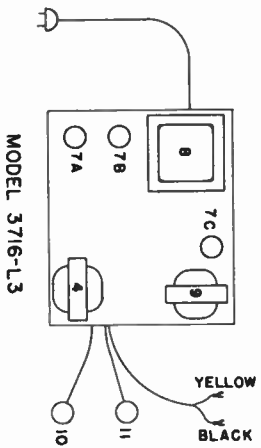


FIG. 8.

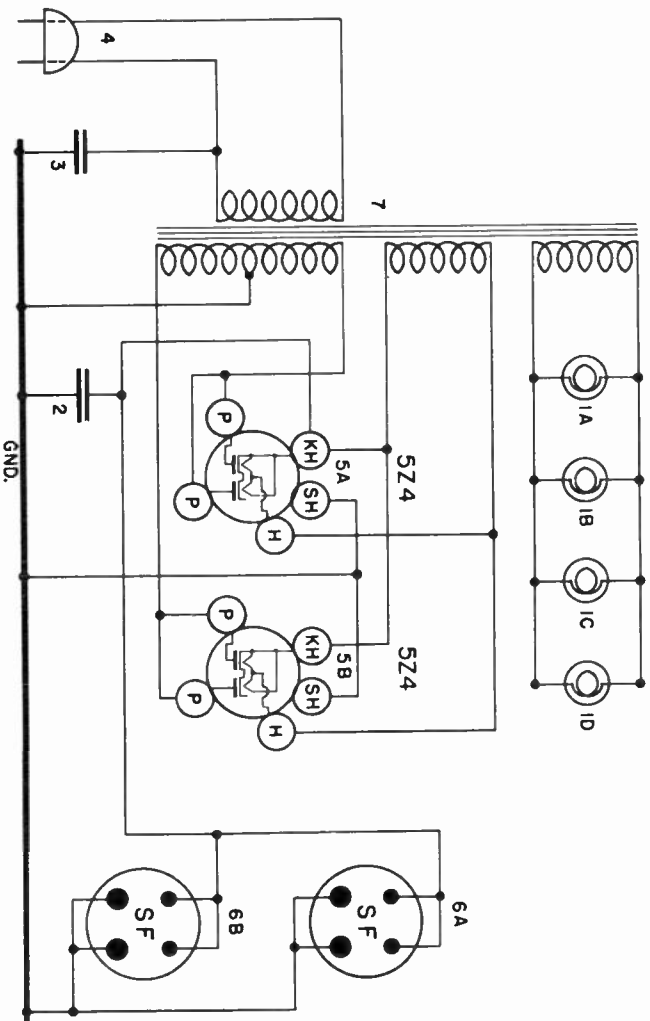
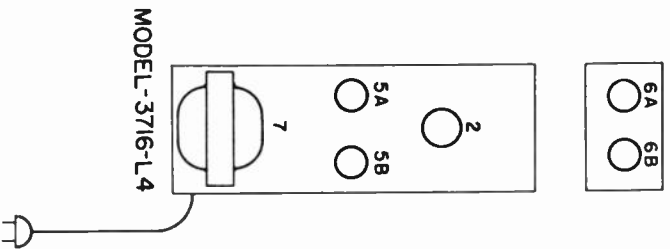


FIG. 11.

TUBE SOCKET VOLTAGE READINGS 1.5 VOLTS "A"—90 VOLTS "B"

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7GT	OSC. MOD.	GND.	1.5	85	47	-5	78	GND.	J.B.
1P5GT	1st I-F Amp.	GND.	1.5	36	85	N.C.	J.B.	GND.	N.C.
1N5GT	2nd I-F Amp.	GND.	1.5	85	85	N.C.	N.C.	GND.	J.B.
1H5GT	Det., AVC, 1st A-F	N.C.	1.5	13	N.C.	Diode	85 J.B.	GND.	N.C.
1Q5GT	Output	-5 J.B.	1.5	80	85	Grid	N.C.	GND.	N.C.

Initial bias = -5 volts measured across item 34—350 Ohms.

Power Output Approximately 450 M.W.

"A" Battery Drain = 350 M.A. @ 1.5 volts.

"B" Battery Drain = 15 M.A. @ 90 volts.

GND. = Ground. N.C. = No Connection. J.B. = Junction Block.

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and band switch to M. W. position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**Aligning the R-F Amplifier—Medium Wave Band**

(a) Connect the output lead of the signal generator through a .0002 mf. condenser to "A" terminal of the receiver and the ground lead to the "G" terminal.

(b) Turn band switch to medium wave (to the left looking at back of chassis), open condenser gang all the way, turn the volume control on full. Set signal generator to 1712 kilocycles—(175 meters).

(c) Adjust the M. W. Oscillator trimmer for maximum output. Gang should just tune thru 1712 kc. signal.

(d) Set signal generator to 1400 kilocycles (approx. 212 meters).

(e) With tuning knob on receiver tune in 1400 kc. generator for maximum output.

(f) Adjust the M. W. antenna trimmer condenser for maximum output.

(g) Repeat above procedure for more accurate alignment.

**No. 1—Short Wave Band**

Connect signal generator output lead to "A" terminal using a 250 ohm carbon resistor in place of the .0002 condenser for dummy antenna.

(a) Set signal generator to 7250 kilocycles (41.7 meters), open gang all the way, turn band switch to middle position (SW-1) and volume control on full.

(b) Adjust SW-1 Oscillator trimmer to 7250 kc. (close trimmer tight; the second peak reached on opening is the correct peak for 7250 kc. signal).

(1) Set the signal generator to 7000 kc. (42.7 m.) then tune in generator signal with tuning condenser.

(c) Adjust SW-1 antenna trimmer condenser for maximum output. Slowly rock the tuning condenser

back and forth while making this adjustment.

(d) Repeat above procedure for more accurate results.

**No. 2—Short Wave Band**

Use same dummy antenna as for No. 1 Short Wave band (250 ohm carbon resistor) open tuning gang all the way, volume on full, etc.

(a) Set signal generator to 23 megacycles (13.04 meters). Then adjust the SW-2 oscillator trimmer for maximum output by closing the trimmer condenser tight, then opening to the SECOND peak.

(b) Set signal generator to 22 megacycles (13.63 meters).

(c) Tune in generator signal (22 mc.) with gang; then adjust the SW-2 antenna trimmer condenser for maximum output. Slowly rock condenser gang while making this adjustment.

(d) Repeat (a) to (c) for more accurate adjustments.

NOTE: Make sure the short wave bands are aligned on the fundamental frequency which is approximately 910 kilocycles more than the fundamental. To check, increase signal generator output about 10 times and tune in the fundamental frequency, and then the image frequency, which will be approximately 910 kilocycles less than fundamental as indicated on the dial. In both cases image and fundamental frequencies (7 mc. and 5.9 mc. or 22 mc. and 20.90 mc.) can be heard but if correctly aligned the image frequency signal will be much weaker than the fundamental.

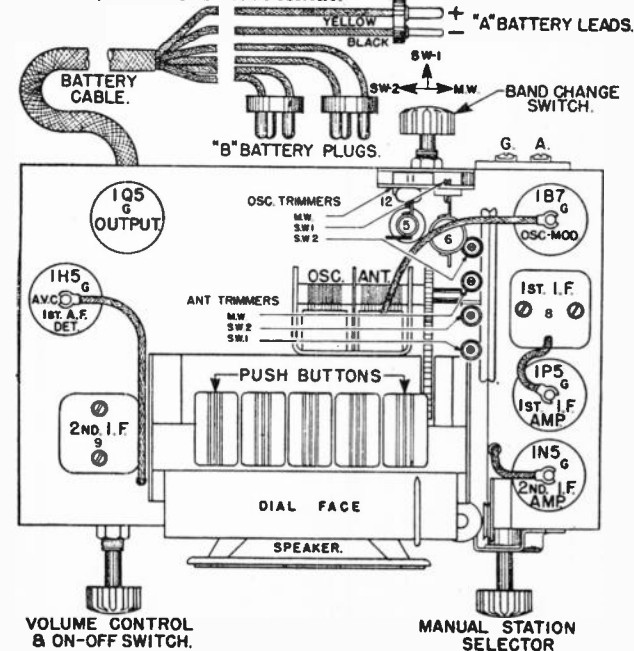


Fig. 2—Top View Model 5509





**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Go	Ga
12A8GT	Oscillator-Modulator	12	90	48	—	3	—4	90
12SK7GT	I-F. Amplifier	12	90	90	—	—	—	—
12SQ7GT	Det. AVC, A-F Amplifier	12	40	—	—	—	—	—
50L6GT	Output	50	84	90	—	6	—	—
35Z5GT	Rectifier	35	117.5	—	—	117	—	—

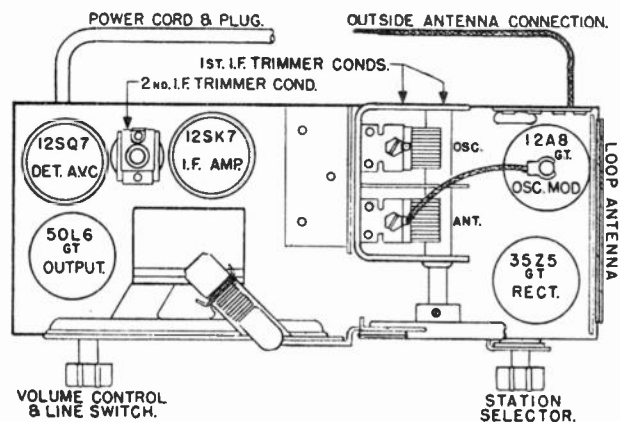
Power output approximately 2 watts.  
 Power consumption approximately 27 watts.  
 Voltage drop across speaker field 25 volts.  
 All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

**Tuning the I-F Amplifier To 455 Kilocycles.**

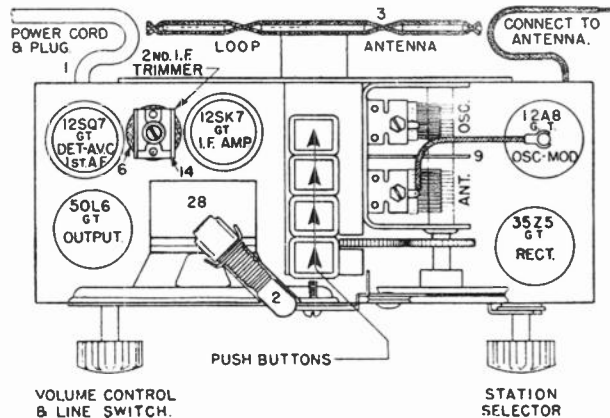
- Connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.
- Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust the 2nd I-F trimmer condenser, Item 14, located on top of coil (Fig. 2) for maximum reading on the output meter.
- Adjust the 1st I-F trimmer condensers located on the rear of chassis for maximum output.

**Aligning the R-F Amplifier.**

- Set the signal generator to 1725 kilocycles.
  - With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.
  - Set the signal generator to 1400 kilocycles.
  - Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.
  - Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.
- NOTE: Do not readjust the "OSC" trimmer.
- Repeat operations (d) and (e) for more accurate adjustments.



Models 5519, J-5519, 6519



Models 5529, J-5529

Fig. 2—Top View

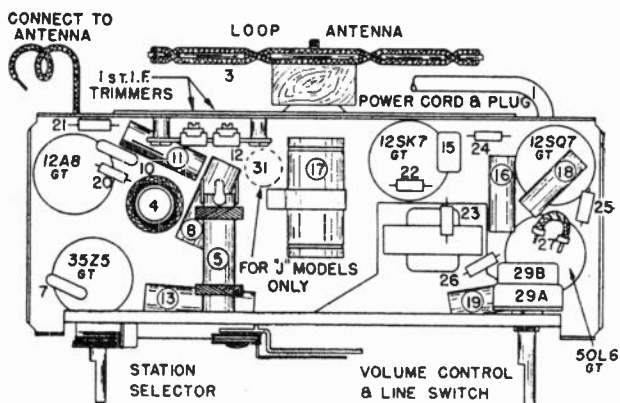


Fig. 3—Bottom View Models 5519, J-5519, 6519, 5529, J-5529

Sales No.	Cabinet No.	Color
519A	9EA	Mottled Brown
5519B	9EHA	Ivory
5519C	9EJA	Red
5519E	9EKA	Blue
5519F	9ELA	Tan
529A	9ED	Mottled Brown
5529B	9EE	Ivory
5529C	9EF	Red
5529D	9EL	Wood (Loop on Back)
5529D	9EG	Wood (Loop on End)
6519A	9EBB	Wood

For J Models prefix a J before sales NUMBER.

MODELS J5519, J5529, 6519

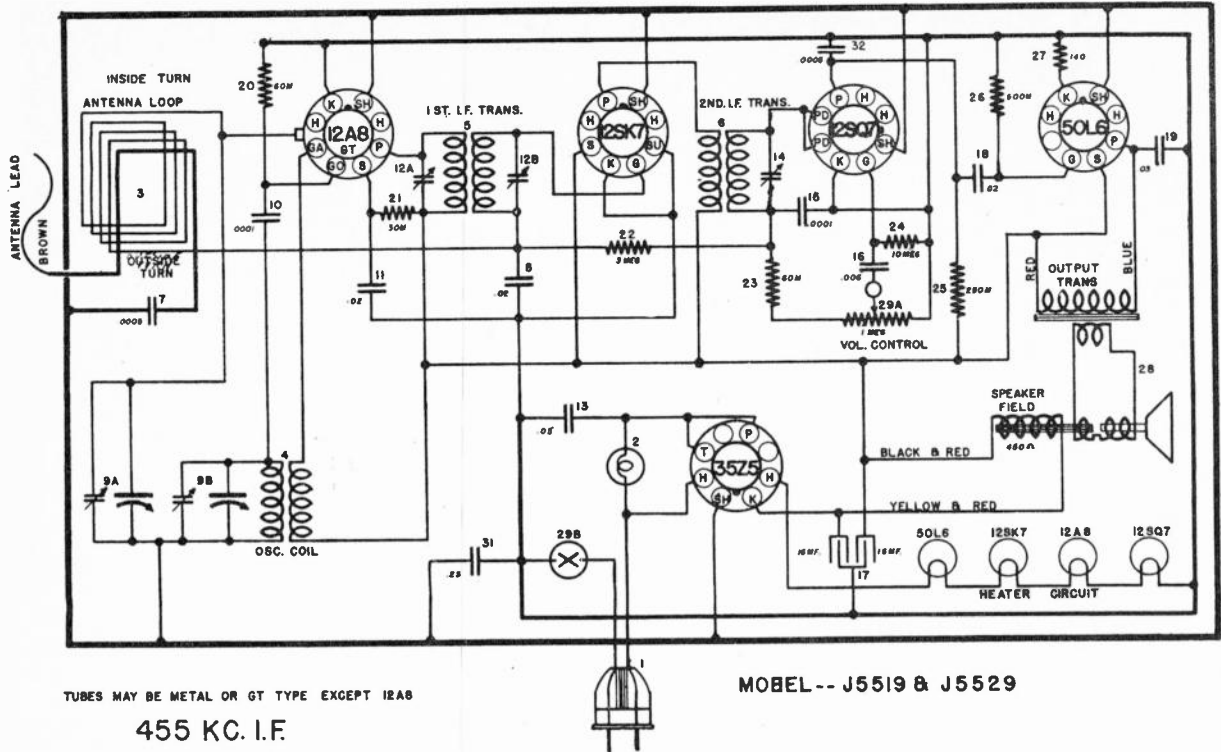


FIG. 1-B—WIRING DIAGRAM MODELS J-5519, J-5529

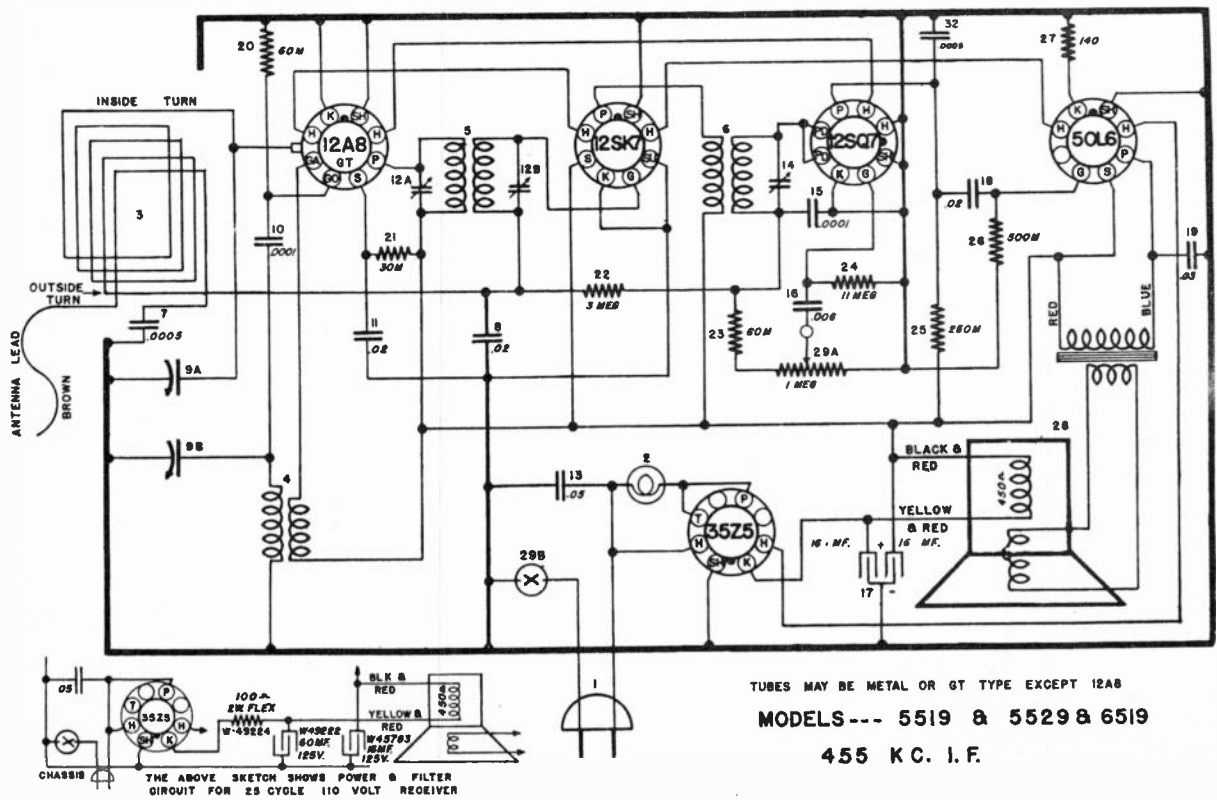


FIG. 1-A—WIRING DIAGRAM MODELS 5519, 5529 and 6519

**PARTS LIST MODELS—5519, J-5519, 6519, 5529, J-5529**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—45784	Power Cord and Plug		—47589	Push Button—Black
2	—45769	Power Cord and Plug—J Models		—47687	Pointer
	—4099	Dial Lamp		—47824	Push Button—Brown (for Wood Cab.)
	—48858	Dial Lamp—J Models		—47859	Call Letter Sheet—Black
	G6 —27134	Light Socket and Clamp Assy.		—47863	Call Letter Sheet—Brown
	—45756	Bracket—Dial Light Mtg.		—50551	Celluloid Cover—Call Letter Tab
	G3 —47431	Light Socket and Clamp Assy.—J Models	MG31—47561	Instruction Envelope Assy.—For 9FD and 9EG Cab.	
3	—48855	Bracket—Dial Light Mtg.—J Models	MG32—47561	Instruction Envelope Assy.—For 9EE, 9EF, 9ECA, 9ECB Cab.	
	G1 —47673	Loop Antenna—5519, 5529 (Spider Form)	9ED	Cabinet—Mottled Brown	
	G3 —47673	Loop Antenna—J5529 (Spider Form)	9EE	Cabinet—Ivory	
	G8 —47673	Loop Antenna—6519	9EF	Cabinet—Red	
	—49126	Loop Antenna—J-5519 (Pancake)	9ECA	Cabinet—Blue	
	—49126	Loop Antenna—Replaces G1-47673 and G3-47673	9EDA	Cabinet—Tan	
4	—49158	Asbestos Shield for Pancake Loops	9EL	Cabinet—Wood—For Rear Mtd. Loop	
	G186—32002	Oscillator Coil	9EG	Cabinet—Wood	
5	G219—32004	1st I-F. Coil only	—47737	Cabinet Back (Rear Mtg. Loop Sets)	
6	G218—32004	2nd I-F. Coil only	—47614	Cabinet Back—For 9EL or 9EG	
	G233—32004	2nd I-F. Coil only	—47598	Cabinet Back—Brown	
7	G3 —34002	Condenser, .0005 Mf. Mica	—47599	Cabinet Back—Ivory	
	—45780	Condenser, .02 Mf. 160 V.	—47600	Cabinet Back—Black	
8	—45780	Condenser, .02 Mf. 160 V.	—49416	Instruction Booklet	
	G74 —33001	2 Section Gang Cond.—5519, 6519, J-5519	—47603	Knob—Brown	
10	G73 —33001	2 Section Gang Cond.—5529, J5529	—44934	Knob—Black	
	G2 —34002	Condenser, .0001 Mf. Mica	—47615	Knob—For Cab. 9EG and 9EL	
11	—45780	Condenser, .02 Mf. 160 V.	B —130	Screw—FS18 or FS13—Back Mtg.	
12	—46738	1st I-F. Trimmer Cond. (Dual)	—20881	Screw—Back Mtg.—9EG and 9EL	
	—48446	1st I-F. Trimmer Cond. (Dual) J Models	—48758	Trimount Stud—Back Mtg. (FS18 or FS13)	
13	—45782	Condenser, .05 Mf. 120 V.	—47657	Shipping Carton	
14	—46653	2nd I-F. Trimmer Cond. (Single)	—47669	Shipping Carton—9EL Cab. only	
15	G2 —34002	Condenser, .0001 Mf. Mica	—47571	Shipping Carton—9EG Cab. only	
16	—45810	Condenser, .006 Mf. 160 V.	—44827	Screw—Chassis Mtg.—9EG and 9EL	
17	—46398	Condenser, 16-16 Mf. 125 V.	—30409	Flat Washer—Chassis Mtg.—9EG and 9EL	
18	—45780	Condenser, .02 Mf. 160 V.			
19	—50065	Condenser, .03 Mf. 160 V.			
20	—35928	Resistor, 60,000 Ohms 1/4W.	9EGA	<b>5519 AND J-5519</b> Cabinet—Mottled Brown	
21	—49004	Resistor, 30,000 Ohms 1/4W.	9EHA	Cabinet—Ivory	
22	—26577	Resistor, 3 Megohms 1/4W.	9EJA	Cabinet—Red	
23	—35928	Resistor, 60,000 Ohms 1/4W.	9EKA	Cabinet—Blue	
24	—50956	Resistor, 10 Megohms 1/4W.	9ELA	Cabinet—Tan	
25	—38976	Resistor, 250,000 Ohms 1/4W.	—47600	Cabinet Back—Black	
26	—36322	Resistor, 500,000 Ohms 1/4W.	—47599	Cabinet Back—Ivory	
27	—41759	Resistor, 140 Ohms 1/2W	B —130	Screw—Back Mtg. (FS13 or FS58)	
28	284-BL-5	Speaker	—48758	Trimount Stud—Back Mtg. (FS13 or FS58)	
	284-UL-5	Speaker—J Models			
29	—48217	Switch and Vol. Control—1 Meg.	—44934	Knob—Black	
	—46124	Switch and Vol. Control—6519 only	—45324	Knob—Ivory	
30	None		—49116	Handle—Black	
31	—47413	Condenser, .25 Mf. 160 V.—J Models only	—49117	Handle—Ivory	
32	G3 —34002	Condenser, .0005 Mf. Mica	—49161	Screw—Handle Mounting	
	—47631	Glass Dial—Face	—49373	Instruction Booklet	
	—46921	Speed Nut—Dial Mtg.	—49144	Shipping Carton—Single	
	MG9—47560	Bracket—Dial Background	—47572	Shipping Carton—Single (Nursery Model)	
	G17 —43564	Pulley and Hub Assy.	—49158	Heat Shield—J-5519	
	G18 —14582	Drive Cord (27 Inches)	—48443	Bottom Shield—J-5519	
	—46087	Spring—Cord Tension			
	—47559	Drive Shaft			
	—47557	Bracket—Drive Shaft Mtg.	9EBB	<b>6519 ONLY</b> Cabinet	
G26	—41582	Guide Cord (8 Inches)	—49386	Cabinet Back	
	—46848	Spring—Guide Cord Tension	—20881	Screws—Back Mounting (6)	
	—46290	Cord Clamp—Drive Cord	—49372	Shipping Carton	
	—47582	Pointer—Dial Hand	—45020	Flat Washer—Chassis Mtg. (3) (FS58)	
			—44392	Screw—Chassis Mtg. (3) (FS58)	
			—49385	Knob	
G36 —45683	<b>5529—J5529—MISCELLANEOUS</b> Push Button Tuning Unit		—48432	Block—Upper Dial Mtg.	
G59 —45683	Rocker Plate and Gear Assy.		—48433	Block—Lower Dial Mtg.	
	—50561	Screws—Rocker Bearing	—49373	Instruction Booklet	
G58	—45683	Riveted Key Assy.			
	—45717	Screw—Station Setting			
	—50607	Spring—Key Return			
	—50542	Clamp—Toggle Lock			
	—47591	Push Button—Brown			

VOLTAGE READINGS—WITH 90 VOLTS "B" AND 6 VOLTS "A"

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.5	95	54	Neg.	95	—	—
1N5GT	I-F Amplifier	0	4.5	95	95	—	—	3.0	—
1H5GT	Det, AVC, 1st Audio	0	3.0	15	15	—	—	1.5	8 J.B.
1A5GT	Output	0	6.0	92	95	—	8 J.B.	1.5	—
117 Z6GT	Rectifier	0	0	0	95	0	0	0	6.0

Power Output approximately 600 M. W.  
 "A" Battery Drain 50 M. A.  
 "B" Battery Drain 8.7 M. A.

VOLTAGE READINGS—@ 117.5 VOLT LINE (A. C.)

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.4	104	62	-3	104	—	—
1N5GT	I-F Amplifier	0	4.5	104	101	—	—	3.0	—
1H5GT	Det, AVC, 1st Audio	0	3.0	17	17	—	Diode	1.5	50 J.B.
1A5GT	Output	0	6.0	100	101	—	30	4.5	—
117 Z6GT	Rectifier	58.5 A.C.	117.5 A.C.	117.5 A.C.	135	117.5 A.C.	0	0	124

Power Output approximately 900 M. W.  
 Watts @ 117.5 volts 30 watts.  
 Above readings will be approximately 10% less when checked on D.C. power circuit.

Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of the 1A7GT oscillator-modulator tube leaving the tube's grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a

.0001 mf. condenser to RED wire connecting to the loop and the ground lead to the receiver chassis (through a condenser).

Before aligning receiver check the position of the pointer by opening gang all the way, the pointer should then split the 1600 kilocycle calibration point.

(a) Set the signal generator to 1400 kilocycles.

(b) Tune gang to 140 on the dial, then adjust oscillator trimmer (rear section of gang) for maximum output.

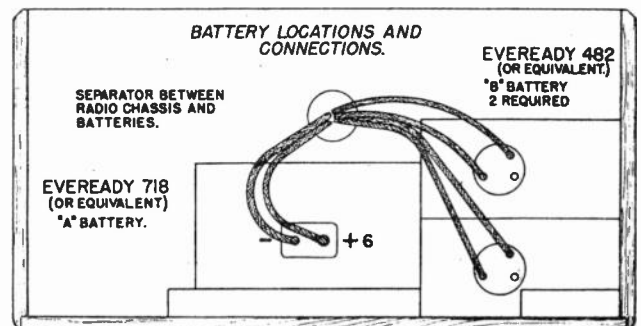
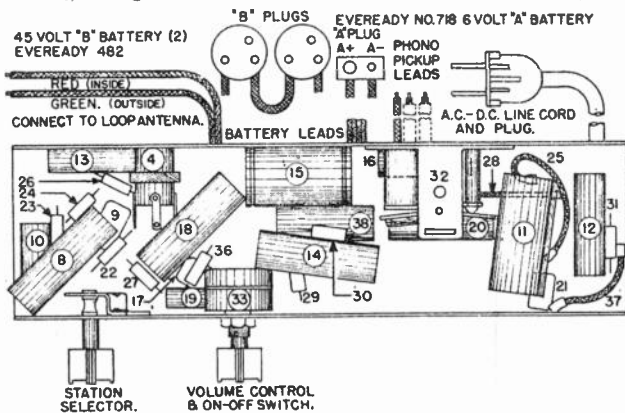
(c) Adjust antenna trimmer (front section gang) for maximum output.

RELAY

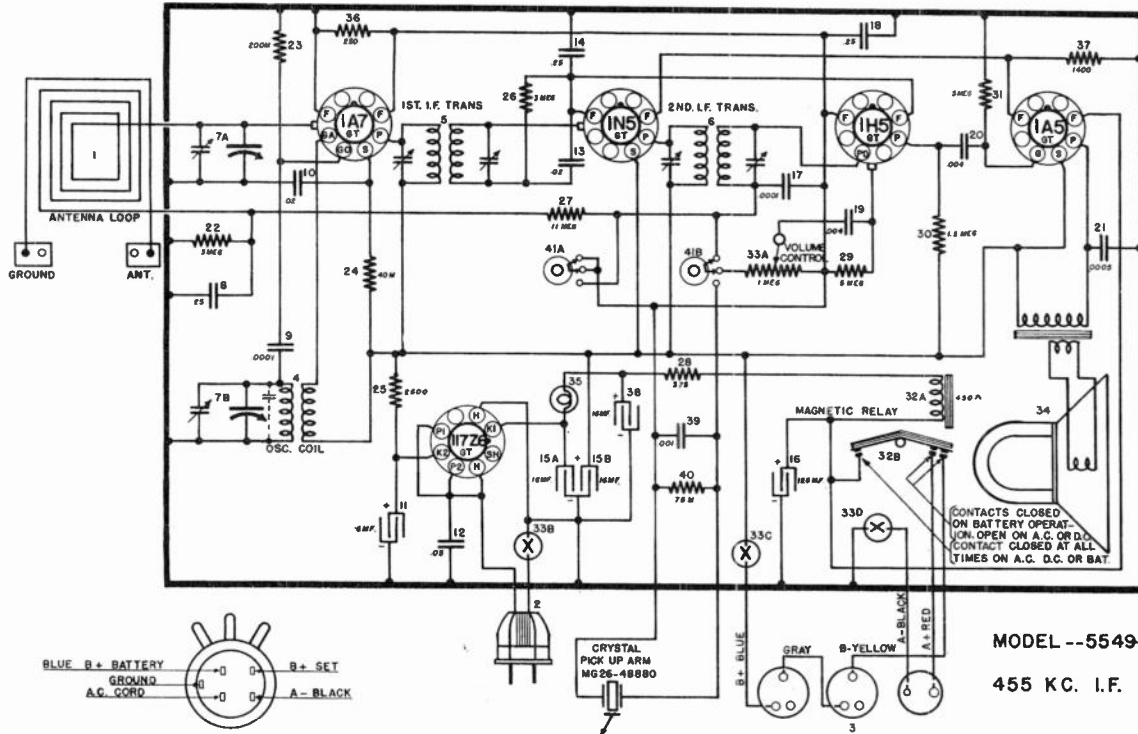
The receiver, when plugged into 110 volt circuit, will operate on the batteries until rectifier arms up and trips the relay. When relay trips there should be no decrease or dead spot in output as rectifier should be warmed up sufficiently to carry load and give a slight increase in output due to higher plate voltage available.

The relay is insulated from the chassis and care should be exercised when probing so as not to short it.

In earlier models the relays have three sets of contacts and the single side must make contact at all times. The double side must make contact when batteries are used and both contacts (double contact side) must break when operated on 110 volt circuits. Later models the single contact side was omitted and a flexible braid connection used instead.



MODEL 5549



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	—48969	Loon Antenna	37	—27503	Resistor, 1,400 Ohms 3/4 W. Flex.	
2	—48698	A. C.-D. C. Power Cord and Plug	38	—45783	Condenser, 16 Mf. 125 V. Elect.	
3	—48872	Battery Cable	39	—30270	Condenser, .001 Mf. 400 V.	
4	G209—32002	Oscillator Coil	40	—36319	Resistor, 75,000 Ohms 1/4 W.	
5	G194—32004	1st I.F. Transformer Assembly	41	—48933	Phono-Radio Switch	
6	G195—32004	2nd I.F. Transformer Assembly		—49173	Bracket—Switch Mtg.	
7A	G88—33001	2 Section Var. Cond. (Antenna Sect. Oscillator Sect.)			<b>PHONO PARTS</b>	
7B					—48904	Phono Motor (Spring Type)
	—48431	Dial Face		—49642	Motor Spring only	
	—6415	No. 8—32 x 1/4" W. Hd. Screw (Dial Face)		—48916	Center Stud (Motor)	
	( )	—8		—48917	Crank (Motor)	
	—43549	Flat Washer (Dial Face)		—48918	Turntable (Plate)	
	—48695	Retaining Ring (Drive Shaft)		—48918	Motor Mounting Board	
	—44808B	Drive Shaft	R	—165	No. 8—32 x 1/4" Screws—Motor Mtg.	
	—6876	Drive Shaft Bracket		—48915	Spacer—Motor Mtg.	
	G19—41582	Screw (Drive Shaft Bracket) (2 Req.)		—48911	Rubber Washer—Motor Mtg.	
	—44989	Drive Cord (17')		—48912	Flat Washer—Motor Mtg.	
	—46920	Drive Cord Spring		—48913	Drive Washer—Motor Spindle	
	—49113	Drive Cord Clamp		—48914	Rubber Spindle Cover—Motor Spindle	
	—49111	Dial Pointer		—48906	Turntable Stop	
	—20800	No. 6—32 x 1/4" Gulmit Screw (Dial Pointer)		—48909	Speed Indicator Arm	
	—51108A	Shakeproof Washer (Dial Pointer)		—48910	Speed Escutcheon (Plate)	
8	—34712	8 Prong Socket (No Marking)		—48907	Crank Handle Escutcheon	
9	G2—34002	Condenser, .25 Mf. 160 V. Paper		—48908	Escutcheon Washer	
10	—28621	Condenser, .0001 Mf. Molded		—48905	No. 3 x 3/4" Wood Screw—Escut. Mtg.	
11	—46128	Condenser, .02 Mf. 200 V. Paper		—48988	Tone Arm (Pickup)	
12	—23615	Condenser, 16 Mf. 250 V. Elect.		—47328	Shakeproof Washer—Pickup Mtg.	
13	—28621	Condenser, .05 Mf. 400 V. Paper		—47329	Nut—Pickup Mtg.	
14	—34712	Condenser, .02 Mf. 200 V. Paper		—47324	Needle Screw	
15	—46398	Condenser, 25 Mf. 160 V. Paper		—47325	Crystal Cartridge only	
	—48562	Condenser, 16 Mf. 125 V. Elect.		—47326	Arm and Pivot only	
16	G2—34002	Condenser, .125 Mf. 7 1/2 V. Elect.	G216—34403	Phono Lead Assy.		
17	—34712	Condenser, .0001 Mf. Molded		—48932	Bracket—Arm Rest	
18	—28504	Condenser, .25 Mf. 160 V. Elect.		—47335	Rubber Locking Ring	
19	—28504	Condenser, .004 Mf. 200 V. Paper	R	—156	Screw—Bracket Mtg.	
20	—34002	Condenser, .004 Mf. 200 V. Paper		—46364	Chromium Tipped Needle	
21	G3—34002	Condenser, .0005 Mf. Molded		—48985	Needle Cup and Cover	
22	—36688	Resistor, 3 Megohms 1/4 W. Ins.		—7666	No. 6 x 3/4" Ov. Hd. Screw—Phono Board Mtg.	
23	—35930	Resistor, 200,000 Ohms 1/4 W. Ins.		—48981	Cup Washers—Phono Board Mtg.	
24	—36761	Resistor, 40,000 Ohms 1/4 W. Ins.			<b>MISCELLANEOUS PARTS</b>	
25	—30960	Resistor, 2,600 Ohms 1 1/2 W. Flex.		9EFA	Cabinet	
26	—36688	Resistor, 3 Megohms 1/4 W. Ins.		—48850	Lid Catch	
27	—48693	Resistor, 11 Megohms 1/4 W. Ins.		—48845	Hinge—Lid	
28	—21965	Resistor, 375 Ohms 1 W. Flex.		—48847	Leather Handle	
29	—47131	Resistor, 5 Megohms 1/4 W. Ins.		—48846	Handle Mtg. Bracket (2 Req.)	
30	—48692	Resistor, 1 1/2 Megohms 1/4 W. Ins.		—48848	Back Plate—Handle Mtg. Bracket	
31	—47131	Resistor, 5 Megohms 1/4 W. Ins.		—48852	Shipping Carton	
32A	MC26—48390	Relay Coil		—48854	Rubber Foot (4 Req.) Cab. Bottom	
32B	—49201	Relay Switch		—49544	Rubber Foot (5 Req.) Cab. Side	
33A		Relay Insulator Strip	S	—159	Screw—49544 Foot Mtg.	
33B		Volume Control, 1 Megohm		—48705	Knob—Tuning—Phono Switch	
33C	—48694	A. C.-D. C. Switch		—48719	Knob—Volume Control	
33D		B+ Battery Switch		—48605	Speaker Screen	
	—46662	Relay—Ground		—48691	Dial Lens (Celluloid)	
34	392-PL-6"W"	Pal Nut		—48720	"Off" Indicator Tack	
	—48800	Speaker, Spec.		—44772	No. 8 x 1 1/4" P.K. Screw—Chassis Mtg.	
	—48801	V. C. and Cone Assy.		—30409	Washer—Chassis Mtg.	
35	MC34—48390	Output Transformer		—49256	Crank Hole Eyelet	
	G1—49274	Dial Light Bulb, 110 Volt				
	MC33—48390	Dial Light Socket				
36	—51085	Dial Lamp Shield Assy.				
		Resistor, 250 Ohms 1/4 W. Ins.				

MODEL 6615

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	150	85	-2	0	—	—
6A7	Osc.-Modulator	5.8	150	85	-2	0	120	-5 to -15
6B7	I-F Amp. & Detector	5.8	150	85	-2	0	—	—
15	A-F Amplifier	2.0	70	15	-2	0	—	—
38	Output	5.8	145	150	0	12	—	—
31	AVC Diode	2.0	—	—	—	—	—	—

"A" Battery Drain Approximately 2.5 Amperes.

Power Output Approximately .9 Watt.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 38 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Set the middle trimmer condenser (SEC) on the 1st I-F transformer. (Fig. 2).

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers (TERT and PRI) of the 1st I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(1) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

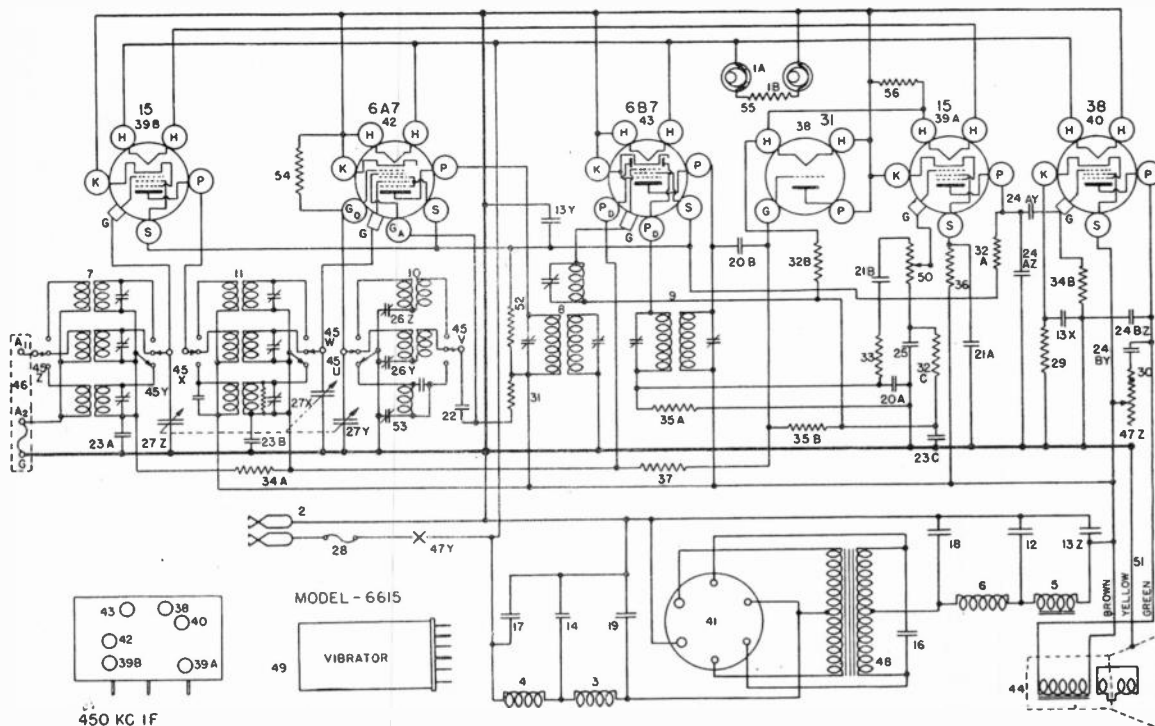
2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the Correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers (Illus. Nos. 53 top view, 26Z and 26Y side view, Fig. 2) set the signal generator to the frequency indicated and then tune-in



this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning

condenser back and forth slightly, until no further improvement in output can be obtained.

SIGNAL INPUT FREQUENCIES

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
High Frequency Band (GREEN)	6000 Kc.	2500 Kc.





TUBE SOCKET VOLTAGE READINGS										
Tube	Function	H	P	P2	S	Su	G	K	Go	Ga
6A7	Osc.-Modulator	6.3	265	—	100	—	0	5.0	0	140
6D6	I-F Amplifier	6.3	265	—	120	—	0	6.2	0	—
6C6	Det. & A-F Amplifier	6.3	0	—	75	2.6	0	2.6	—	—
76	2nd. A-F Amplifier	6.3	140	—	—	—	0	10.0	—	—
6B5	Output	6.3	270	255	—	—	0	2.3	—	—
80	Rectifier	4.9	350	—	—	—	—	—	—	—

MEASURED ON 117.5 VOLT—80 CYCLE POWER SUPPLY.  
POWER CONSUMPTION APPROXIMATELY 80 WATTS.  
POWER OUTPUT APPROXIMATELY 3 WATTS.

**Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6D6 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Turn the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum output (Fig. 2).

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(e) Transfer the output lead of the signal generator from the 6D6 tube to the top cap of the 6A7 Oscillator-Modulator tube, leaving the tube's grid clip in place.

(f) Close the middle trimmer (Tert. Fig. 4) on the 1st I-F transformer so that it is moderately tight. (Do not force adjusting screw).

(g) Adjust the top trimmer on the 1st. I-F transformer for maximum output.

(h) Adjust the bottom trimmer on the 1st. I-F transformer for maximum output.

(i) Transfer the signal generator output lead from the 6A7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom trimmer of the 1st. I-F transformer. DO NOT READJUST THE

**TOP TRIMMER.**

(k) Adjust the middle trimmer of the 1st. I-F transformer by opening condenser until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

**Aligning R-F Amplifier**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers (29Y-29Z Fig. 4) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

American Broadcast Band (BLUE)	Shunt Alignment	Series Alignment
Police Band (RED)	1700 Kilocycles	800 Kilocycles
High-Frequency Band (GREEN)	6000 Kilocycles	2500 Kilocycles
	18000 Kilocycles	.....

**SHUNT TRIMMERS**

	Ant.	Osc.	
High-Frequency	27A	27B	High-Frequency
Police	28Z	28X	Police
Broadcast	28Y	28W	Broadcast

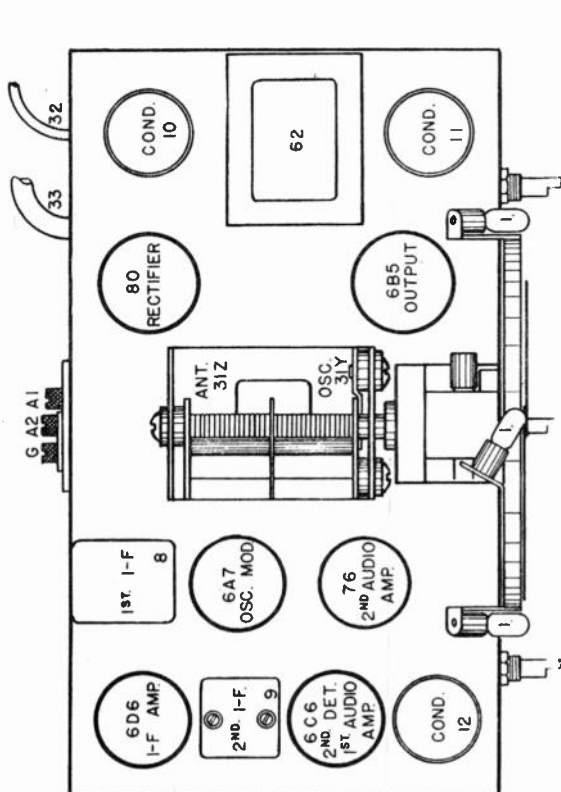


Fig. 2. Top View 6625

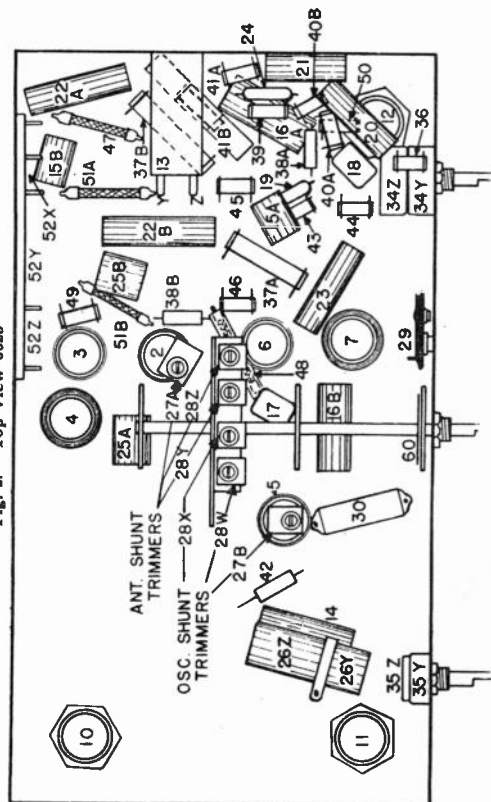


Fig. 3. Bottom View 6625

MODEL 6625

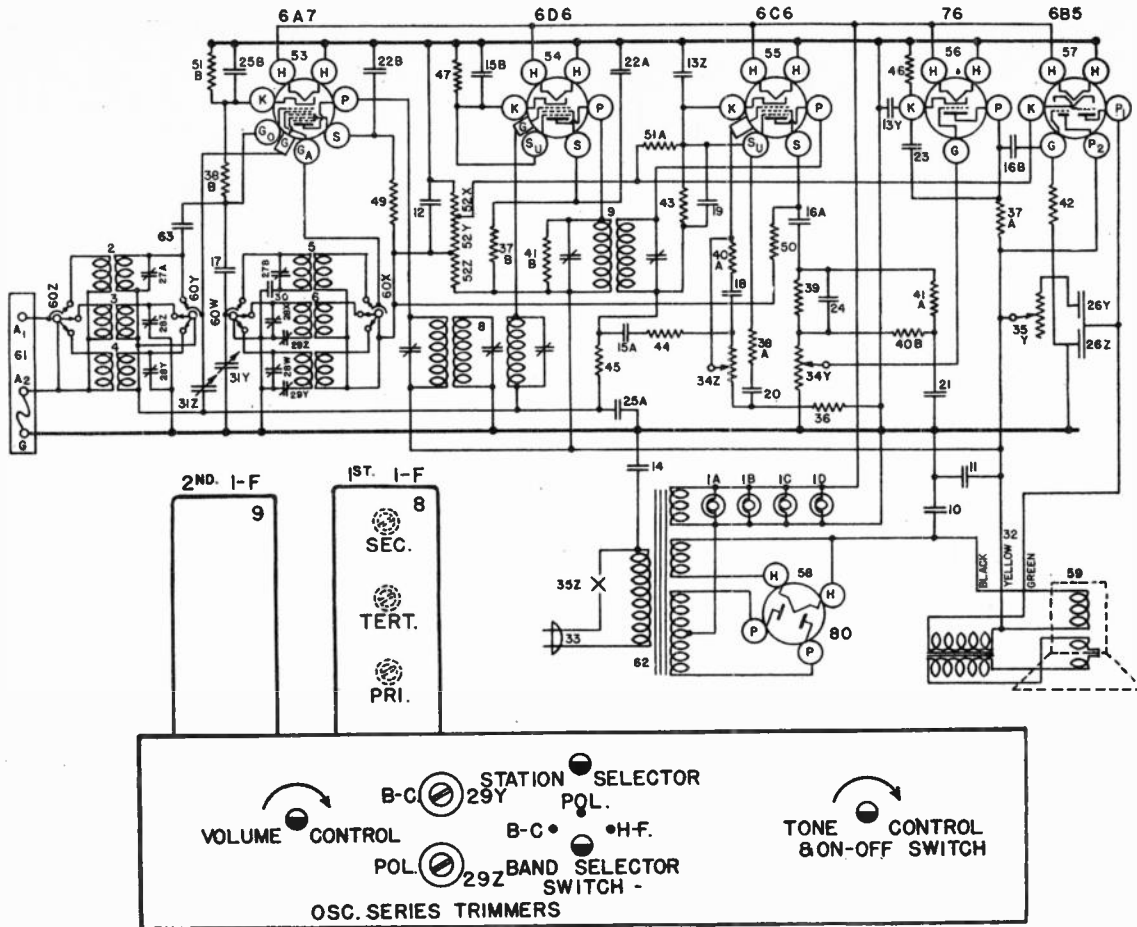


Fig. 4. Front View 6625

Figures in first column refer to parts in Diagrams.

Item	Part No.	Name Description	Item	Part No.	Name Description
1A	W-37922	Bulb, Dial Light	38A	-38781	Resistor 40,000 Ohm, 1/4 W., Insul.
1B	W-37922	Bulb, Dial Light	38B	-38781	Resistor 40,000 Ohm, 1/4 W., Insul.
1C	W-37922	Bulb, Dial Light	39	-21454	Resistor, 1 Megohm, 1/4 W.
1D	W-37922	Bulb, Indicator Light	40A	-34020	Resistor 250,000 Ohm, 1/4 W.
2	G92-32000	Coil, Ant. 6000-18000 Kc.	40B	-34020	Resistor 250,000 Ohm, 1/4 W.
3	G90-32000	Coil, Ant. 1800-6000 Kc.	41A	-37590	Resistor, 750,000 Ohm, 1/4 W.
4	G91-32000	Coil, Ant. 540-1800 Kc.	41B	-37590	Resistor, 750,000 Ohm, 1/4 W.
5	G84-32002	Coil, Osc. 6000-18000 Kc.	42	-36322	Resistor, 500,000 Ohm, 1/4 W.
6	G83-32002	Coil, Osc. 1800-6000 Kc.	43	-33344	Resistor, 400,000 Ohm, 1/4 W.
7	G82-32002	Coil, Osc. 540-1800 Kc.	44	-23403	Resistor, 150,000 Ohm, 1/4 W.
8	G94-32004	Coil, 1st I-F Assm.	45	-37245	Resistor, 1.5 Megohm, 1/4 W.
9	G93-32004	Coil, 2nd I-F Assm.	46	-21876	Resistor, 10,000 Ohm, 1/4 W.
10	W-38055	Condenser, 35 mfd., 400 V.	47	W-22514	Resistor, 750 Ohm, 1/4 W., Flex.
11	W-38057	Condenser, 40 mfd., 300 V.	48	W-24537	Resistor, 60 Ohm, 1/4 W., Flex.
12	W-40325	Condenser, 50 mfd., 150 V.	48	-22831	Resistor, 15,000 Ohm, 1/4 W.
13Z	W-37778	Condenser, 12 mfd., 25 V.	50	-21875	Resistor, 100,000 Ohm, 1/4 W.
13Y	W-37778	Condenser, 12 mfd., 25 V.	51A	W-28106	Resistor, 500 Ohm, 1/4 W., Flex.
14	W-30805	Condenser, .01 mfd., 400 V.	51B	W-28106	Resistor, 500 Ohm, 1/4 W., Flex.
15A	W-38541	Condenser, .02 mfd., 160 V.	52Z	-37829	Resistor, 10,000 Ohm
15B	W-38541	Condenser, .02 mfd., 160 V.	52Y	-37829	Resistor, 25,000 Ohm
16A	W-32780B	Condenser, .05 mfd., 400 V.	52X	-37829	Resistor, 65 Ohm
16B	W-32780B	Condenser, .05 mfd., 400 V.	G47-28807		Socket, 6A7 Type
17	G1-34002	Condenser, .00025 mfd., (molded)	G75-28807		Socket, 6D6 Type
18	G6-34002	Condenser, .00025 mfd., (molded)	G74-28807		Socket, 6C6 Type
19	G2-34002	Condenser, .0001 mfd., (molded)	G80-28807		Socket, 76 Type
20	W-30323	Condenser, .01 mfd., 200 V.	G90-28807		Socket, 6B5 Type
21	W-37988	Condenser, .017 mfd., 200 V.	G6-28807		Socket, 80 Type
22A	W-23142	Condenser, .02 mfd., 400 V.	B-37918		Speaker, Spec. 532-BJ-3
22B	W-23142	Condenser, .02 mfd., 400 V.	60	-37906	Switch, 2 Sec. Band Selector
23	W-27540	Condenser, .0005 mfd., 400 V.	G27-26719		Terminal Board, Ant. & Grnd.
24	G5-34002	Condenser, .00005 mfd., (molded)	G15-28500		Transformer, Power 110-60 Cy.
25A	W-35936	Condenser, .05 mfd., 200 V.	G16-28500		Transformer, Power 110-25 Cy.
25B	W-35936	Condenser, .05 mfd., 200 V.	G17-28500		Transformer, Power 220-25 Cy.
26Z	W-31052	Condenser, .004 mfd., 400 V.	W-35774		Base, Tube Shield
26Y	W-31052	Condenser, .05 mfd., 400 V.	W-40531		Belt, Drive
27A	W-37954	Condenser, H-F Ant Shunt Trim.	W-22334		Cable, Indicator Control
27B	W-37954	Condenser, H-F Ant Shunt Trim.	W-35773		Cap., Tube Shield
28Z		Condenser, Pol. Ant. Shunt Trim.	40537		Coupling, Flexible Drive
28Y		Condenser, B-C Ant. Shunt Trim.	-37947		Dial Assy., Complete
28X	W-37822A	Condenser, Pol. Osc. Shunt Trim.	W-40545		Diffuser, Light
28W		Condenser, B-C Osc. Shunt Trim.	C-37894		Escutcheon, Cabinet
29Z		Condenser, Pol. Osc. Series Trim.	C-37969		Face, Celluloid Dial
29Y		Condenser, B-C Osc. Series Trim.	C-37968		Face, Glass Dial
30	G17-34000	Condenser, .0053 mfd. H-F Osc.	W-40365		Gasket, Escutcheon Felt
31Z	G19-33001	Condenser, Var. Tuning Gang	40485		Hand, Long
31Y		Cable, Speaker	40484		Hand, Short
32	G4-35696	Cable & Plug, Power Supply	W-37339		Knob, 3 required
33	B-33906A	Vol. Cont., 1st A-F Control, 3 Meg	W-40192		Knob, 1 required
34Z	37907	Vol. Cont., 2nd A-F Control, 1 Meg	B-37898		Lens, Dial
34Y		Control, Tone	W-37909		Pulley, Indicator Cable
35Y	-37908	Switch, On-Off	W-35772		Shield, Tube (Half)
35Z		Resistor, 300,000 Ohm, 1/4 W.	W-37814		Shield, Dial Light
36	-21455	Resistor, 100,000 Ohm, 1 W.	G2-37965		Socket, Dial Light
37A	-5469A	Resistor, 100,000 Ohm, 1 W.	G3-37965		Socket, Indicator Light
37B	-5469A	Resistor, 100,000 Ohm, 1 W.	B-37896		Spring, Escutcheon Retaining
			B-37897		Spring, Dial Lens Retaining

# MODEL 6689

This model is very similar to Model 689 receiver except for the tube compliment, ballast resistor and the slight change in rectifier circuit. This receiver is designed for 220 volt D.C. or A.C. (50-60 cycle) operation.

For replacement parts not listed below refer to parts list for Model 689.

The alignment procedure is the same as outlined for the 689, but for the following exceptions:

The OUTPUT meter is connected to the plate and screen of the 50L6GT.

The signal generator input for I-F alignment is connected to the "ANT" lead (Blue) through a 100 MMF. condenser.

Tube	Function	TUBE SOCKET VOLTAGE READINGS						
		H	P	S	Su	K	Go	Ga
12A8GT	Oscillator-Modulator	6.3	105	70	—	—	-10	105
12K7GT	Det, AVC, A-F Amplifier	6.3	105	70	—	—	—	—
12SQ7GT	I-F Amplifier	6.3	35	—	—	—	—	—
50L6GT	Output	25.1	100	105	—	6	—	—
32Z5GT	Rectifier	25.1	117.5 A.C.	—	—	132	—	—
G11-48392	Ballast Tube							

Power output approximately 2 watts.

Power consumption approximately 60 watts.

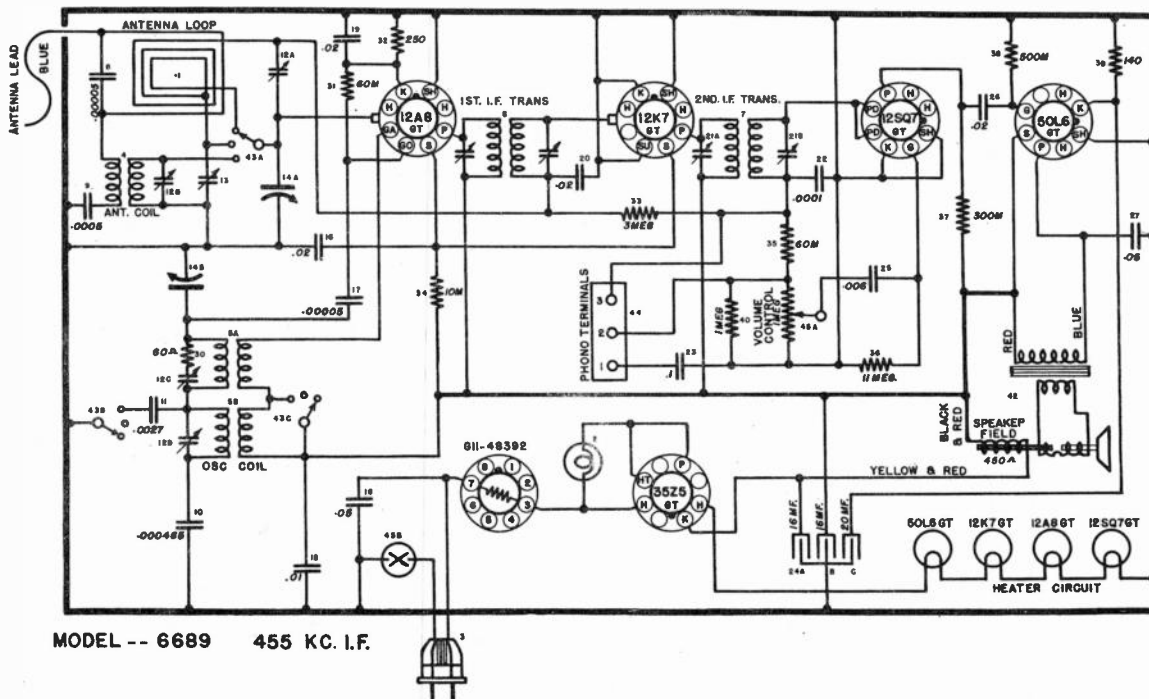
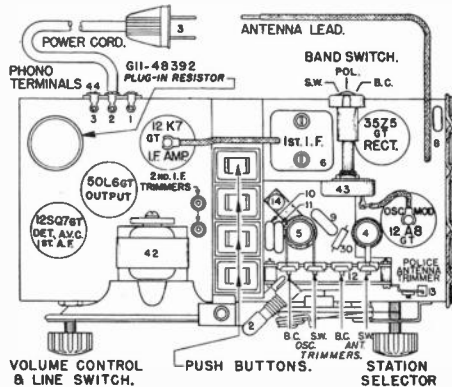
Voltage drop across speaker field 27 volts.

All voltages except filaments will be approximately 10% lower if measured on 230 volts DC power supply.

### PARTS LIST—MODEL 6689

For parts not listed refer to Model 689 Parts List.

Item		
9	G3-34002	Cond. .0005 MF. Molded
18	W-32780-B	Cond. .05 MF. 400 V.A.C.
32	51085	Res. 250 ohm ½ W. Wire Wound Ins.
40	35602	Res. 1 Meg. ¼ W. Ins.
	130105	Instruction Booklet
	G247-45800	Tube 12A8GT
	G249-45800	Tube 12K7GT
	G245-45800	Tube 12SQ7GT
	G244-45800	Tube 50L6GT
	G248-45800	Tube 35Z5GT
	G11-48392	Plug In Resistor
	48240	Call Letter Sheet



**1. Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8GT Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers on the second I-F assembly for maximum output accessible from bottom of chassis.

(e) Adjust both trimmers on the first I-F assembly for maximum output. Accessible from bottom of chassis on models A-150, A-350—top of first I-F can on A-450.

(f) Repeat (d) and (e) for more accurate adjust-

ments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2. Aligning R-F Amplifier**

(a) Connect the output lead from the signal generator through a .00007 or .0001 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

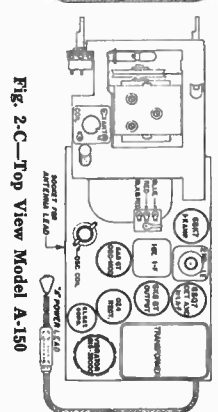
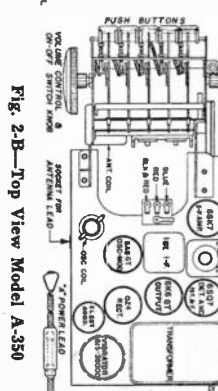
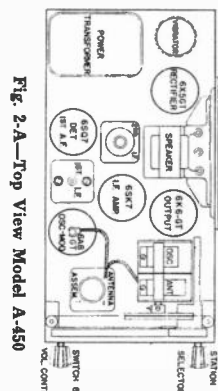
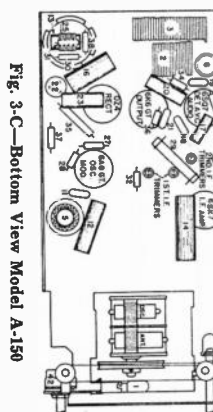
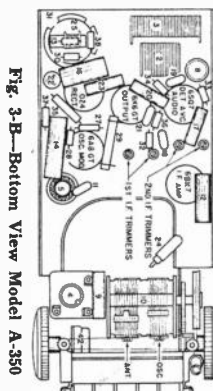
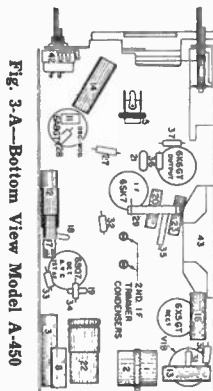
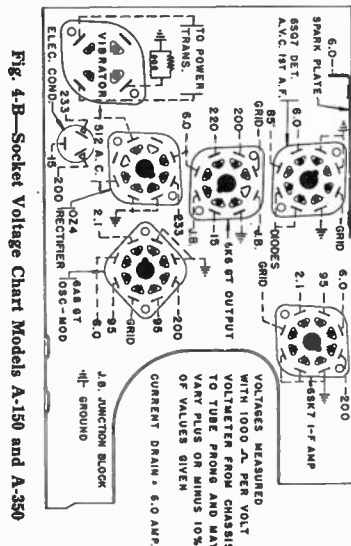
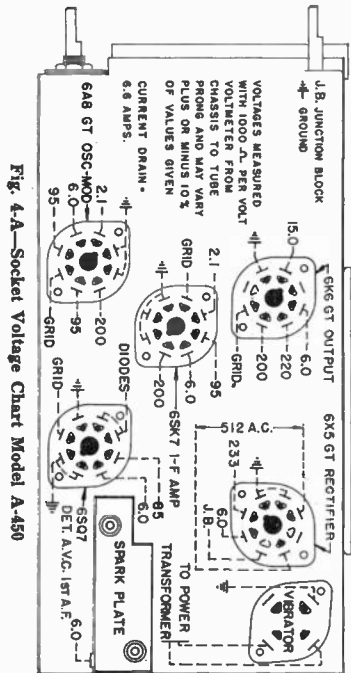
(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

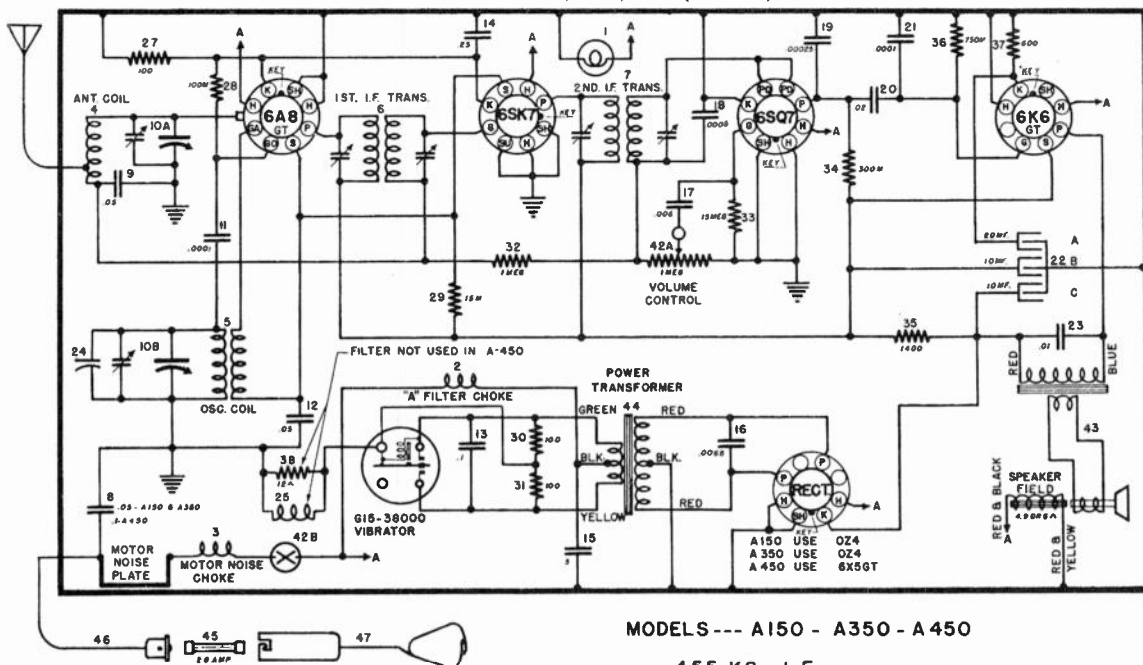
(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.



MODELS A-150, A-350, A-450 (ROAMIO)



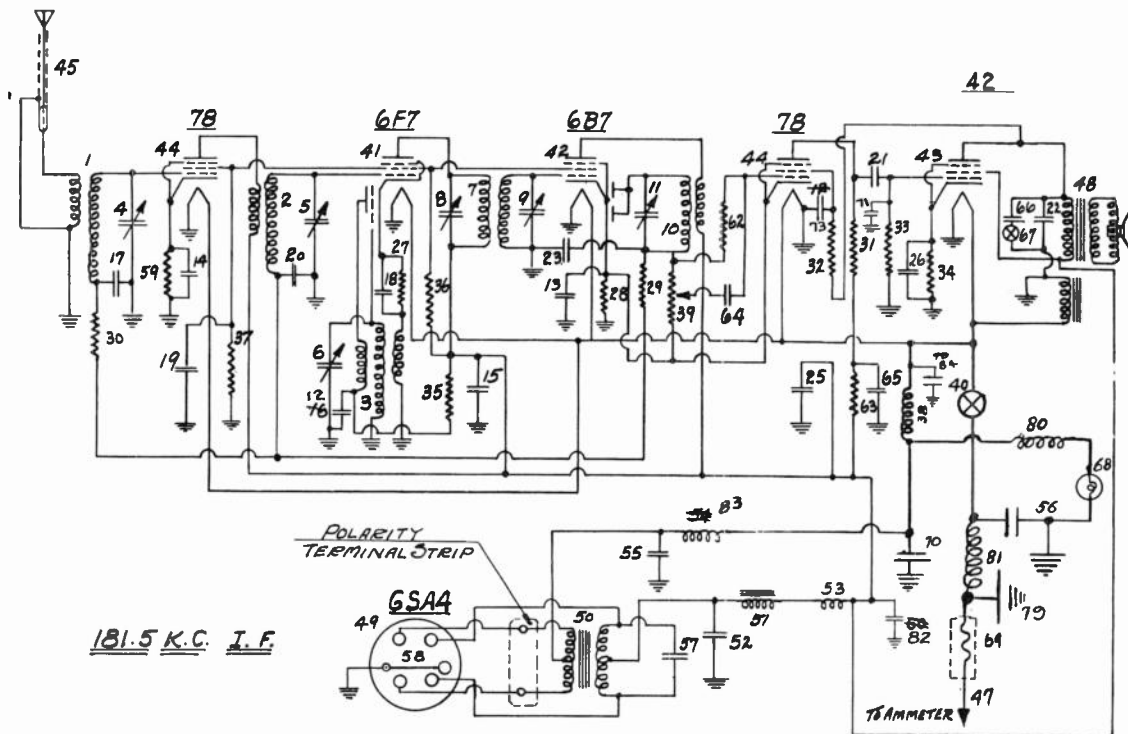
MODELS --- A150 - A350 - A450

455 KC. I. F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G3 -50631	6-8 Volt Dial Lamp (A-150)	W	-50167	Rear Mounting Bracket
	G4 -50631	6-8 Volt Dial Lamp (A-350)		-6213	1/4"-20 Hex. Nut-Bracket Mtg.
	G2 -50631	6-8 Volt Dial Lamp (A-450)		-35065	1/4"-20 x 1 1/2" Sq. Hd. Bolt-Bracket Mtg.
2	G32 -28067	"A" Filter Choke (A-150, A-350)	W	-38205	1/2" Lockwasher-Bracket Mtg.
	G34 -28067	"A" Filter Choke (A-450)		-25846	No. 10 x 3/4" P. K. Screw Mtg.
	G23 -32977	Motor Noise Choke (A-150, A-350)	U	-51715	Front Mtg. Bracket (A-150)
	G25 -32977	Motor Noise Choke (A-450)		-25788	No. 8 x 3/4" P. K. Screw-Bracket to Case (A-150, A-350)
3	G194 -32000	Antenna Coil	O	-10	No. 10 Flat Washer-Bracket Mtg. (A-150, A-350)
4	G200 -32002	Oscillator Coil (A-150, A-450)	W	-51177	Front Mtg. Bracket (A-350)
	G225 -32002	Oscillator Coil (A-350)			<b>MODEL A-150 MISCELLANEOUS</b>
5	G239 -32004	1st I-F. Assy. (A-150, A-350)	MG2	-51640	Case Assembly Complete
	G224 -32004	1st I-F. Assy. (A-450)		-51655	Case Body only (FS-11 and FS-79)
6	G223 -32004	2nd I-F. Assy. (A-150)		-51656	Front Cover-Case (FS-11 and FS-79)
	G226 -32004	2nd I-F. Assy. (A-350)	W	-51184	Lid-Case (FS-11 and FS-79)
	G225 -32004	2nd I-F. Assy. (A-450)		-34796	Hole Plug (FS-79)
7	W	-35936	C	-51649	Knob
	W	-50105	W	-51633	Glass Dial Face
	W	-45817B	W	-51633	Printer-Dial
8	G92 -33001	2 Section Tun. Cond. (A-150, A-450)	U	-51654	Light Diffuser
	G72 -33001	2 Section Tun. Cond. (A-350)	U	-51718	Diffuser Mtg. Studs
9	G2 -34002	Condenser, .0001 Mf. Molded	G22	-43564	Pulley and Hub Assy.
	W	-32380	W	-50512	Drive Shaft
	W	-31800	W	-43549	"C" Washer-Shaft Retainer
	W	-50105	W	-46290	Cord Clamp
10	W	-34712	G13	-41582	Drive Cord (30")
11	W	-50682A	W	-51752	Spring-Cord Tension
	W	-50203	W	-51645	Instruction Booklet
	W	-45810B		-51647	Shipping Carton
12	G3 -34002	Condenser, .0005 Mf. Molded		-46537	Felt Washer-Knob
	G1 -34002	Condenser, .0025 Mf. Molded	MG25	-51760	<b>MODEL A-350 MISCELLANEOUS</b>
	W	-28621	MG20	-51169	Push Button Unit Assy.
	G2 -34002	Condenser, .0001 Mf. Molded	MG31	-51760	Rocker Plate Assy.
13	W	-51139	W	-50639	Key Assembly
	W	-50684	W	-50590	Adjusting Screw
14	W	-23191A	W	-48373	Spring-Key Return
	W	-51140	W	-51142A	Manual Shaft and Pinion Assy.
15	G39 -28067	Filter Choke	W	-50925A	Spacer Washer-Manual Shaft
16	W	-38915	W	-51769	"C" Washer-Manual Shaft Retainer
	W	-35600	W	-51134	Glass Dial Face
	W	-23616	W	-51211A	Mask-Dial Background
	W	-38915	W	-51134	R. H. Clip-Dial Mtg.
	W	-38915	W	-51133	L. H. Clip-Dial Mtg.
	W	-35602	R	-78	No. 4-36 x 1/4" Screw-Clip Mtg.
	W	-50671	MG19	-51760	Dial Bracket Assy.
	W	-35601	W	-51132	Printer-Dial
	W	-45388	G24	-43564	Pulley and Hub Assy.
	W	-38623	G5	-41582	Drive Cord (18 1/2")
	W	-38918	W	-51771	Push Button
	W	-51804	W	-51144A	Rod-Push Button Mtg.
			W	-51773	Call Letter Sheet
			W	-50980	Celluloid Cover-Call Tab
			W	-51777	Call Letter Holder
			W	-19428	No. 4-36 x 1/4" Oval C's'k Hd. Screw-Holder Mtg.
17				-51765	Instruction Booklet
18				-51766	Instruction Envelope Assy.
19				-51767	Shipping Carton
20				-51760	Case Assembly
21				-51242	Case Body only (FS-11 and FS-79)
22				-51218	Front Cover only (FS-11 and FS-79)
				-51184	Lid-Case (FS-11 and FS-79)
				-51772	Knob
					<b>MODEL A-450 MISCELLANEOUS</b>
				-51750	Case Assembly
				-50506	Knob
				-43882	No. 8-3/4" P. K. Case Screws
				-38935	Cover Wedge
				-51754	Dial Glass Face
				-51742	Dial Mask
				-5050A	R. H. Mtg. Clip-Dial Glass
				-50545	L. H. Mtg. Clip-Dial Glass
				-78	No. 4-36 x 1/4" Clip Mtg. Screws
				-50518A	Printer
				-41582	Drive Cord (30 Inches)
				-43564	Pulley and Hub Assy.
				-51741	Shipping Carton
				-51739	Instruction Book
				-50503	Case Body (FS-11 and FS-79)
				-51264	Case Front (FS-11 and FS-79)

MODEL A-155



1	G19-32000	Ant. Coil	38	G4-28067	R.F. "A" Choke
2	G11-32001	R.F. Coil	39, 40	W-30436-A	Level Cont. Sw.
3	G14-32002	Osc. Coil	45	B-32783	Ant. Cable
4, 5, 6	G2-33002	Ant., R.F., Osc. Tuning Cond.	47	G5-31701	"A" Cable
7, 8, 9	G6-32003	1st I.F. Coil, I.F. Pri. Tuning Cond., I.F. Sec. Tuning Cond.	48	LB-32037	33-B Speaker
10, 11	G7-32003	2nd I.F. Coil, I.F. Sec. Tuning Cond.	49	G1-32769	6SA4 Syncro Tube
12, 13, 14, 15	W-32711-A	.05-.1-.1-.05 mfd., 400-200-200-400 v. Conds.	50	G11-24628	Power Trans.
17	W-32779-B	.02 mfd. 200 v. Cond.	51	W-32759	"B" Filter Choke
18	W-32781-B	.01 mfd. 200 v. Cond.	52	G1-32755	8 mfd. 300 v. Cond.
19	W-32780-B	.05 mfd. 400 v. Cond.	53	W-30366	R.F. "B" Choke
20	W-32779-B	.02 mfd. 200 v. Cond.	55, 56	W-32762-A	.5 mfd. 160 v. Cond.
21	W-32780-B	.05 mfd. 400 v. Cond.	57	G81-27975	.005 mfd. 1000 v. Cond.
22	W-23635	.006 mfd. 400 v. Cond.	58	W-21452	6SA4 Socket
23	W-32741-A	.0005 mfd. Cond., Mica	59	W-21454	1000 ohm Res.
25, 26	W-32802	8-8 mfd. 300-20 v. Conds.	62	W-21454	1 megohm $\frac{1}{3}$ w. Res.
27	W-21452	1100 ohm Res.	63	21237-A	60,000 ohm $\frac{1}{2}$ w. Res.
28	W-28589	350 ohm Res.	64, 65	W-32780-B	.05 mfd. 400 v. Cond.
29	21454	1 megohm $\frac{1}{3}$ w. Res.	66	W-32782-B	.01 mfd. 400 v. Cond.
30	21875	100,000 ohm Res.	67	W-26156-A	S.P.S.T. Sw.
31	23403	150,000 ohm Res.	69	W-32757	12 Amp. Fuse
32	21451	1 megohm Res.	70, 71	W-32741-A	.0005 mfd. Cond., Mica
33	23875	500,000 ohm Res.	73	W-24784	.25 mfd. 200 v. Cond.
34	W-25521	450 ohm Res.	79	W-38304	Cond. 20 Nut
35	32331	55,000 ohm $\frac{1}{2}$ w. Res.	80	G8-32977	Dial Light Choke
36, 37	W-26525-C	15,000-25,000 ohm Res.	81	G7-32977	"A" Motor Noise Choke
			82	G1-34002	.00025 mfd. Cond.
			83	G11-28067	R.F. "A" Choke
			84	G1-34002	.00025 mfd. Cond.

Your Crosley Distributor will be happy to give you complete information regarding Crosley Twice Tested Service Parts.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P2	S	G	K	Su	Ga	Go
6A7	Osc.-Mod.	6.0	230	—	100	0	6.0	—	220	0 to -30
6B7	I-F, Diode Det. & AVC	6.0	230	—	100	0	2.0	—	—	—
6D6	1st A-F Amp.	6.0	55	—	20	0	2.0	—	—	—
42	Output	6.0	220	—	230	-7*	0	—	—	—
84	Rectifier	6.0	230	230	—	—	—	—	—	—

Power Output Approximately 3 Watts.

Battery Drain Approximately 6.3 Amperes at 6 volts.

\* True Bias Reading Approximately -15 Volts Measured Across Filter Choke.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 42 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illus. No. 18, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement in output can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

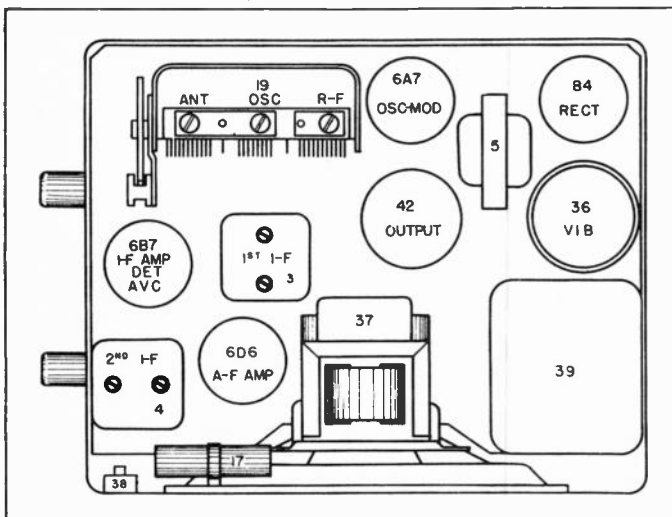


Fig. 2. Top View A-156

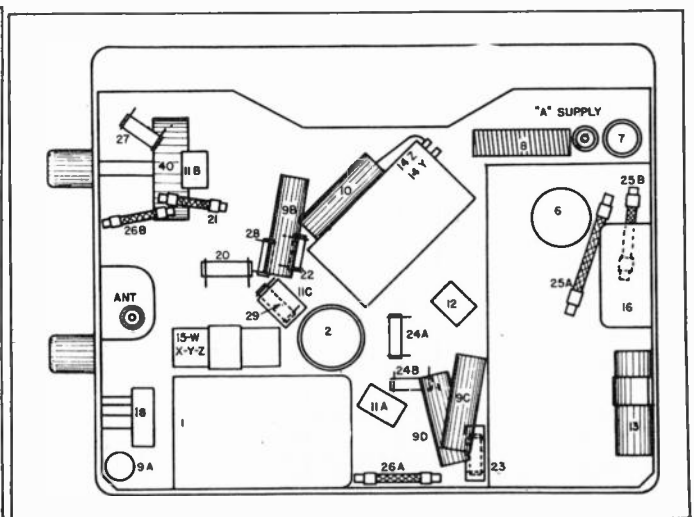
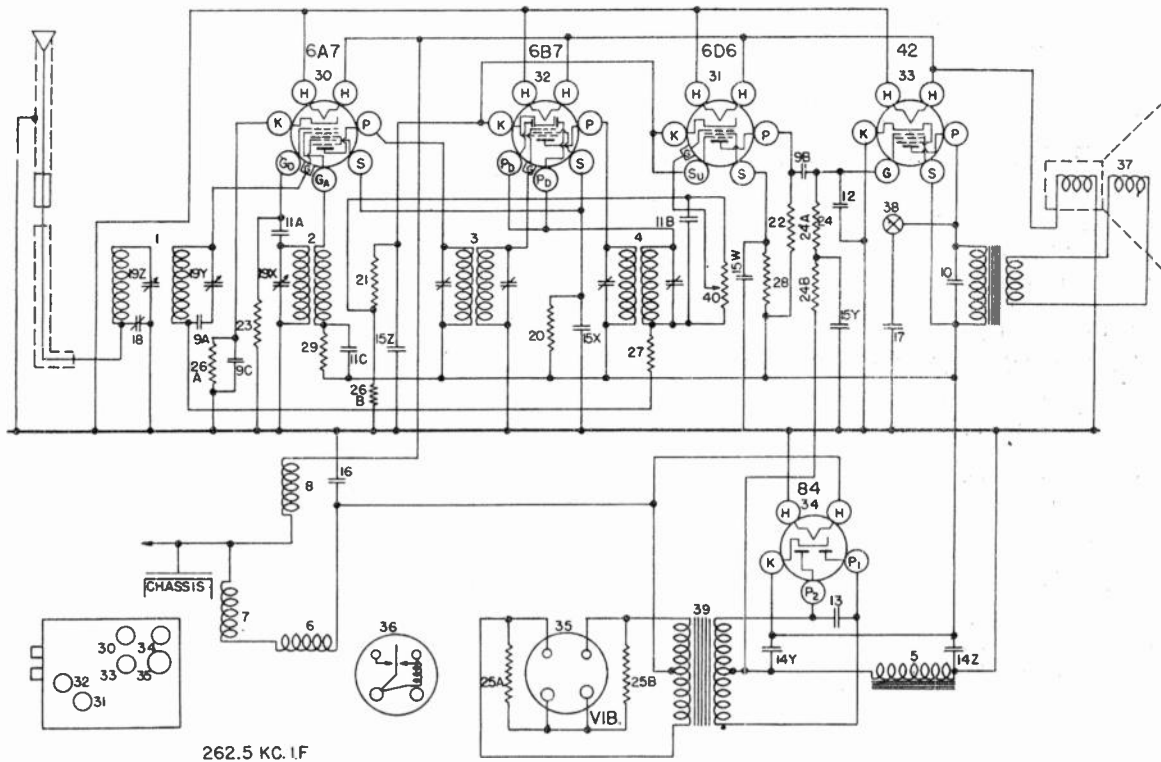


Fig. 3. Bottom View A-156

MODEL A-156



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1-38274	Pre-selector Coil Assm. Complete	29	W-22196	Resistor 20,000 Ohms 1/4 W.
	G41-32000	Pre-selector Coil only	30	G47-28807	Socket 6A7
	W-38276B	Shield	31	G75-28807	Socket 6D6
	W-38277	Wood Coil Spacer (2)	32	G48-28807	Socket 6B7
	W-35400A	Rubber Band	33	G25-28807	Socket 42
2	G27-32002	Osc. Coil only	34	G45-28807	Socket 84
	W-26891	Insulating Washer	35	G1-28807	Socket VIB
	W-21541A	Retaining Ring	W-31212	Tube Shield (Half)	
	W-25025B	Shield	W-31210	Shield Ring	
	W-25200	Coil Socket	W-24394A	Shield Base	
3	G13-32005	1st I. F. Assm.	36	G8-38000	Vibrator (D. A. Corp. No. 5040000)
4	G14-32005	2nd I. F. Assm.	G2-38281	Vibrator Partition Assm.	
5	G25-24628	Filter Choke	33-BL-M	Speaker	
6	G10-28087	R. F. Choke	W-35741	None Control Switch	
7	G4-32977	Motor Noise Choke	G8-32769	Power Transformer	
8	G3-32977	Motor Noise Choke	W-37256	Volume Control 1. Megohm	
9A	W-28621	Condenser 0.02 Mfd. 200 V.	W-38257C	Cover Bracket	
9B	W-28621	Condenser 0.02 Mfd. 200 V.	C-37159	Case	
9C	W-28621	Condenser 0.02 Mfd. 200 V.	C-38220A	Top Cover	
9D	W-28621	Condenser 0.02 Mfd. 200 V.	C-38224A	Bottom Cover	
10	W-23635	Condenser 0.006 Mfd. 400 V.	W-37057	Emblem	
11A	G1-34002	Condenser 0.00025 Mfd.	W-32947	Hole Plug	
11B	G1-34002	Condenser 0.00025 Mfd.	*G1-38390	V. Remote Control Complete	
11C	G1-34002	Condenser 0.00025 Mfd.	*-38384	V. Remote Control Head Assm.	
12	G3-34002	Condenser 0.0005 Mfd.	*-38377	Dial Glass	
13	W-32762	Condenser 0.005 Mfd. 1000 Volt	*-37707	Pointer	
14Z	W-37020	Condenser 4.0 Mfd.	*W-38393	Dial Face	
14Y	W-37020	Condenser 5.0 Mfd.	*G10-23472	Knob (2)	
15Z	W-37021	Condenser 0.1 Mfd. 180 V.	-38389	Dial Light Socket Assm.	
15Y	W-37021	Condenser 0.1 Mfd. 180 V.	-38443	On-Off Switch	
15X	W-37021	Condenser 0.05 Mfd. 180 V.	-38448	Switch Cover	
15W	W-37021	Condenser 0.05 Mfd. 180 V.	G5-38390	V. Remote Control Complete	
16	W-37061	Condenser 0.50 Mfd. 180 V.	-38544	V. Remote Control Head Assm.	
17	W-37047	Condenser 0.015 Mfd. 400 V.	-38377	Dial Glass	
18	W-32928A	Condenser Ant. Series Trimmer	-37708	Pointer Assm.	
19Z	G41-33002	3 Section Tuning Condenser Gang	-38441	Dial Face Glass	
19Y	W-38204B	Gear Assm.	G9-23472	Knobs (2)	
19X	G1-38227	Pinion & Coupling Link Assm.	-38389	Dial Light Socket Assm.	
20	-32331	Resistor 55,000 Ohms 1/2 W.	-38443	On-Off Switch	
21	W-25937	Resistor 275 Ohm (1/2 W. Flex.)	-38448	Switch Cover	
22	-35929	Resistor 150,000 Ohms 1/4 W.	G2-38310	Control Cable Assm. (Cond. Dr.)	
23	-21237A	Resistor 60,000 Ohms 1/4 W.	G3-38310	Control Cable Assm. (Level Con.)	
24A	-35801	Resistor 300,000 Ohm 1/4 W.	-32783A	Ant. Lead	
24B	-35801	Resistor 300,000 Ohm 1/4 W.	G14-32750	"A" Lead with Fuse Assm.	
25A	-27504	Resistor 100 Ohm 1/2 W.	G15-32750	"A" Lead to Set	
25B	-27504	Resistor 100 Ohm 1/2 W.	W-31103	Fuse 10 Amp.	
26A	-22514	Resistor 750 Ohm 1/2 W. Flex.	W-32956A	Mounting Stud (2)	
26B	-22514	Resistor 750 Ohm 1/2 W. Flex.	-8213	Mounting Nut (2)	
27	-34883	Resistor 2.0 Megohm 1/4 W.	W-32957	Mounting Lock Washer (2)	
28	-35802	Resistor 1.0 Megohm 1/4 W.	W-38336	Steering Column Brkt. Assm.	
			W-31625A	Suppressor, Distributor	
			W-29754A	Condenser 0.5 Mfd. (Elim) (2)	

\*Used on sets with serial numbers 1,064,155 to 1,065,154 inclusive.



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8-G	Oscillator-Modulator	6.0	220	90	—	0	90	0
6U7-G	I-F Amplifier	6.0	220	90	0	0	—	—
6Q7-G	Diode Detector & A-F Amp.	6.0	110	—	—	0	—	—
6K6-G	Output	6.0	200	220	—	0	—	—
6X5-G	Rectifier	6.0	—	—	—	220	—	—

Power Output approximately 4 Watts.  
 Battery Drain approximately 5.7 Amperes at 6 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. Fig. 2.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 9, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

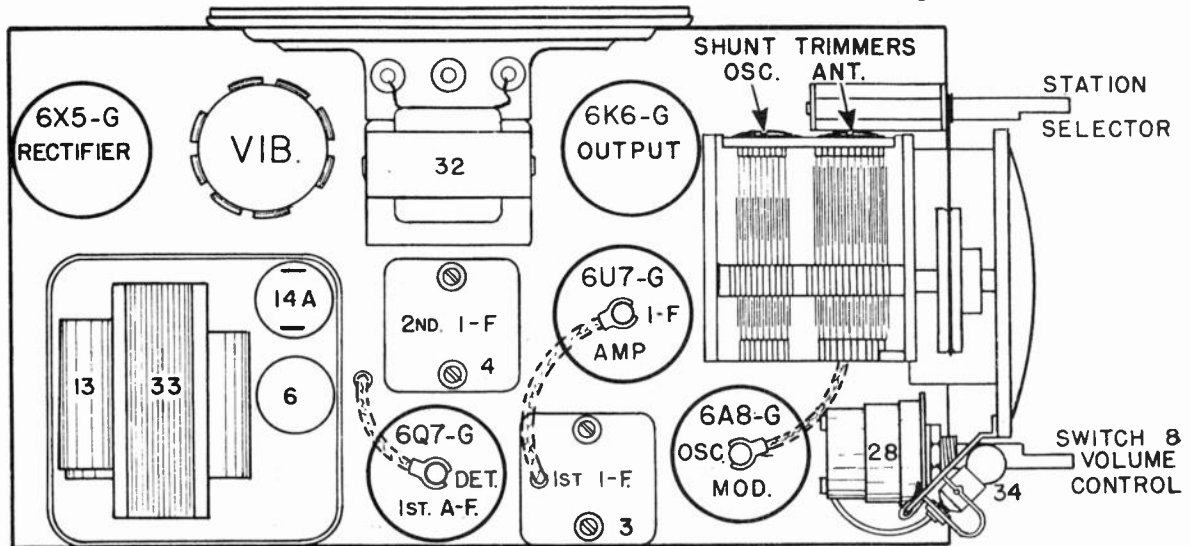
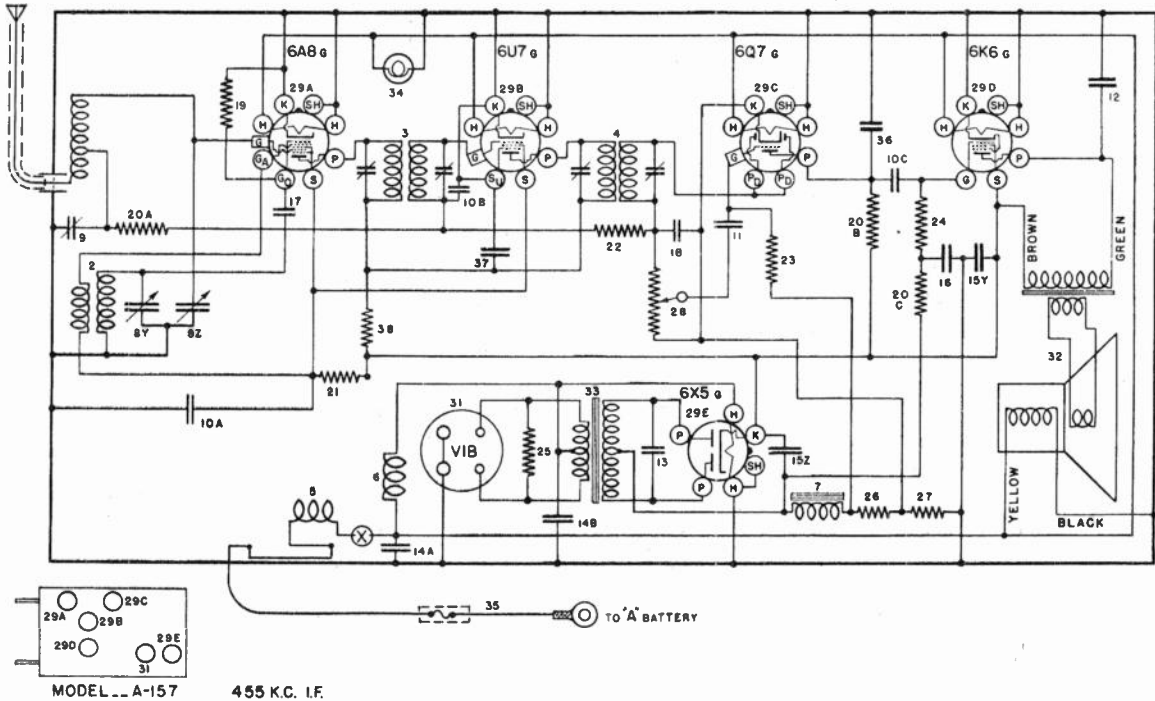


Fig. 2 Top View A-157

MODEL A-157



MODEL A-157 455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G137-32000	Antenna Coil	26	W-23012A	Resistor 40 Ohm 1/2 W.
2	G142-32002	Oscillator Coil	27	W-24537	Resistor 60 Ohm 1/2 W.
3	G148-32001	1st I-F Assembly, 455 Kc.	28	W-30012	Vol. Cont. 1 Meg. & Switch
4	G16-32001	2nd I-F Assembly, 455 Kc.	29	G178-36400	Socket, Octal
5	G16-32007	Motor Noise Choke	W-50142	Tube Shield, Plain Half	
6	G21-28067	"A" Filter Choke	W-50143	Tube Shield, Cut-out Half 6U7-G	
7	G16-28035	"B" Filter Choke	W-31210	Tube Shield Ring	
8	G36-33001	Var. Tuning Cond., 2 Section	30	G10-35000	Vibrator
C	-50137	Dial Face (Glass)	31	G105-28807	Socket (Vibrator)
W	-50135	Support Ring (Dial)	W-50123	Gnd. Clip (Vibrator)	
B	-50136	Support Bracket (Dial)	32	263-BL7 "U"	Speaker, Spec. 5-S-21
W	-50133	Dial Mask	-44062	V. C. & Cone Assembly	
G2	-43564	Pulley and Hub Assembly	-44063	Output Trans.	
W	-41382	Drive Card	G15-32769	Power Transformer	
W	-50131	Shaft (Driver)	W-50130	P. T. Shield	
W	-50128	Mtg. Bracket (Shaft)	W-43567	Dial Light Bulb	
W	-43549	Retaining Ring (Shaft)	W-13568	Bracket -Dial Light	
9	-38988A	Condenser Ant. Comp.	35	G25-32750	"A" Lead Assembly
10ABC	W-32380	Condenser .05 Mf. 200 V.	W-32757	Fuse, 12 Amp.	
11	W-37226	Condenser .02 Mf. 160 V.	W-32777	Fuse Cap (Female)	
12	W-23191A	Condenser .01 Mf. 400 V.	W-32776	Fuse Insulator	
13	W-50170	Condenser .01 Mf. 1000 V.	W-31383	Fuse Cap (Male)	
14AB	W-50161	Condenser .5 Mf. 120 V.	G6-31842	Condenser .00025 Mfd. 200 V.	
15ZY	W-50160	Condenser 4 Mf. 350 V.	W-32750	Condenser .05 Mfd. 400 V.	
16	W-50105	Condenser 1 Mf. 160 V.	W-22511	Resistor 750 Ohm 1/2 W.	
17	G1-34002	Condenser .00025 Mf. 200 V.	W-25581	Resistor 1000 Ohm 1/2 W.	
18	G3-34002	Condenser .0005 Mf. 200 V.	W-38038D	Distr. Suppressor	
19	W-35928	Resistor 60,000 Ohm 1/2 W.	W-29751	Gen. Condenser	
20ABC	W-35601	Resistor 300,000 Ohm 1/2 W.	W-50167	Mtg. Bracket (Set)	
21	W-37377	Resistor 20,000 Ohm 1 W.	W-25846	Mtg. Screw (Set)	
22	W-35602	Resistor 1 Megohm 1/2 W.	W-6213	Mtg. Nut	
23	W-35927	Resistor 2 Megohm 1/2 W.	W-35065	Mtg. Bolt	
24	W-36322	Resistor 501,000 Ohm 1/2 W.	W-35147B	Ant. Connecting Lead (Extra)	
25	W-35467	Resistor 230 Ohm 1/2 W.	W-50164	Knob	

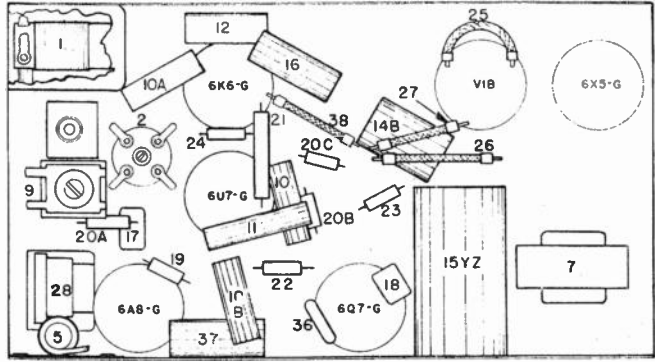


Fig. 3 Bottom View A-157

## MODELS A-158 & A-258

TUBE SOCKET VOLTAGE READINGS								
Tube	Function	H	P	S	Su	K	Ga	Go
6A8-G	Oscillator-Modulator	6.0	190	100	—	0	102	0
6U7-G	I-F Amplifier	6.0	190	100	0	0	—	—
6Q7-G	Diode Detector & A-F Amp.	6.0	85	—	—	-2.3	—	—
6K6-G	Output	6.0	185	200	—	0	—	—
6X5-G	Rectifier	6.0	—	—	—	200	—	—

Power Output approximately 4 Watts.  
Battery Drain approximately 5.7 Amperes at 6 Volts.

### SETTING PUSH BUTTONS

Should it become necessary to realign the circuits of the receiver, it may also be necessary to reset the push buttons. The push buttons may be quickly and accurately set, either with the receiver in the case or with the case removed.

Insert a small screw driver in the hole through each push button and loosen (do not remove) the set screw in the bottom of the hole. By means of the conventional tuning knob, tune-in AS ACCURATELY AS POSSIBLE the favorite station having the highest frequency—that is, the station nearest the left-hand end of the dial. Completely depress and hold the No. 1 push button on the left and tighten the set screw SECURELY.

The push button tuning system is now correctly set for the 1st station. Follow through with this same procedure, setting the other four stations in the order of their frequency (kilocycles).

### CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6U7G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.  
(d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8G Osc. Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

#### 2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

#### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

### To replace the inner cord:

(1) After removing the broken cord, place the chassis on end with the push buttons "up" and the speaker toward you.

(2) Thread an 18" length of drive cord through the hook on one end of the tension spring which was removed from the pulley on the end of the push button rocker plate.

(3) Insert both ends of this cord through the eyelet in the rocker plate pulley from the inside. Pull the cord through until the tension spring is pulled into the pulley, then hook the free end of the spring over the catch in the pulley in the side opposite the eyelet.

(4) Open the condenser gang all the way.

(5) Pull all but approximately  $4\frac{1}{2}$ " of the cord through the eyelet. Loop the  $4\frac{1}{2}$ " end of the cord around the lower half of the pulley.

(6) Loop the long end of the cord over the top of the pulley and back over the brass idler pulley to the drive shaft. Continue the cord around the drive shaft, threading from the inside and over the top. Wrap four complete turns of the cord around the drive shaft and continue the cord over the top of the rocker plate pulley.

(7) Pull on the short end of the cord until the tension spring in the pulley is stretched to within  $\frac{1}{8}$ " of the eyelet. Maintain this tension and tie a knot in the two ends of the cord over the catch which holds the spring. Loop the cord over the spring catch so that the knot is turned in. (A drop of bees' wax on the knot would be an added protection against coming untied.)

### To replace the outer cord:

(1) Place the chassis in a horizontal position with the push buttons to the left and the speaker toward you.

(2) Close the condenser gang and mount the large drive pulley on the shaft. Place the pulley on the condenser shaft so that the shaft is flush with the outside of the pulley bushing and the eyelet in the pulley is horizontal with the shaft and toward the dial.

(3) Cut a 22" length of drive cord and tie a knot  $\frac{1}{2}$ " from the two ends.

(4) Hook one end of the tension spring over the catch provided in the pulley and hook the other end over the drive cord at the knot.

(5) Thread the cord through the eyelet in the pulley and extend one side up and over the vertical idler pulley. Loop this lead around the horizontal idler pulley at the left-hand side of the dial and then around the idler pulley at the right-hand side of the dial and then over the top of the large drive pulley. The tension on the spring should be sufficient to stretch it to within approximately  $\frac{1}{2}$ " of the eyelet.

(6) With the gang closed, move the pointer to the extreme right-hand end of the dial. Press the cord into the slots in the back of the pointer and check to see that the pointer travels from one end of the dial to the other as the gang is opened and closed. It may be advisable to place some Aratex or other liquid adhesive on the cord where it fits into the pointer.

### REPLACING THE A-158 DRIVE CORD

1.—Remove the broken cord and the cord tension spring.

2.—Cut a 30 inch length of drive cord and tie the tension spring approximately 4 inches from one end. Thread both ends through the eyelet in the large pulley from the inside. Hook the other end of the spring to the catch in the pulley and bend catch to secure spring.

3.—Close the condenser gang and see that the eyelet in pulley is on top and that the end of the condenser shaft is flush with the inside of the pulley.

4.—Take the long end of cord and place on small brass idler pulley on the right side of the dial bracket. Loop around pulley in a clockwise direction and then around idler pulley on the left side of the dial bracket, continue on over the top of the large pulley and down to the drive shaft. From the under side of drive shaft wrap 2 turns around shaft in a counter-clockwise direction, bringing cord up on the left side of large pulley. Be sure the cord is on all the pulleys then tie a knot, pulling with sufficient force to stretch the tension spring to within  $\frac{1}{2}$  inch of the edge of pulley.

5.—Close gang and place the pointer on the cord at the extreme left end of the dial. Check to see that pointer travels full length of the dial. It may be advisable to place some "ARATEX" or other liquid adhesive on cord where it fits into the pointer.

MODEL A258

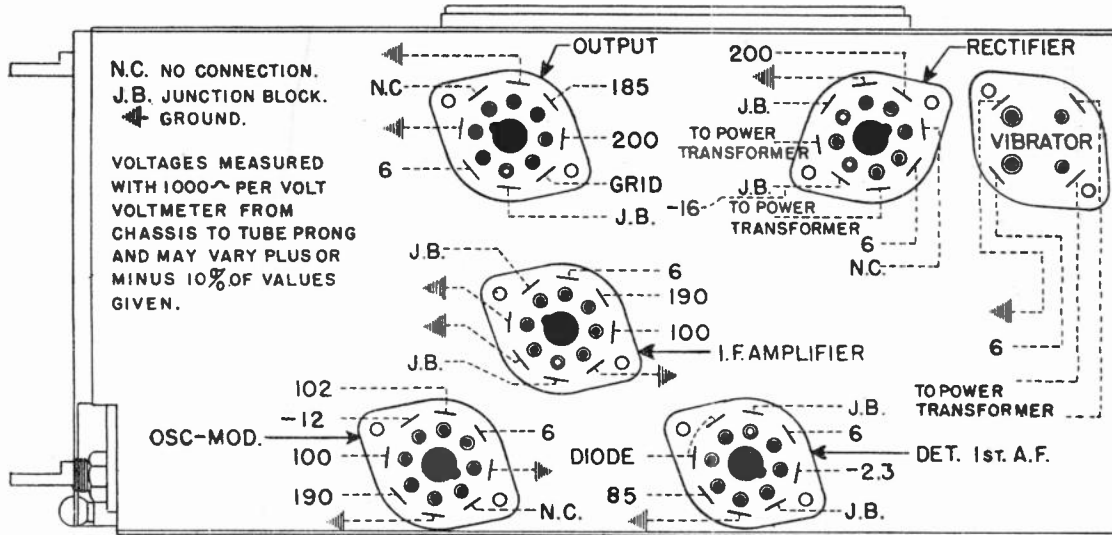


Fig. 5 Socket Voltage Layout

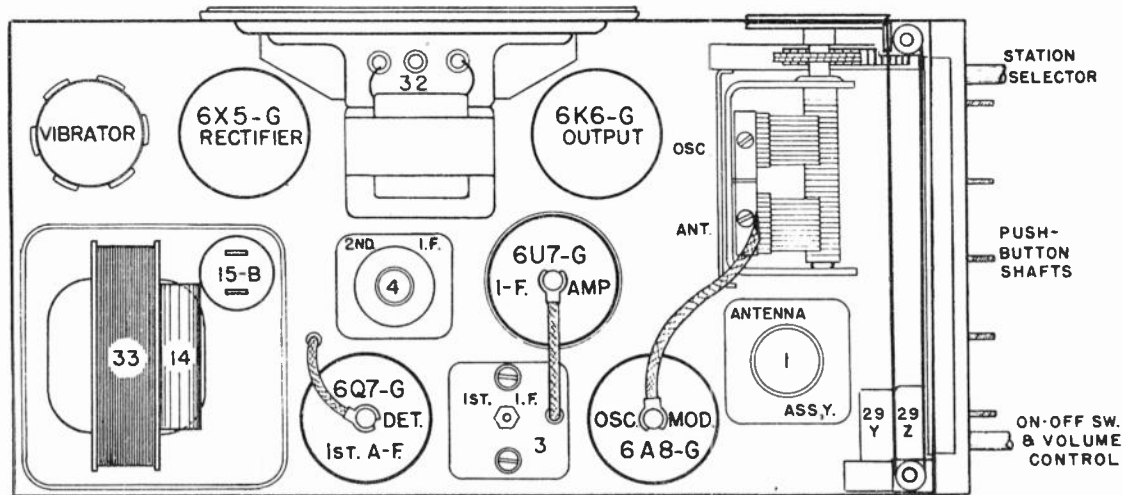


Fig. 2. Top View A-258

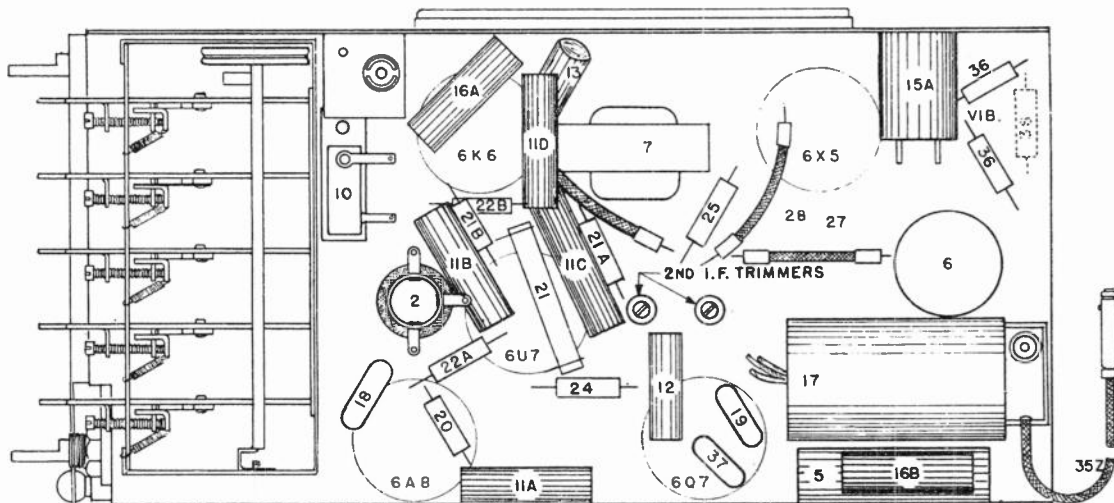
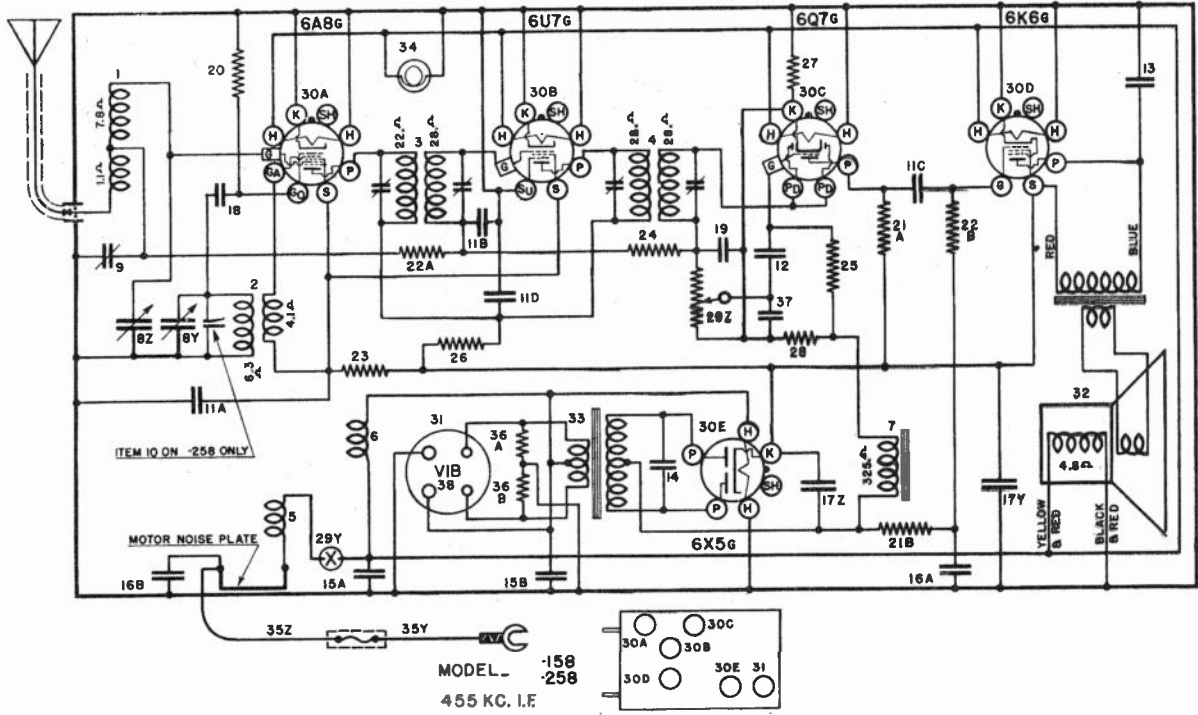


Fig. 3 Bottom View A-258

MODELS A-158 & A-258



Figures in first column refer to parts in Diagrams.

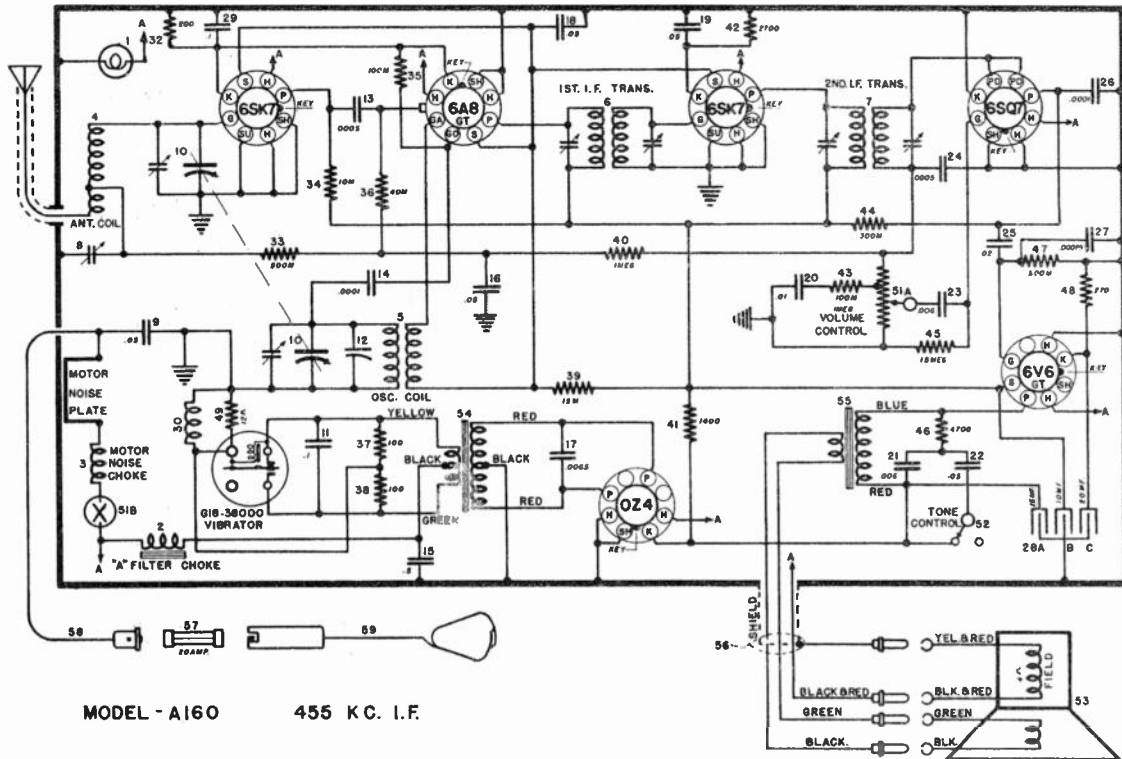
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G167-32000	Ant. Coil	30	G178-36100	8 Prong Socket
2	G167-32002	Osc. Coil	W	-50176	Tube Shield Half (2 Req.)
3	G185-33004	1st I-F. Assy., 455 Kc.	W	-31210	Tube Shield Ring
4	G186-33004	2nd I-F. Assy., 455 Kc.	31	G105-28807	Vib. Socket
5	G19-32977	Motor Noise Check	W	-50123A	Vib. Gnd. Clip
6	G27-28067	"A" Filter Choke	32	278-131-7"U"	Speaker, Mfg. Spec. 5B-122
7	G16-28535	"B" Filter Choke	33	B	Output Trans.
8	G50-33001	2 Section Gang Cond.	33	B	Power Trans.
9	C	Ant. Compensating Cond.	34	G1	Power Trans. Can
	W	Glass Dial Face	35Z	G1	Dial Light Bulb-6-8 V.
	W	L. H. Dial Mtg. Clip	35Y	G29	"A" Lead-Set to Fuse
	W	R. H. Dial Mtg. Clip	G27	-32750	"A" Lead-Fuse to Ammeter
	W	Dial Mask (Maroon)	36A	-38915	Resistor, 100 Ohm 1/4 W. W. W.
	W	Pointer	36B	-38915	Resistor, 100 Ohm 1/2 W. W. W.
	B	Screw-Dial Clip Mtg.	G2	-34002	Condenser, .001 Mf. Molded
	MG23-50550	Dial Mtg. Bracket Assy. (Riveted to Chassis)	G10	-38000	Vibrator, Interchangeable
	MG28-50550	Manual Drive Shaft Brkt. Assy.	G13	-38000	Vibrator
	G8	Pulley and Hub Assy.	W	-32757	Fuse (12 Amp.)
	W	Set Screw-Hub	W	-32776	Fuse Insulator
	W	Drive Cord-40 Inches			<b>Miscellaneous Mechanical Parts</b>
	W	Spring-Cord Tension-Large Pulley	MG27-50550		Push Button Unit Assy.
	W	Spring-Cord Tension-Small Pulley	MG25-50550		Key Assy.
	W	Manual Drive Shaft	W	-50512A	Key Clip (Lock Clamp)
	G3	Temp. Compensating Cond.	W	-50567	1/4"-6x32 Screw (Clamp)
10	W	Condenser, .05 Mf. 200 V.	W	-50607	Spring-(Key Return)
11A	W	Condenser, .05 Mf. 200 V.	W	-50588A	Adjusting Clip (Heart Shaped)
11B	W	Condenser, .05 Mf. 200 V.	W	-43882	1/2" No. 8 P. K. Screw (Clip Mtg.)
11C	W	Condenser, .05 Mf. 200 V.	W	-50547	Key Plate (Rear Guide)
11D	W	Condenser, .02 Mf. 160 V.	MG24-50550		Rocker Plate Assy.
12	W	Condenser, .01 Mf. 400 V.	W	-50561	1/4"-8x40-Fil. H. Screw (Rocker Plate Bearing)
13	W	Condenser, .0065 Mf. 1,000 V.	W	-45553B	Push Button
14	W	Condenser, 5 Mf. 120 V.	W	-50551A	Celluloid Cover
15A	W	Condenser, 5 Mf. 120 V.	W	-50549	Call Letter Sheet
15B	W	Condenser, .1 Mf. 160 V.	D	-50503B	Case (Rear Half) FS49
16A	W	Condenser, .1 Mf. 160 V.	C	-50554A	Case (Front Half) FS49
16B	W	Condenser, .1 Mf. 160 V.	W	-50589	Felt (Dial Window)
17Z	W	Condenser, 4. Mf. 350 V.	W	-50505	Knob (2 Req.)
17Y	W	Cond. Clamp			<b>Mounting Parts</b>
18	G1	Condenser, .0025 Mf. Molded	W	-38038D	Distributor Suppressor
19	G3	Condenser, .0025 Mf. Molded	W	-29754C	Generator Condenser
20	35600	Resistor, 100,000 Ohm 1/4 W.	W	-25846	1/4" No. 10 P. K. Screw (Set Mtg.)
21A	35601	Resistor, 300,000 Ohm 1/4 W.	W	-6213	20 Hex. Nut (Brkt. Mtg.)
21B	35601	Resistor, 300,000 Ohm 1/4 W.	W	-35085	1/2"-20 Screw (Brkt. Mtg.)
22A	35622	Resistor, 500,000 Ohm 1/4 W.	W	-38205	1/2" Lock Washer (Brkt. Mtg.)
22B	35622	Resistor, 500,000 Ohm 1/4 W.	W	-32783	Ant. Cable (Accessory)
23	35616	Resistor, 15,000 Ohm 1 W.	W	-50167	Mtg. Bracket (Set)
24	35602	Resistor, 1. Megohm 1/4 W.	W	-50395	Ammeter Cond. (Accessory)
25	35927	Resistor, 2. Megohm 1/4 W.	W	-38935	Case Ground Clip
26	50641	Resistor, 750 Ohm 1/4 W.			
27	50643	Resistor, 60 Ohm 1/4 W.			
28	50642	Resistor, 40 Ohm 1/4 W.			
29Z	50526	Volume Control, 1. Meg.			
29Y	50526	(On-Off Switch)			

PARTS LIST — MODEL A-158

Item No.	Part No.	Description
8	G49-33001	2 Section Gang Condenser
	C	Glass Dial Face
	MG23-50500	Dial Support Bracket (Riveted to chassis)
	W	Retaining Washer (Drive Shaft)
	W	Drive Shaft
	G9	Pulley & Hub assembly
9	W	Ant. Comp. Condenser
	W	Condenser 0.1 Mf. 160 V.
	W	Felt (Dial window)
	D	Case (Rear section)
	C	Case (Front section)
16B	W	Knob (2 Required)



MODEL A-160



MODEL - A160 455 K.C. I.F.

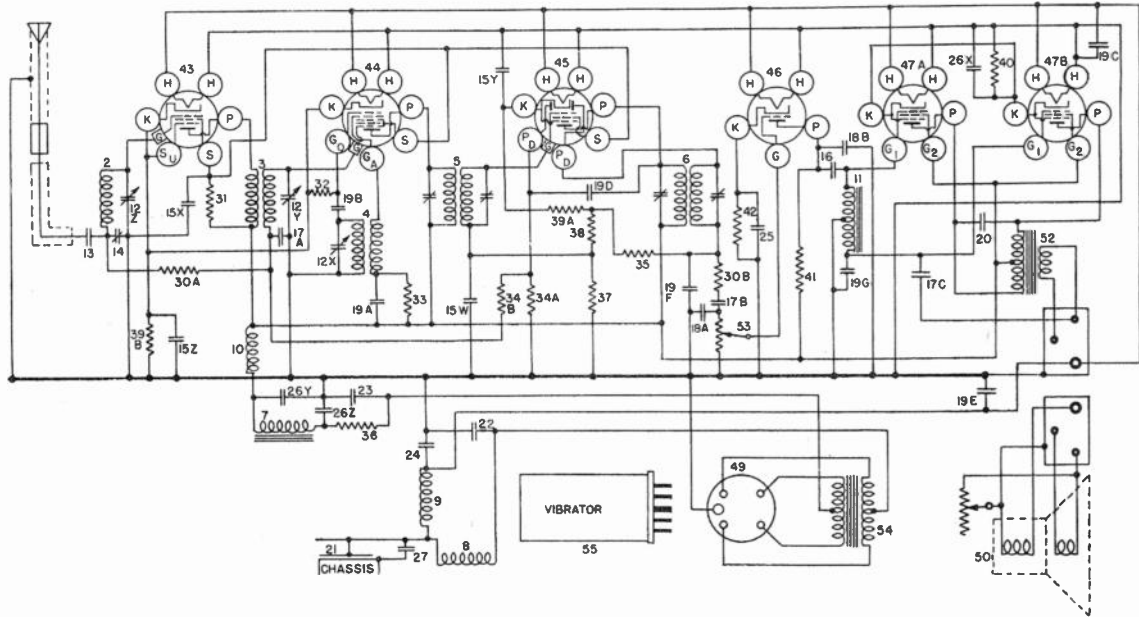
Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Lamp-6.8 Volt	54	N -10	No. 10 Nut-Brkt. Mtg.
	MG22-51670	Reflector Bracket Assy.		Model O-10	Instrument Panel Spk. Kit Complete
	G49 -40255	Wire and Eyelet Assy.-D. L. Socket		B -51729	Power Transformer
	-44365	Spring-D. L. Socket		W -30680	P. T. Shield (Can)
2	G38 -28067	"A" Filter Choke		B -51730	Output Transformer
	G23 -32977	Motor Noise Choke	55	B -51736	Speaker Cable-4 Wire
4	G216 -32000	Antenna Coil	56	F -30469	Fuse (20 Amp.)
5	G3 -31014	Oscillator Coil-Hermetically Sealed	57	C34 -32750	"A" Lead-Set to Fuse
6	G229 -32004	1st I-F. Assy.-455 Kc.	58	G48 -32750	"A" Lead-Fuse to Ammeter
7	G236 -32004	2nd I-F. Assy.-455 Kc.	59	G18 -38000	Vibrator
8	W -51111	Condenser-Antenna Series Trimmer		G105-28807	Socket-Vibrator
9	W -35936	Condenser .05 Mf. 200 V.		W -50123A	Ground Clip-Vibrator
10	C -51700B	Gang and Push Button Assy.		W -51801	Shield-Vibrator Socket
	-51875	Key Adjusting Screw		W -51108A	8 Prong Socket
	-51786	Clamp-Key Toggle		W -51679	Glass Dial
11	W -51800	Condenser .1 Mf. 100 V.		W -51691	Clip-Dial Mounting
12	W -51140	Condenser, Temp. Compensating		B -51690A	Bezel-Dial Escutcheon
13	G3 -34002	Condenser .0005 Mf. Molded		W -51692	Celluloid Dial Window
14	G2 -34002	Condenser .0001 Mf. Molded		MG35-51680	Pointer Assy.-Dial Hand
15	W -50682A	Condenser .5 Mf. 120 V.		W -51694	Diffuser-Dial Light
16	W -45817B	Condenser .05 Mf. 160 V.		V -51718	Studs-Diffuser Mounting
	W -50203	Condenser .0065 Mf. 1,000 V.		MG26-51670	R. H. Cord Bracket Assy.
18	W -32380	Condenser .05 Mf. 200 V.		MG27-51670	L. H. Cord Bracket Assy.
19	W -45817B	Condenser .05 Mf. 160 V.		W -51535	Wood Idler Pulley
20	W -51762	Condenser .01 Mf. 160 V.		G23 -43564	Pulley and Hub Assy.
21	W -51716	Condenser .006 Mf. 400 V.		G17 -41582	Drive Cord (37 1/2")
22	W -32780B	Condenser .05 Mf. 400 V.		W -50590	Spring-Drive Cord Tension
	W -45810B	Condenser .006 Mf. 160 V.		G11 -41564	Guide Cord (15")
24	G3 -34002	Condenser .0005 Mf. Molded		W -43561	Spring-Guide Cord Tension
25	W -28621	Condenser .02 Mf. 300 V.		W -51071	Manual Shaft and Worm Assy.
26	G2 -34002	Condenser .0001 Mf. Molded		W -51071	"C" Washer-Shaft Retaining
27	G1 -34002	Condenser .00025 Mf. Molded		W -51710	Bracket-Manual Shaft Mtg.
28	W -51782	Condenser, 3 Section Electrolytic		B -51726	Bracket-Tuning Unit Mtg.-Front
		A-15 Mf. 350 V.		U -51731	Spacer-Tuning Unit Mtg.
		B-10 Mf. 350 V.		W -4702	Washer-Tuning Unit Mtg.
		C-20 Mf. 25 V.		O -8	Washer-No. 8 Flat-Unit Mtg.
29	W -50105	Condenser .1 Mf. 160 V.		L -8	Lockwasher-Tuning Unit Mtg.
30	G39 -28067	Filter Choke		L -6417	No. 8-32 x 1/2" Screw-Tun. Unit Mtg.
31				W -38038D	Distributor Suppressor
32	-50699	Resistor, 200 Ohms 1/4 W. W. W.		W -29754C	Generator Condenser
33	-36322	Resistor, 500,000 Ohms 1/4 W. Ins.		W -50167	Radio Rear Mounting Strap
34	-36317	Resistor, 10,000 Ohms 1/4 W. Ins.		W -35065	1/4" -20 x 1 1/2" Screw-Strap Mtg.
35	-35600	Resistor, 100,000 Ohms 1/4 W. Ins.		W -6213	1/4" -20 Nut-Strap Mtg.
36	-36761	Resistor, 40,000 Ohms 1/4 W. Ins.		W -38305	Lockwasher-Strap Mtg.
37	-38915	Resistor, 106 Ohms 1/4 W. W. W.		U -51715	Bracket-Case to Instr. Panel Mtg.
38	-38915	Resistor, 100 Ohms 1/4 W. W. W.		O -10	Flat Washer-Instr. Panel Mtg.
39	-24616	Resistor, 15,000 Ohms 1 W. Carb.		-25846	No. 10-3/4" P. K. Screws-Instr. Panel Mtg.
40	-35602	Resistor, 1 Megohm 1/4 W. Ins.		-25788	No. 8-3/4" P. K. Screws-Brkt. to Case
41	-45388	Resistor, 1,400 Ohms 1 1/2 W. W. W.		MG3-51681	Instruction Envelope Assy.
42	-36316	Resistor, 2,700 Ohms 1/4 W. Ins.		-51687	Shipping Carton
43	-35603	Resistor, 100,000 Ohms 1/4 W. Ins.		-51687	Call Letter Sheet
44	-35601	Resistor, 300,000 Ohms 1/4 W. Ins.		-51685	Instruction Booklet
45	-50671	Resistor, 15 Megohms 1/4 W. Ins.		MG2-51680	Case Assy.
46	-51783	Resistor, 4,700 Ohms 1/4 W. Carb.		MG7-51681	Cowl Spkr. Kit Complete (Model 020)
47	-36322	Resistor, 500,000 Ohms 1/4 W. Ins.		MG5-51681	Instrument Panel Speaker Kit Complete (Model 010)
48	-51743	Resistor, 270 Ohms 1/4 W. W. W.		G1 -51722	Speaker (8") Cowl Mtg.
49	-51804	Resistor, 12 Ohms 1/4 W. W. W.		-51744	Housing-Speaker Case
50				-50895	Screen-Speaker Guard (FS-27)
51	-51712	Volume Control and Switch		-51788	Screw-Speaker to Housing Mtg.
		A-Volume Control-1 Meg.-Tap		-20801	Washer-Under Head of 51788
		C-.75 Meg.		O -8	Flat Washer
		B-On-Off Switch		N -8	Nut-No. 8-32-Speaker Mtg.
52	W -51717	Tone Control Switch		W -31795	Stud-Speaker to Dash Mtg.
53	386-B1-J4	Speaker-Instrument Panel		W -51789	Spacer Block
	W -51725	Bar-Speaker Mtg.		-32957	Shakeproof Washer-Speaker Mtg.
	W -51724	Bracket-Speaker Mtg.		-6213	1/4" -20 Nut-Stud Mtg.
	W -12047A	1/4" -24 x 1/4" Bolt-Bracket and Bar		MG2-51681	Set Mtg. Parts Kit
	W -51758	3/8" Shakeproof Washer		MG1-51681	Instr. Panel Spkr. Mtg. Parts Kit
	W -12113A	3/8" -24 Nut-Bracket Bolt		-51695	Case Body-(FS-11 and FS-79)
	W -24235A	3/8" Lockwasher		-51696	Front Cover-Case (FS-11 and FS-79)
	W -38122	No. 10-32 x 3/4" Screw-Brkt. Mtg.		-51713	Lid-Case (FS-11 and FS-79)
	W -4702	Flat Washer-Brkt. Mtg.			
	L -10	No. 10 Lockwasher-Brkt. Mtg.			
	V -51776	Shakeproof Washer-Brkt. Mtg.			





MODEL A-166



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1					ulated Type
2	G83-32000	Ant. Coil	34B	-35602	Resistor, 1 Megohm, ¼ W., Insulated Type
	W-38420	Ant. Coil Shield			
	W-32913	Wood Coil Spacer	35	-35601	Resistor, 300,000 Ohm, ¼ W., Insulated Type
3	G22-32901	R. F. Coil	36	W-32961	Resistor, 100 Ohm, 3 W., Flex.
	W-32897	R. F. Coil Shield	37	W-21452	Resistor, 1100 Ohm, ¼ W., Flex.
	W-32912	Wood Coil Spacer	38	W-28589	Resistor, 350 Ohm, ½ W., Flex.
4	G27-32002	Osc. Coil	39A	W-30127	Resistor, 450 Ohm, ½ W., Flex.
	W-25025B	Osc. Coil Shield	39B	W-30127	Resistor, 450 Ohm, ½ W., Flex.
	W-25200A	Coil Socket	40	W-26049	Resistor, 450 Ohm, 3 W., Flex.
	W-26891	Insulating Washer	41	W-36761	Resistor, 40,000 Ohm, ¼ W.
	W-21541C	Retaining Ring	42	-38428	Resistor, 4,500 Ohm, ¼ W.
5	G16-32005	1st I. F. Coil Assm.	G75-28807	Socket 4D6	
6	G15-32005	2nd I. F. Coil Assm.	G47-28807	Socket 6A7	
7	G31-24628	Coil, "B" Filter Choke	G48-28807	Socket 6B7	
8	G15-28067	Coil, "A" Filter Choke	G80-28807	Socket 76	
9	G6-32997	Coil, Motor Noise Filter Choke	G22-28807	Socket 41	
10	G5-32997	Coil, Motor Noise "B" Choke	G22-28807	Socket 41	
11	G11-29535	Coil, A. F. Grid Coupling Choke	47B	W-31212	Tube Shield-small half (Plain)
12Z				W-31213	Tube Shield-small half (Cut Out)
12Y	G44-33002	3 Section Tuning Cond. Gang		W-34174	Tube Shield-large half (Plain)
12X				W-34175	Tube Shield-large half (Cut Out)
13	W-38367	Condenser, 0.02 Mfd. 200 V.		W-31210	Shield Ring
14	W-38350	Condenser, Ant. Series Trimmer		W-32360A	Tube Shield Base
15Z			48	W-32895	Speaker Socket
15Y	W-38419	Condenser, 0.1 Mfd. 400 V.	49	W-32965A	Vib. Socket
15X				W-38413	Vib. Ground Clip
15W			50	424-G1	Speaker
16	W-22688	Condenser, 0.1 Mfd. 400 V.	51	W-35181A	Suppressor 20,000 Ohm
17A	W-32779	Condenser, 0.02 Mfd. 200 V.	52	G28-24628	Transformer, Output
17B	W-32779	Condenser, 0.02 Mfd. 200 V.		W-38425	Volume Control, 1 Megohm
17C	W-32779	Condenser, 0.02 Mfd. 200 V.	53	G8-32769	Power Transformer
18A	G2-34002	Condenser, 0.0001 Mfd. (Mica)	54	G7-38000	Vibrator, (D. A. Corp. No. 5041245)
18B	G2-34002	Condenser, 0.0001 Mfd. (Mica)	55	C-38407	Case
19A				C-38408	Case Top Cover
19G	G1-34002	Condenser, 0.00025 Mfd. (Mica)		C-38409A	Case Bottom Cover
				W-32947	Trimmer Hole Plug
20	W-25435	Condenser, 0.003 Mfd. 400 V.		W-38412A	Oval Head Cover Nut
21	W-32904	Condenser, 20 Mmf.		W-32921	Cover Tie Bolt
22	W-38433	Condenser, 0.5 Mfd. 160 V.		MG8-38410	Syncronode Partition Assem.
23	W-38431	Condenser, 0.15 Mfd. 400 V.		W-32956	Mounting Stud
24	W-37190	Condenser, 0.02 Mfd. 160 V.		W-38455	Case Spacer
25	W-38430	Condenser, 4. Mfd.		W-32957	Lock Washer
28Z				-6213	Hex. Nut
28Y	W-38427	Condenser, 8. Mfd. 350 V.		-38472	Remote Control Head Assm.
28X				G4-38310	Control Cable to Var. Cond.
27	-29910A	Condenser, 0.25 Mfd. 200 V.		G5-38310	Control Cable to Vol. Cont.
28	W-35784A	Condenser, 0.5 Mfd. 160 V.		G13-32750	"A" Lead to Set.
30A	-35600	Resistor, 100,000 Ohm, ¼ W.		G14-32750	"A" Lead, Fused
30B	-35600	Resistor, 100,000 Ohm, ¼ W.		G9-23472	Knob (2)
31	-36952	Resistor, 30,000 Ohm, 1 W. Insul.		W-38325A	Under Instr. Panel Mtg. Kit
32	-35928	Resistor, 60,000 Ohm, ¼ W. Insul.		W-38336A	Steering Column Mtg. Kit.
33	-36760	Resistor, 20,000 Ohm, ¼ W. Insul.			
34A	-35602	Resistor, 1 Megohm, ¼ W., Insulated Type			

# MODEL A-167

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P2	S	Su	K	Ga	Go
6K7G	R-F Amplifier	6.0	270	—	100	8.5	8.5	—	—
6A8G	Osc.-Modulator	6.0	270	—	100	—	8.5	100	0
6B8G	I-F Amplifier & Diode Detector	6.0	270	—	100	—	4.0	—	—
6K7G	A-F Amplifier	6.0	135	—	35	4.0	4.0	—	—
6N6G	Output	6.0	235	270	—	—	0	—	—
6X5G	Rectifier	6.0	—	—	—	—	285	—	—

Power output approximately 5 watts.  
 Battery drain approximately 8.0 amperes at 6.0 volts.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter to P1 and P2 of the 6N6G Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier To 262 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the station selector for maximum output.
- (g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**
- (h) Repeat operations (e) and (f) for more accurate adjustments.

#### 3. Adjusting Antenna Compensating Condenser.

- (a) Set the signal generator to 600 kilocycles.
  - (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
  - (c) Adjust the antenna compensating condenser, Illustration No. 11, Fig. 3, for maximum output.
  - (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- ator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.
  - (c) Set the signal generator to 262 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

#### 2. Aligning R-F Amplifier

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.
  - (b) Set the signal generator to 1400 kilocycles.
  - (c) Adjust the station selector to 140 on the dial.
  - (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
  - (e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.
  - (f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
  - (e) Set the signal generator to 1400 kilocycles again.
  - (f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.
  - (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.
- (a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.
  - (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

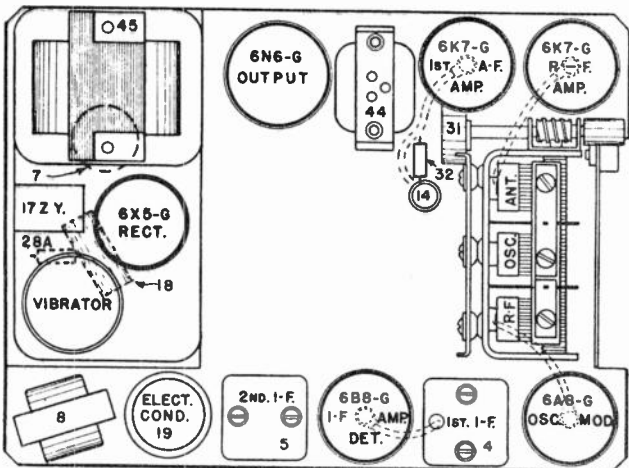


Fig. 2 Top View A-167

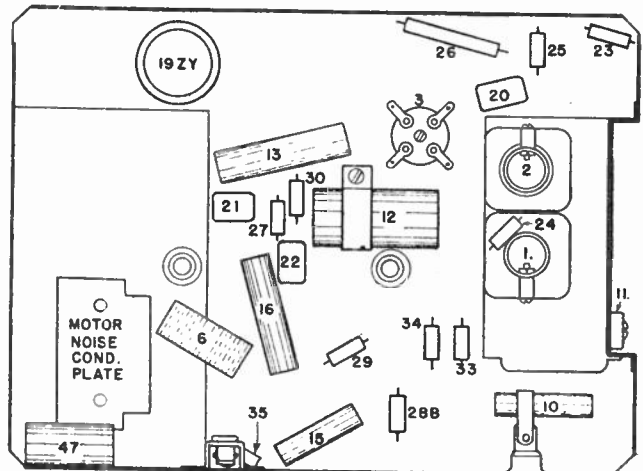


Fig. 3 Bottom View A-167



**MODEL A-268 CROSLY SAFETY-TUNE SIXER ROAMIO DELUXE  
MODEL A-168 CROSLY SAFETY-TUNE SIXER ROAMIO**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Ga	Go	G
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.5	100	—	—
6U7-G	I-F. Amplifier	6.0	220	100	—	3.5	—	—	—
6Q7-G	Det., A. V. C. 1st A-F. Amplifier	6.0	60	—	—	—	—	—	—
6P5-G	2nd A-F. Amplifier	6.0	200	—	—	11	—	—	—
6AC5-G	Output	6.0	225	—	—	—	—	—	11
6X5-G	Rectifier	6.0	—	—	—	240	—	—	—

Power Output (max.) 6 Watts—approx.

Battery Drain 6.5 Amperes—approx.

It will be noted that certain terminals on the sockets are used as junction blocks.

**SETTING PUSH BUTTONS**

Should it become necessary to realign the circuits of the receiver, it may also be necessary to reset the push buttons. The push buttons may be quickly and accurately set, either with the receiver in the case or with the case removed.

Insert a small screw driver in the hole through each push button and loosen (do not remove) the set screw in the bottom of the hole. By means of the conventional tuning knob, tune-in AS ACCURATELY AS POSSIBLE the favorite station having the highest frequency—that is, the station nearest the left-hand end of the dial. Completely depress and hold the No. 1 push button on the left and tighten the set screw SECURELY.

The push button tuning system is now correctly set for the 1st station. Follow through with this same procedure, setting the other four stations in the order of their frequency (kilocycles).

**CONNECTING OUTPUT METER**

One terminal of the output meter is connected to the plate of the 6AC5-G output tube and the other terminal should be connected to the cathode of the 6X5-G rectifier tube. BE SURE THE OUTPUT METER IS PROTECTED FROM D. C. BY CONNECTING A CONDENSER (.1 MF. or larger—NOT electrolytic) IN SERIES WITH ONE OF THE LEADS.

**1. Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6U7-G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8-G Osc. Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2. Aligning R-F Amplifier.**

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

**3. Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

MODELS A-168 & A-268

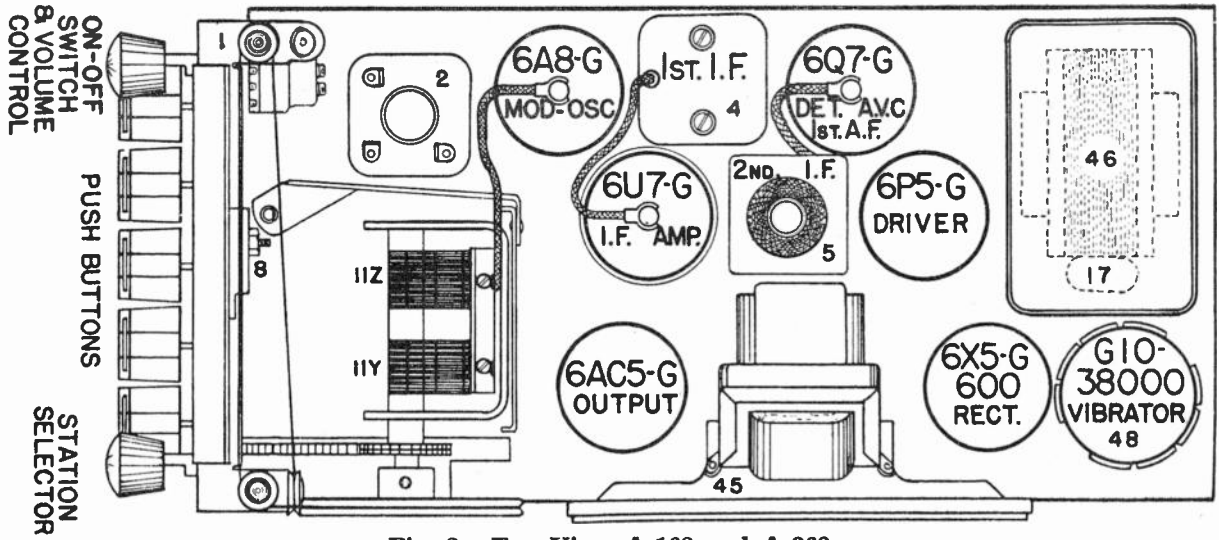


Fig. 2. Top View A-168 and A-268

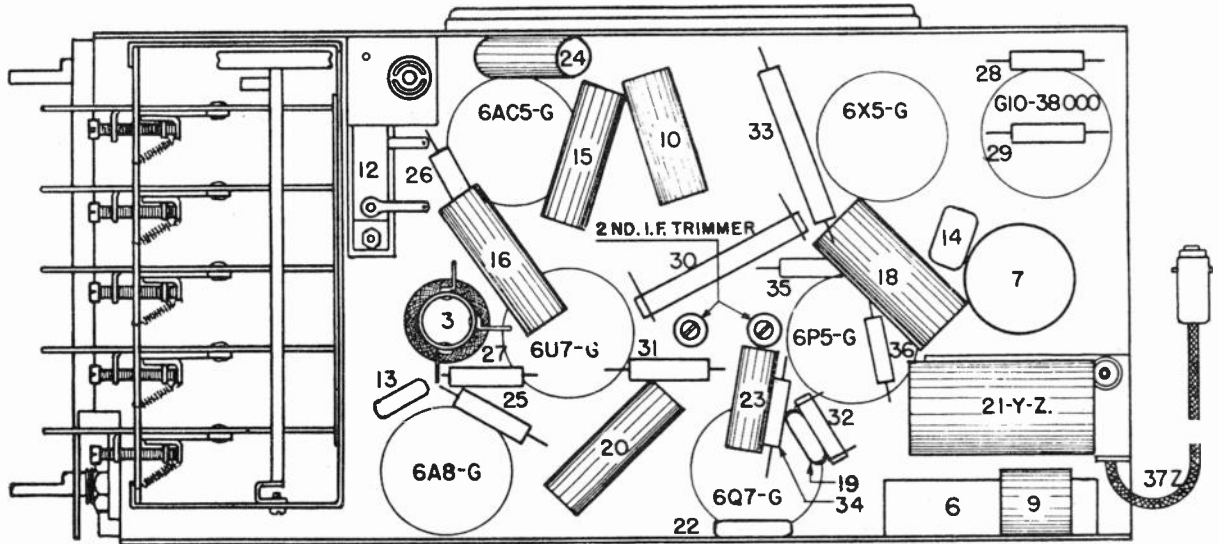


Fig. 3. Bottom View A-168 and A-268

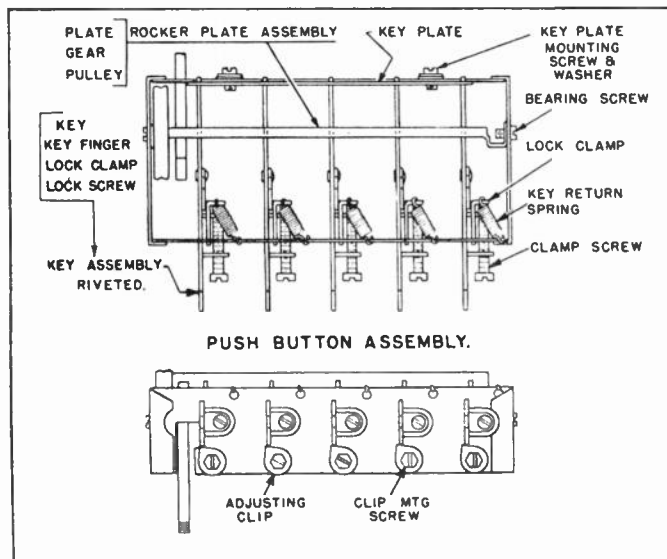
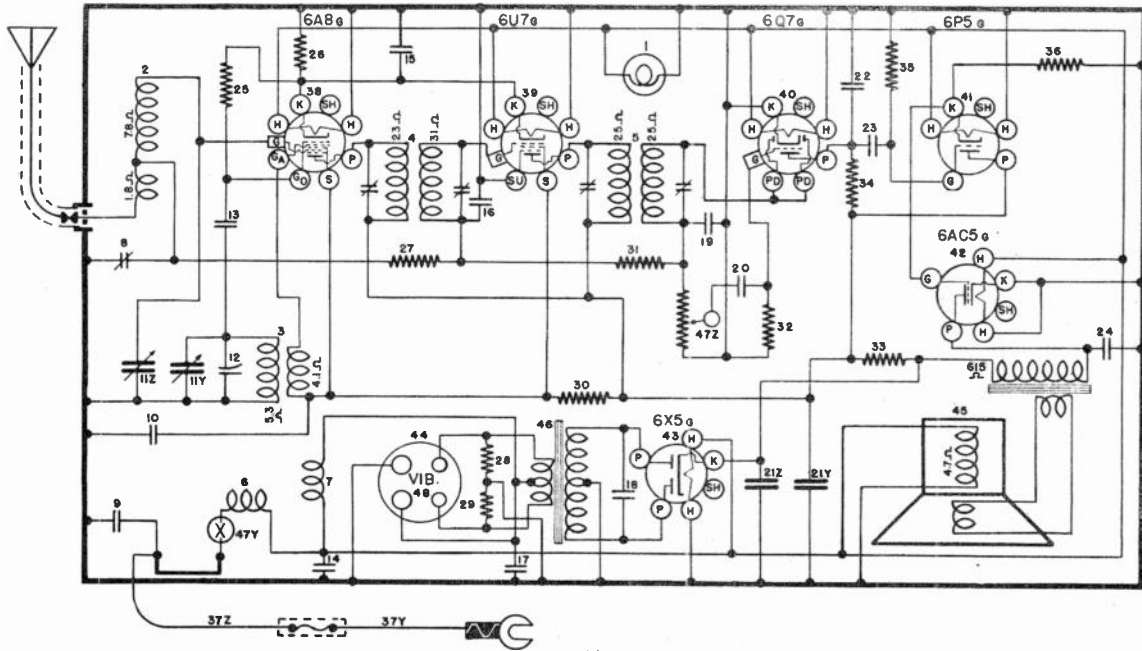


Fig. 4. Push Button Assembly

MODELS A-168 & A-268



MODEL -- 168  
268  
455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W --43567	Dial Light Bulb, 6-8 V.	41	G105--28907	Socket Vibrator
2	G175--32900	Antenna Coil	W --50171	Tube Shield Base	
3	G176--32902	Oscillator Coil	W --50176	Tube Shield Half	
4	G191--32901	1st I-F. Trans., 455 Kc.	W --31210	Tube Shield Ring	
5	G196--32901	2nd I-F. Trans., 455 Kc.	45	278BL7B	Speaker—Mfg. Spec. No. 5-B-122
6	G19--32977	Motor Noise Choke	W --45889	Output Transformer	
7	G29--28067	"A" Filter Choke	W --45721	Output Transformer	
8	W --38988B	Ant. Comp. Cond.	W --50641A	Power Transformer	
9	W --50049	Nut—Comp. Cond. Mtg.	W --50680	Shield—P. T.	
10	W --35536	Condenser, .05 Mf. 200 V.	47Z	W --50526	Volume Control (1 Mgr.)
11	W --35580	Condenser, .05 Mf. 200 V.	47Y	W --38000	On-Off Switch
	G50--33001	2 Section Gang Condenser	48	G10--38000	Vibrator Interchangeable
	C --50688	Dial (Glass) A-168 only	W --50123A	Vibrator	
	W --50517B	Dial Mask (Maroon) A-168 only			Vib. Ground Clip
	W --50518A	Pointer—A-168 only	<b>Miscellaneous Mechanical Parts</b>		
	W --50758	Dial (Glass) A-268 only	MG27 50675	Push Button Unit Assy. (Complete)	A-168
	W --50757	Dial Mask (Blue) A-268 only	MG27 50750	Push Button Unit Assy. (Complete)	A-268
	W --50759	Pointer—A-268 only	MG25--50530	Key Assembly	
	W --50850	R. II. (Dial Mtg.) Clip	W --50542C	Key Clip (Lock Clamp)	
	W --50843	L. II. (Dial Mtg.) Clip	W --50639	No. 6--32x1" Fil. Hd. Screw (Adj. Clamp)	
	B --78	Screws—Clip Mtg.	W --50607B	Spring (Key Return)	
	W --2015	Washers—Clip Mtg.	W --50547	Key Plate (Rear Guide)	
	W --50524D	Drive Shaft—Manual	W --2046	No. 8 Shakedown Washer (Plate Mtg.)	
	W --50325A	Washer—Shaft Retaining	W --31388	No. 8--32x 1/2" Screw (Plate Mtg.)	
	MG28--50675	Shaft Brkt. Assm. (Rear Bearing)	W --50588B	Adj. Clip (Heart Shaped)	
	G8 --43564	Pulley and Hub. Assm.	W --45646B	Adj. Clip	
	W --50590	Spring (Tension--22" Cord)	W --43882	1/2" No. 8 P. K. Screw (Adj. Mtg.)	
	G6 --41582	Drive Cord--18-Inch	MG24 50530	Rocker Plate Assembly	
	W --43561	Spring (Tension--18" Cord)	W --50561	1/2" No. 6-40 Fil. Hd. Screw (Rocker Plate Bearing)	
	G5 --41582	Drive Cord--18-Inch	W --50722	Push Button—A-168 only	
	MG23--50675	Dial Brkt. Assm. Riveted to Chassis	W --50755	Push Button—A-268 only	
12	G3 --50369	Temp. Comp. Cond. (Bi-metal)	W --50597	Call Letter Sheet (Gray) A-168	
13	G1 --34002	Condenser, .00025 Mf. Molded	W --50549	Call Letter Sheet (Brown) A-268	
14	G3 --34002	Condenser, .0005 Mf. Molded	W --50551A	Celluloid Cover	
15	W --50105	Condenser, .1 Mf. 160 V.	W --50721	Knob—A-168	
16	W --50290	Condenser, .05 Mf. 200 V.	W --50754	Case—Rear Half	
17	W --50682A	Condenser, .5 Mf. 120 V.	D --50543D	Case—Front Half—A-168	
18	W --30203	Condenser, .0065 Mf. 1,000 V.	C --50554C	Case—Front Half—A-268	
19	G3 --34002	Condenser, .0005 Mf. Molded	W --50765	Felt—Dial Opening	
20	W --45810B	Condenser, .006 Mf. 160 V.	W --50589		
21Z	W --50674	Condenser, 5 Mf. 350 V.			
21Y	W --50674	Condenser, 5 Mf. 350 V.			
22	G1 --34002	Condenser, .00025 Mf. Molded			
23	W --37225	Condenser, .02 Mf. 160 V.			
24	W --35738	Condenser, .008 Mf. 400 V.			
25	W --35600	Resistor, 100,000 Ohms 1/2 W. Ins.			
26	W --50699	Resistor, 200 Ohms 1/2 W. W. W.			
27	W --36322	Resistor, 500,000 Ohms 1/2 W. Ins.			
28	W --38915	Resistor, 100 Ohms 1/2 W. W. W.			
29	W --38915	Resistor, 100 Ohms 1/2 W. W. W.			
30	W --38915	Resistor, 100 Ohms 1/2 W. W. W.			
31	W --23616	Resistor, 15,000 Ohms 1 W. Carbon			
32	W --35602	Resistor, 1 Meg. 1/4 W. Ins.			
33	W --50671	Resistor, 15 Meg. 3/4 W. Ins.			
34	W --45388	Resistor, 1,400 Ohms 1 1/2 W. W. W.			
35	W --35601	Resistor, 300,000 Ohms 1/2 W. Ins.			
36	W --38623	Resistor, 750,000 Ohms 1/2 W. Ins.			
37	W --40643	Resistor, 25,000 Ohms 1/4 W. Ins.			
37Z	G29--32750	"A" Lead, Set to Fuse			
37Y	G27--32750	"A" Lead, Fuse to Ammeter			
	W --32757	Fuse, 12 Amp.			
	W --32776	Fuse Insulator			
38		(6A8-G			
39		(6U7-G			
40		(6Q7-G			
41	G178--36400	Socket			
42		(6P5-G			
43		(6AC5-G			
		(6X5-G			

**CONNECTING OUTPUT METER**

Connect the output meter to the plate and screen of the 6K6GT output tube. Be sure the meter is protected from D.C. by connecting a condenser (0.1 mf. or larger—not electrolytic) in series with one of the meter leads.

**1. Aligning the I-F to 455 Kilocycles**

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid (pin No. 8) of the 6SA7 oscillator-modulator. Care should be exercised to keep signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis between the 6SQ7 and 6SK7 sockets.

(d) Adjust both 1st I-F trimmers for maximum output. Trimmers accessible from bottom of the chassis.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

**2. Aligning the R-F**

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "ANT" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (f) Readjust the station selector for maximum output.
- (g) Repeat operation (e) for more accurate adjustment.

**3. Adjusting Antenna Compensating Condenser on Model A-169 only.**

- (a) Set the signal generator to 600 kilocycles.
- (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
- (c) Adjust the antenna compensating condenser, located near antenna receptacle, for maximum output.
- (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- (e) Set the signal generator to 1400 kilocycles again.
- (f) Tune in the 1400 kilocycle signal with the station selector for maximum output.
- (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

**PARTS LIST—MODEL A-169**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light Bulb, 6-8 Volt	27	G1 —34002	Condenser, .00025 Mf. Molded
2	G175 —32000	Antenna Coil	28	—50469	20 Ampere Fuse
3	G23 —32977	Motor Noise Choke Coil	29	—36322	Resistor, 500,000 Ohms 1/4 Watt Ins.
4	G32 —28067	"A" Filter Choke Coil	30	—38915	Resistor, 100 Ohms 1/2 Watt Wire Wound
5	MG24 —51169	Push Button Solenoid Coil	31	—38915	Resistor, 100 Ohms 1/2 Watt Wire Wound
6	G2 —51014	Hermetically Sealed Oscillator Coil	32	—36317	Resistor, 10,000 Ohms 1/4 Watt Ins.
7	G216 —32004	1st I-F. Transformer Assembly	33	—36761	Resistor, 40,000 Ohms 1/4 Watt Ins.
8	G217 —32004	2nd I-F. Transformer Assembly	34	—23616	Resistor, 15,000 Ohms 1/4 Watt Carb.
9	W —51111	Antenna Trimmer Condenser	35	—45388	Resistor, 1,400 Ohms 1/2 Watt Wire Wound
10	W —35936	Condenser, .05 Mf. 200 Volt Paper	36	—35602	Resistor, 1 Megohm 1/4 Watt Ins.
11A } 11B }	G171 —33001	2 Section Var. Cond. } Antenna Section } Oscillator Section	37	—36760	Resistor, 20,000 Ohms 1/4 Watt Ins.
	G18 —43564	Pulley and Hub Assembly	38	—38917	Resistor, 450 Ohms 1/2 Watt Wire Wound
	G5 —41582	Drive Cord, 18"	39	—35928	Resistor, 60,000 Ohms 1/4 Watt Ins.
	MG23 —51169	Push Button Unit Assembly	40	—35601	Resistor, 300,000 Ohms 1/4 Watt Ins.
	MG19 —51169	Dial Bracket Assembly	41	—50671	Resistor, 15 Megohms 1/4 Watt Ins.
	MG20 —51169	Rocker Plate Assembly	42	—38623	Resistor, 750,000 Ohms 1/4 Watt Ins.
	MG22 —51169	Riveted Key (5 Req.)	43	—38918	Resistor, 600 Ohms 1/2 Watt Wire Wound
	MG21 —51169	Key Assembly (5 Req.)	44	G34 —32750	"A" Lead Assembly (Fuse to Set)
	W —51203	Dial Drive Cord Spring	45	G37 —32750	"A" Lead Assembly (Fuse to Battery)
	W —23877	No. 8—32 x 3/16" Set Screw (Pulley and Hub Assy.) (2 Req.)	46	W —51162	Switch Contact Plate
	W —50542E	Key Clip (5 Req.)	47	W —46159	Tone Control Switch
	—50639	No. 6—32 x 1" Fil. Hd. Screw (5 Req.) (Adjusting)	48	278-BL-5-"B"	Speaker, Spec. 55-WA-50
	W —51122	Key Plate	49	G10 —38000	Output Transformer
	W —50590	Key Return Spring (5 Req.)	50A } 50B }	—51117	Vibrator
	W —50561	No. 6—40 x 1/8" Fil. Hd. Screw (2 Req.) (Key Plate Screw)			Volume Control
	W —51120	No. 6—40 x 1/8" Rocker Plate Bearing Screw			Line Switch
	W —30989A	Contact Plate Spring	G168 —34403		Volume Control Cable (Connecting Wires)
	W —51145	Push Button (5 Req.)	W —35201		Pal Nut (Volume Control)
	W —51145A	Push Button Rod	B —51155A		Power Transformer
	W —51162	Contact Plate	G2 —34002		Condenser, .0001 Mf. Molded
	—48373	Manual Tuning Shaft Assembly (Service only)	G3 —34002		Condenser, .0005 Mf. Molded
	—51151	Tuning or Volume Control Knob	W —50105		Condenser, .1 Mf. 160 Volt Paper
	—51136	Dial Glass	G105 —28807		Vibrator Socket
	W —51137A	Dial Mask	W —50123		Vibrator Ground Clip
	W —51132	Dial Pointer	W —51108A		8 Prong Socket
	W —51134	Dial Clip (Right)	W —51208		Tube Shield
	W —51133	Dial Clip (Left)	MG1 —51169		Case Assembly Complete
	R —78	No. 4—36 x 1/4" Rd. Hd. Screw (2 Req.) (Dial Clip)	D —51149B		Front Cover
	W —2045	No. 4 Int. Shakeproof Washer (2 Req.) (Dial Clip)	C —51184		Lid
	W —50589	Dial Window Felt	—43882		No. 8 x 3/4" P. K. Screw (Case Fastening)
	W —51146	Anti-Rattle Clip (2 Req.)	—51174		Carton
	W —51167	Grille Cloth	—51175		Instruction Booklet
	W —51206	Dust Cloth (Front Cover)	W —38038D		Distributor Suppressor
12	W —50682A	Condenser, .5 Mf. 120 Volt Paper	W —29754C		Generator Condenser
13	W —32380	Condenser, .05 Mf. 200 Volt Paper	W —50167		Rear Mounting Strip
14	G3 —34002	Condenser, .0005 Mf. Molded	W —51177		Case Mounting Bracket (2 Req.)
15	G2 —34002	Condenser, .0001 Mf. Molded	—25846		No. 10 x 3/4" P. K. Screw (Mtg. Bracket) (2 Req.)
16	W —51140	Thermal Condenser	—25788		No. 8 x 3/8" P. K. Screw (Mtg. Bracket) (2 Req.)
17	W —50203	Condenser, .0065 Mf. 1,000 Volt Oil	—35065		1/4"—20 x 1 1/2" Sq. Hd. Screw
18	W —34712	Condenser, .25 Mf. 160 Volt Paper	—6213		1/4"—20 Hex. Nut (2 Req.)
19	W —32380	Condenser, .05 Mf. 200 Volt Paper	W —38205		1/4" Lock Washer (2 Req.)
20	W —45810B	Condenser, .006 Mf. 160 Volt Paper	—50979		Call Letter Sheet
21	W —23191A	Condenser, .01 Mf. 400 Volt Paper	W —50980		Call Letter Cover
22	W —45810B	Condenser, .006 Mf. 160 Volt Paper	—51187		Call Letter Holder
23	G3 —34002	Condenser, .0005 Mf. Molded	W —19428		No. 4—36 x 1/4" French Hd. Screw (Call Letter Holder) (2 Req.) F.S. 18
24	W —28621	Condenser, .02 Mf. 200 Volt Paper	W —50395		5 Mf. 160 Volt Condenser
25	W —30488	Condenser, .02 Mf. 400 Volt Tubular	MG3 —51170		Instruction Envelope Assy.
26	W —51139	Condenser, { 10 Mf. 350 Volt } Elect. { 10 Mf. 350 Volt } { 20 Mf. 25 Volt }	—32783		Antenna Cable (Export only)

MODELS A-259 AND A-169

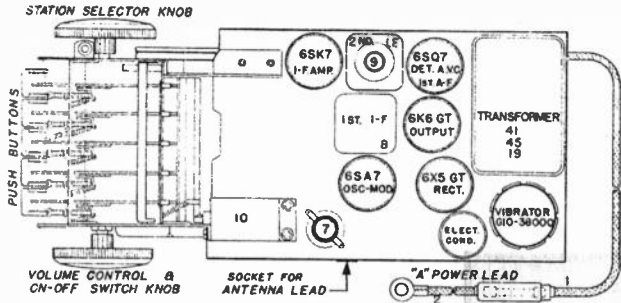


Fig. 2-A—Top View A-259

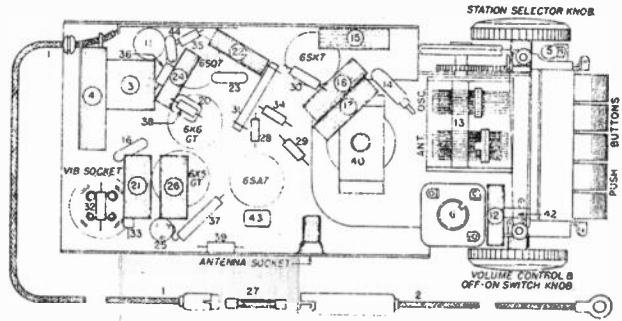


Fig. 3-A—Bottom View A-259

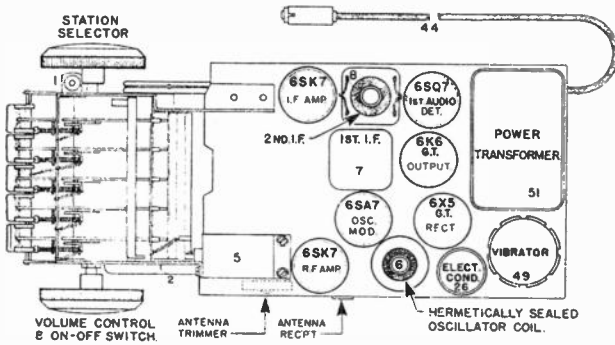


Fig. 2-B—Top View A-169

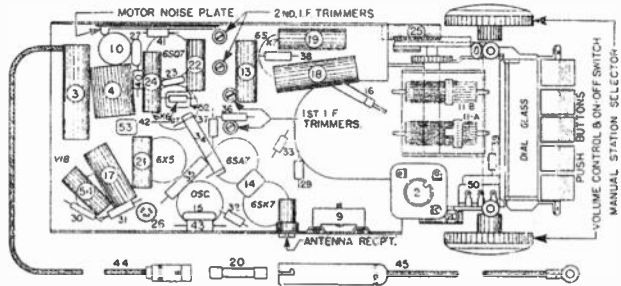


Fig. 3-B—Bottom View A-169

PARTS LIST—MODEL A-259

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G34 —32750	"A" Lead Assembly (Set to Fuse)	28	—36760	Resistor, 20,000 Ohms 1/4 Watt Ins.
2	G37 —32750	"A" Lead Assembly (Ammeter to Fuse)	29	—36322	Resistor, 500,000 Ohms 1/4 Watt Ins.
3	G32 —28067	"A" Filter Choke	30	—38917	Resistor, 450 Ohms 1/2 Watt W. W.
4	G23 —32977	Motor Noise Choke	31	—23616	Resistor, 15,000 Ohms 1 Watt Carb.
5	W —43567	Dial Light Bulb (6-8 Volt)	32	—28915	Resistor, 100 Ohms 1/2 Watt W. W.
6	G194 —32000	Antenna Coil	33	—28915	Resistor, 100 Ohms 1/2 Watt W. W.
7	G192 —32002	Oscillator Coil	34	—35672	Resistor, 1 Megohm 1/2 Watt Ins.
8	G216 —32004	1st I-F. Transformer Assembly	35	—50671	Resistor, 15 Megohms 1/2 Watt Ins.
9	G223 —32004	2nd I-F. Transformer Assembly	36	—35601	Resistor, 300,000 Ohms 1/4 Watt Ins.
10	MG24 —51169	Tuning Solenoid Coil	37	—45388	Resistor, 1,400 Ohms 1 1/2 Watt W. W.
11	W —35936	Condenser, .05 Mf. 200 Volt Paper	38	—38623	Resistor, 700,000 Ohms 1/4 Watt Ins.
12	W —32380	Condenser, .05 Mf. 200 Volt Paper	39	—38918	Resistor, 600 Ohms 1/2 Watt W. W.
13A } 13B }	G72 —33001	2 Sect. Var. Condenser { Antenna Section Oscillator Section	40	278-BL-5-"B"	Speaker, Spec. 55-WA-50
	MG19 —51169	Dial Bracket Assembly		—47610	Cone and V. C. Assembly
	G18 —43564	Pulley and Hub Assembly		—47611	Field Coil, 4.9 Ohms 1.2 M. A.
	W —23877	No. 8—32 x 3/16" Set Screw (2 Req.) (Pulley and Hub Assy.)		—47612	Output Transformer
	G5 —41582	Drive Cord, 18"		—43539	Cardboard Ring
	W —51203	Drive Cord Spring	41	W —51167	Grille Cloth
	W —51211A	Dial Mask		B —51155A	Power Transformer
	W —51197	Dial Glass	42A } 42B }	—43883	No. 8 x 3/8" P. K. Screw (Trans. Fastening)
	W —51197	Dial Clip, R. H.		—51198	Volume Control, 1 Megohm
	W —51133	Dial Clip, L. H.		W —35201	On-Off Switch
	R —78	No. 4—26 x 1/4" Rd. Hd. Screw	43	G2 —34002	3/4"—32 Pal Nut (Volume Control)
	W —2045	No. 4 Internal Shakeproof Washer	44	G1 —34001	Condenser, .00025 Mf. Molded
	W —51132	Dial Pointer	45	W —50105	Condenser, .1 Mf. 160 Volt Paper
	W —48373	Manual Shaft Assembly (Service only)		W —51108A	8 Prong Socket (No Marking)
	W —50589	Dial Window Felt		G105 —28807	Vibrator Socket
	MG23 —51159	Push Button Unit Assembly		W —50123A	Vibrator Ground Clip
	MG22 —51159	Riveted Key (5 Req.)		G10 —38000	Vibrator
	MG20 —51159	Rocker Plate Assembly		W —46447	Tube Shield
	W —50542E	Key Clip (5 Req.)		MG1 —51159	Case
	W —50639	No. 6—32 x 1" Fil. Hd. Screw (Station Setting)		—51205	Carton
	W —51122	Key Plate		W —51200	Instruction Bulletin
	W —50590	Spring (Key Return)		W —38038D	Distributor Suppressor
	W —51120	No. 6—40 x 1/4" Fil. Hd. (Rocker Plate Bearing)		W —29754C	Generator Condenser
	W —6875	No. 6—32 x 3/4" W. H. Screw (Key Plate) (2 Req.)		W —50167	Set Mounting Strap
	W —51307	Key Operating Bar		W —51177	Case Mounting Bracket (2 Req.)
	W —51194	Push Buttons (5 Req.)		—25846	No. 10 x 3/4" P. K. Screw (2 Req.)
	W —51144A	Push Button Rod		—35065	1/4"—20 x 1 1/2" Sq. Hd. Screw
	W —51162	Contact Plate		—6213	1/2"—20 Hex. Nut (2 Req.)
	W —50989A	Spring (Contact Plate)		W —38205	1/2" Lock Washer (2 Req.)
	W —51140	Thermal Condenser		—25788	No. 8 x 3/4" Rd. Hd. P. K. Screw (2 Req.)
14	W —32380	Condenser, .05 Mf. 200 Volts Paper		—51192	Knob (2 Req.)
15	G3 —34002	Condenser, .0005 Mf. Molded		W —50979	Call Letter Sheet
16	W —32380	Condenser, .05 Mf. 200 Volts Paper		W —50980	Call Letter Cover
17	W —32380	Condenser, .05 Mf. 200 Volts Paper		W —51196	Call Letter Holder
18	W —32380	Condenser, .05 Mf. 200 Volts Paper		W —19428	No. 4—36 x 1/4" French Hd. Screw (Call Letter Holder)
19	W —50682	Condenser, .5 Mf. 120 Volts Paper		MC3 —51160	Instruction Envelope Assy.
20	G2 —34002	Condenser, .0001 Mf. Molded		—32783	Antenna Cable (Export only)
21	W —50203	Condenser, .0065 Mf. 1,000 Volts Oil Impr.		W —50395	.5 Mf. 160 Volt Condenser (As Ordered)
22	W —45810B	Condenser, .006 Mf. 160 Volts Paper			
23	G3 —34002	Condenser, .0005 Mf. Molded			
24	W —28621	Condenser, .02 Mf. 200 Volts Paper			
	W —51139	Condenser, { 10 Mf. } { 10 Mf. } Elect. { 20 Mf. }			
25	W —23191A	Condenser, .01 Mf. 400 Volts Paper			
26	W —50469	Fuse, 20 Ampere			



MODELS A-259 & A-169

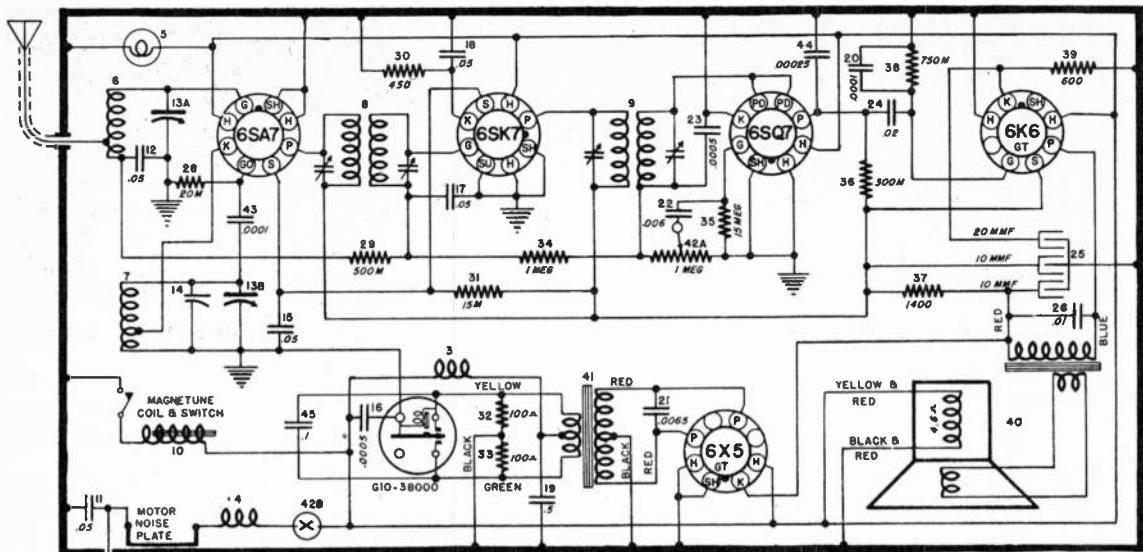


Fig. 1-A—Wiring Diagram and Socket Voltages

TUBE & FUNCTION	1	2	3	4	5	6	7	8
6SA7 OSC.-MOD.	GR.	GR.	210	100	200	CATH.	5.8	GRD.
6SK7 I.F. AMP.	GR.	5.8	GR.	GR.	2.8	100	GR.	210
6SQ7 DET.-AUD. IFT A.F.	GR.	GR.	GR.	GR.	GR.	200	GR.	210
6K6-6T OUTPUT	GR.	5.8	220	210	GR.	GR.	1.5	GR.
6X5 RECT.	GR.	GR.	250	GR.	250	GR.	5.9	240

• 50 VOLT SCALE, 1000 OHMS PER VOLT.  
 @ A.C. TO GROUND  
 6.5 AMPERES AT 6 VOLTS, NORMAL OPERATING CURRENT.  
 7.0 AMPERES AT 6 VOLTS, SOLENOID OPERATING CURRENT.  
 VOLTAGES MEASURED WITH 1000 $\Omega$  PER VOLT VOLTMETER FROM QUADERS TO TUBE PINS AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN. GR.—GROUND. J.B.—JUNCTION BLOCK.

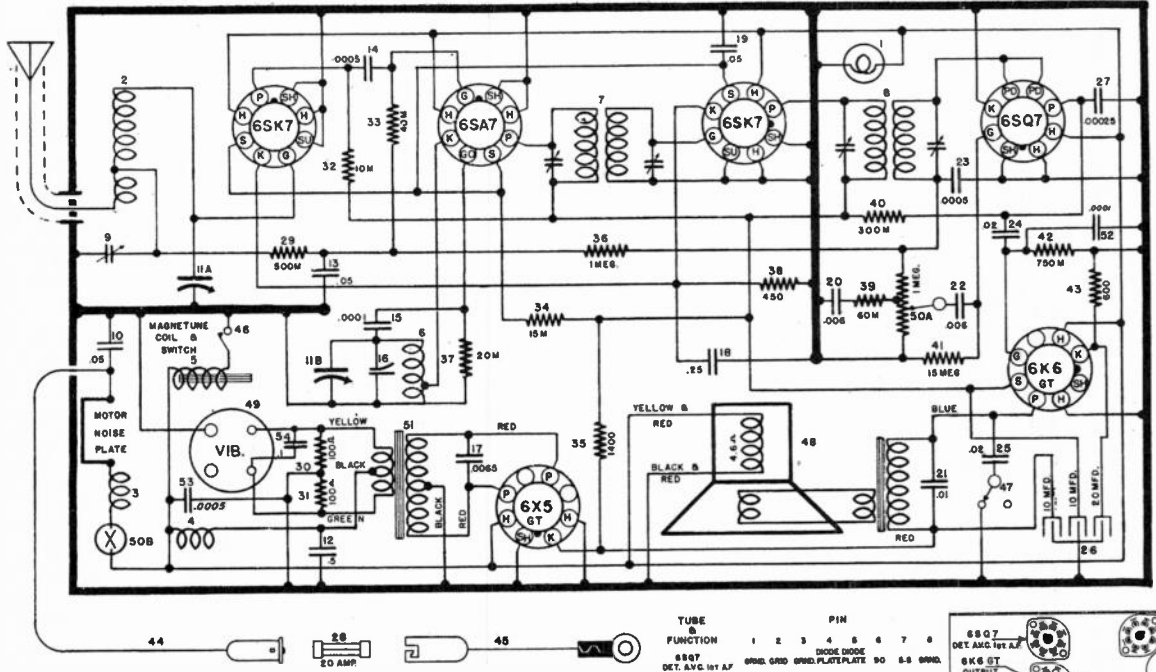
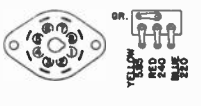
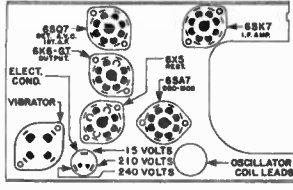
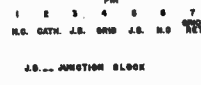
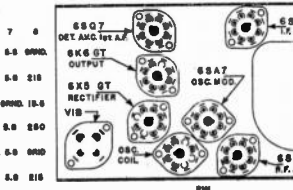


Fig. 1-B—Wiring Diagram and Socket Voltages

TUBE & FUNCTION	1	2	3	4	5	6	7	8
6SK7 OSC.-MOD.	GRD.	GRD.	GRD.	GRD.	GRD.	90	5.8	GRD.
6SK7 I.F. AMP.	GRD.	GRD.	GRD.	GRD.	GRD.	3.5	5.8	210
6K6-6T OUTPUT	J.B.	5.8	230	210	GRD.	J.B.	GRD.	1.5
6X5-6T RECTIFIER	GRD.	GRD.	250	J.B.	250	GRD.	5.9	240
6SA7 OSC. MOD.	GRD.	GRD.	210	GRD.	GRD.	CATH.	5.8	GRD.
6SK7 I.F. AMP.	GRD.	GRD.	GRD.	GRD.	GRD.	3.5	5.8	210

Battery drain of 6 volts - 7 amps  
 VOLTAGES MEASURED WITH 1000 $\Omega$  PER VOLT VOLTMETER FROM QUADERS TO TUBE PINS AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN.  
 N.C. ... NO CONNECTION  
 J.B. ... JUNCTION BLOCK



MODEL A-177

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6K7G	R-F Amplifier	6.0	225	90	4 0	4.0	—	—
6A8G	Osc.-Modulator	6.0	225	90	—	4.0	90	-18
6K7G	I-F Amplifier	6.0	225	90	3.2	3.2	—	—
6R7G	Diode Det. & 1st A-F Amplifier	6.0	170	—	—	7.0	—	—
6V6G	(2) Output	6.0	240	225	—	13.0	—	—
6W5G	Rectifier	6.0	—	—	—	250	—	—

Power output approximately 9 watts.  
 Battery drain approximately 10 amperes at 6.0 volts.

CONNECTING OUTPUT METER

Connect the output meter to the plate (P) terminals of the 6V6G output tubes. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

NOTE: The receiver chassis should be in its case and a speaker similar to one used with the receiver should be connected to the chassis before making any adjustments. It is also advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before cutting them.

1. Tuning I-F Amplifier To 262 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- (b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.
- (c) Turn the volume control full on.
- (d) Leave the Fidelity Control cable disconnected from the chassis as this automatically sets the Fidelity Control in the TREBLE position and the Bass Compensation control in the OFF position.
- (e) Set the signal generator to 262 kilocycles.
- (f) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).
- (g) Adjust both trimmers located on the 1st I-F transformer for maximum output.
- (h) Repeat operations (f) and (g) for more accurate adjustments.

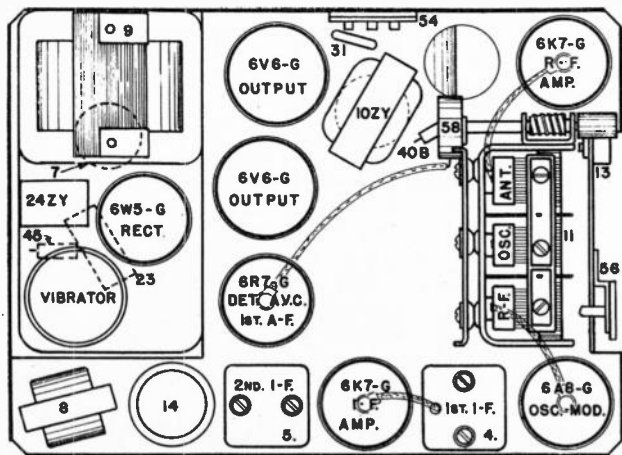


Fig. 2 Top View A-177

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.
- (f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (g) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.
- (h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

- (a) Set the signal generator to 600 kilocycles.
  - (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
  - (c) Adjust the antenna compensating condenser, Illustration No. 13, Fig. 3, for maximum output.
  - (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
  - (e) Set the signal generator to 1400 kilocycles again.
  - (f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.
  - (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.
- (a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.
  - (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

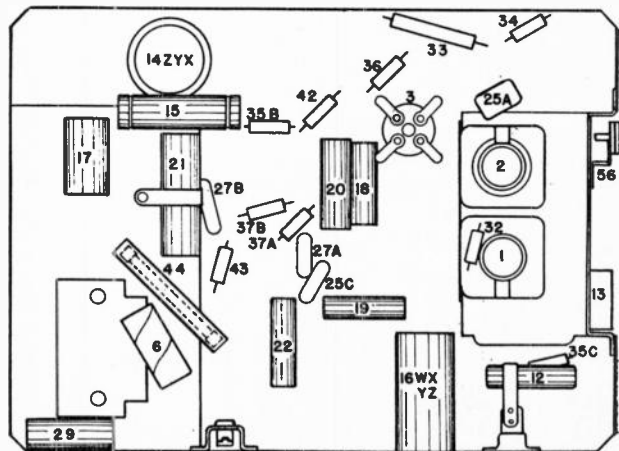
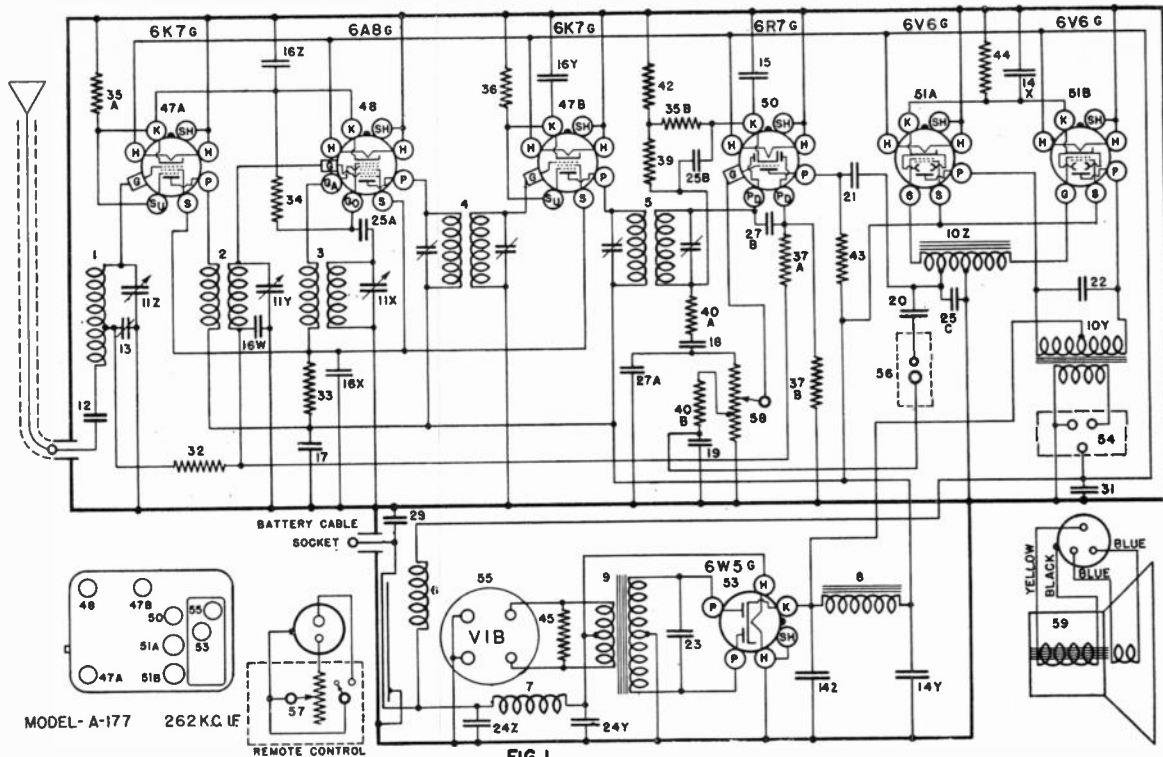


Fig. 3 Bottom View A-177

MODEL A-177



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G134-32000	Ant. Coil (only)	46	-35600	Resistor 100,000 Ohm 1/4W.
2	G93-32001	R-F Coil (only)	47AB	G151-36400	Socket Type 6K7
	W-38995	Coil Shield	48	G156-36400	Socket Type 6A8
	W-32912	Wood Spacer (Coil)	49	NONE	
3	G134-32002	Osc. Coil	50	G164-36400	Socket Type 6R7
4	G38-32005	1st I-F Assembly	51AB	G176-36400	Socket Type 6V6
5	G39-32005	2nd I-F Assembly	52	NONE	
6	G15-32977	Choke—Motor Noise	53	G177-36400	Socket Type 6W5
7	G20-28067	Choke—"A" Filter	54	W-38953	Socket 3 Prong Speaker
8	G75-24628	Choke—"B" Filter	55	G105-28807	Socket Vibrator
9	G14-32769	Power Transformer	56	W-50083	Socket 2 Prong—T. C. & B. Comp. Vibrator
10	G1-50063	Input and Output Unit Complete	57	See Remote	Control Head, etc.
10Z	G6-38557	Input Transformer Coil	58	-50056	Volume Control 2 Meg. Tap 1 Meg.
10Y	G3-38884	Output Transformer Coil	59	424G8 "M"	Speaker—Header Assembly
	W-50062	Copper Shield Slug		43613 "M"	Speaker Unit only—Spec. 1-D-896
11	G57-33002	3 Section Var. Tuning Cond.		-43463	Cone Assembly
	W-38899A	Condenser .003 Mf. 160 V.		-40305	Field Coil
12	W-50039	Condenser .003 Mf. 160 V.		-43606A	Cable and Plug
13	W-50054A	Ant. Series Trimmer Cond.		-38911	Case—Speaker
14Z	W-50076A	Condenser 8 Mf. 350 V.—Red		-40781	Baffle Gasket
14Y	W-50076A	Condenser 8 Mf. 350 V.—Blue		-38912	Screen and Grille Assembly
14X	W-50076A	Condenser 12 Mf. 25 V.—Yellow		W-50014	Clamp—Elec. Cond.
15	W-38430	Condenser 4 Mf. 10 V.		W-50002	Stud—Sync. Mtg.
16Z	W-50075	Condenser .05 Mf. 160 V.—Green		W-38873	Clip—Vib. Ground
16Y	W-50075	Condenser .05 Mf. 160 V.—Green		W-41010	Clamp—Condenser
16X	W-50075	Condenser .05 Mf. 160 V.—Green		W-50083	Socket—Tone Control
16W	W-50075	Condenser .05 Mf. 160 V.—Green		B-50052	Emblem
17	W-32780B	Condenser .05 Mf. 400 V.—		N-2	Nut—Emblem Mtg.
18	W-50064	Condenser .01 Mf. 160 V.		W-38455B	Template and Spacer, Case Mtg.
19	W-50084	Condenser .003 Mf. 160 V.		-6213	Nut—Hex Mtg.
20	W-50065	Condenser .15 Mf. 400 V.		W-32957	Washer—Shakeproof Mtg.
21	W-50066	Condenser .15 Mf. 400 V.		W-32956A	Stud—Case Mtg.
22	W-25435	Condenser .003 Mf. 400 V.		W-32783	Lead—24" Ant. Connector
23	W-50068A	Condenser .006 Mf. 1000V.		W-38038 D	Suppressor, Distributor
24Z	W-38990	Condenser 5 Mf. 160 V.		W-29754C	Condenser—Gen. and Amm.
24Y	W-38990	Condenser 5 Mf. 160 V.		W-50085	Control Head and Cables—Remote
25	G1-34002	Condenser .00025 Mf. Molded		W-50061	Tone Control
26	G1-34002	Condenser .00025 Mf. Molded		W-50095	Flexible Cable (Vol. Cont.)
27	G2-34002	Condenser .0001 Mf. Molded		W-50096	Flexible Cable (Cond. Drive)
28	G1-34002	Condenser .00025 Mf. Molded		W-50092	Cable and Plug (Tone Cont.)
29	W-50105	Condenser 1 Mf. 160 V.		W-50098	Lead to Ammeter with Clip
30	G2-34002	Condenser .0001 Mf. Molded		W-50097	Lead to Ammeter, part of Fuse Con-tainer
31	G3-34002	Condenser .0005 Mf. Molded		W-50099	"A" Lead to Set
32	-35601	Resistor 300,000 Ohm 1/4W.		W-43567	Bulb, Dial Light
33	-37377	Resistor 20,000 Ohm 1W.			<b>SPEAKER MOUNTING PARTS</b>
34	-35928	Resistor 60,000 Ohm 1/4W.		W-34840B	Stud—Mtg.
35	-38916	Resistor 350 Ohm 1/4W.		W-12388	Nut—Hex Mtg.
36	-38918	Resistor 600 Ohm 1/4W.		MG4-38869	Muffler
37	-35602	Resistor 1 Megohm 1/4W.		W-38964	Gasket—Muffler
38	-35602	Resistor 1 Megohm 1/4W.		W-42253	Screw—Muffler Mtg.
39	-35929	Resistor 150,000 Ohm 1/4W.		W-50074	Spacer, Speaker—used only when impossible to use Muffler
40	-35600	Resistor 100,000 Ohm 1/4W.			
41	-38916	Resistor 350 Ohm 1/4W.			
42	-36316	Resistor 2700 Ohm 1/4W.			
43	-36760	Resistor 20,000 Ohm 1/4W.			
44	W-22172A	Resistor 220 Ohm 1 1/2W. Flex.			
45	-38977	Resistor 220 Ohm 1/4W.			

# MODEL A-250

## CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6GT Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### 1. Aligning The I-F Amplifier (455 Kc.)

(a) Connect the output of the signal generator through a .02 mf., or larger, condenser to the top cap of the 6A8GT oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the chassis.

(b) Set the signal generator to 455 kilocycles.

(c) Open the tuning condenser all the way, turn the volume control on full.

(d) Adjust both trimmers on the 2nd. I-F transformer for maximum output. (See figure 3).

(e) Adjust both trimmers on the 1st I-F transformer for maximum output. (See figure 3).

(f) Repeat (d) and (e) for more accurate adjustments. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING TO PREVENT A. V. C. ACTION.

### 2. Aligning R-F Amplifier

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Check the pointer travel on the dial to see that it makes a complete trip, reset if necessary. Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located to the right of antenna receptacle, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

### SETTING PUSH BUTTONS

The push buttons are easily reset if necessary. Remove the push button by pulling straight out. Loosen the set screw two or three turns. With the manual control tune-in station to which key is to be set. With a small screw driver inserted in set screw push the key ALL THE WAY DOWN, then securely tighten set screw.

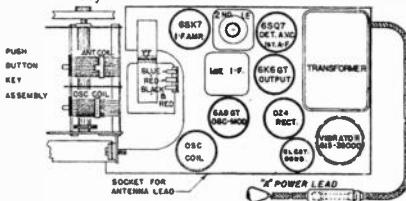


Fig. 2—Top View Model A-250

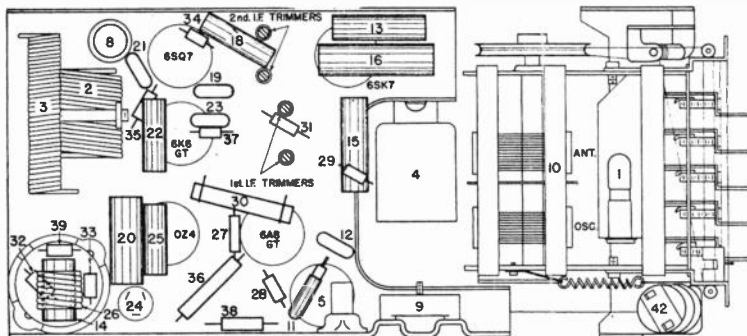


Fig. 3—Bottom View Model A-250

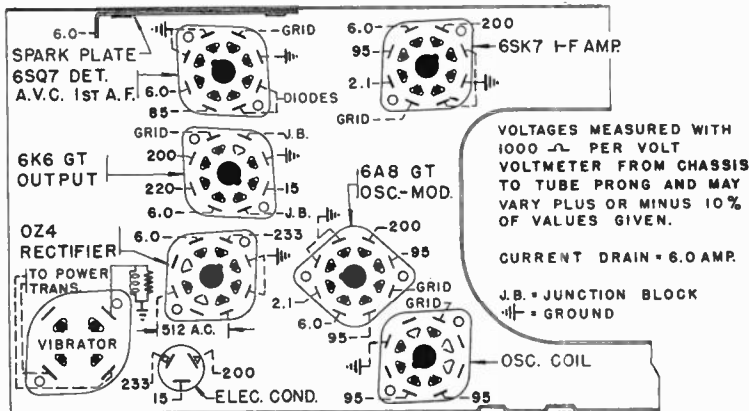
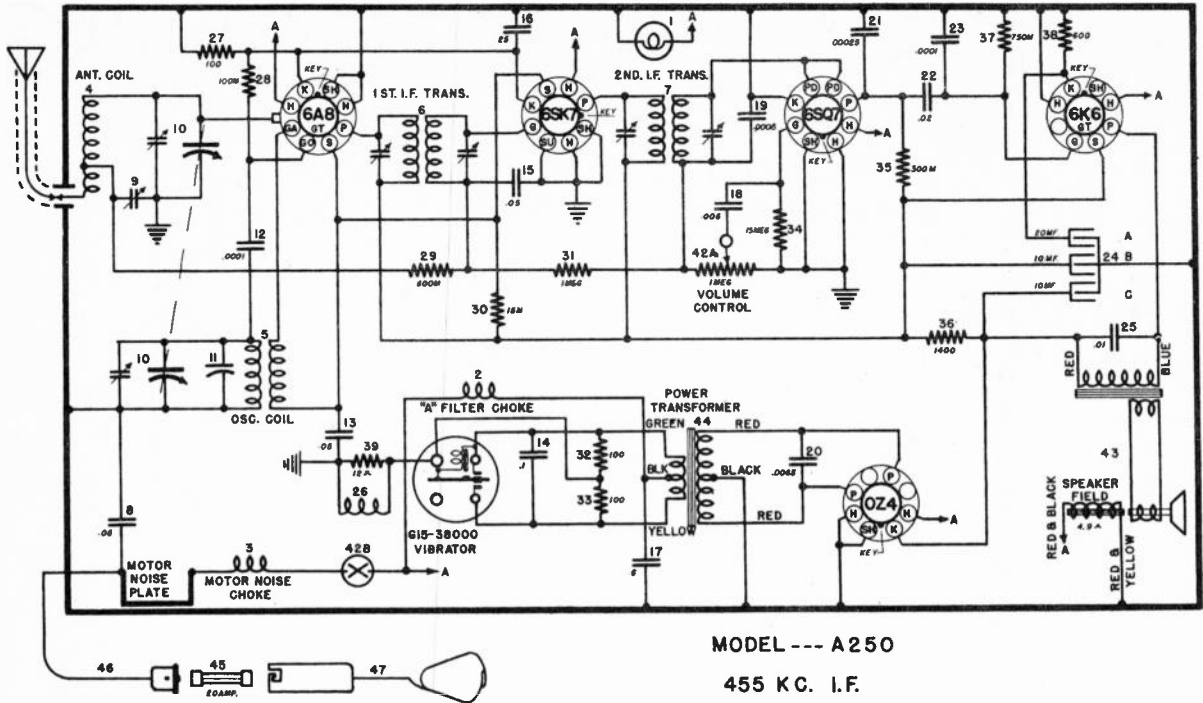


Fig. 5—Socket Voltage Layout

# MODEL A-250

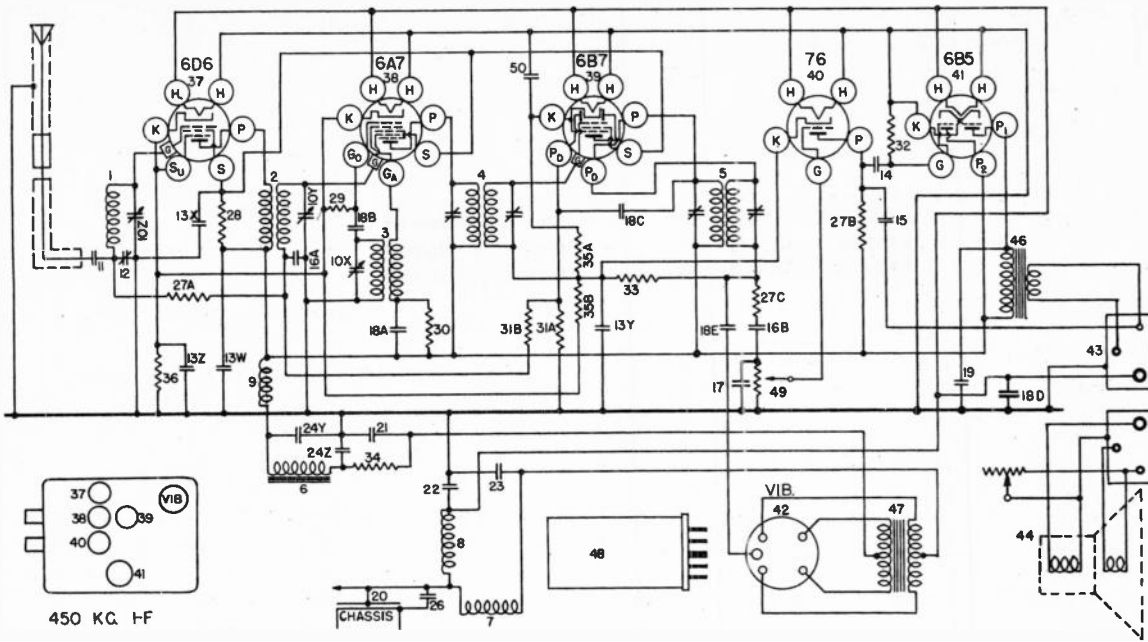


MODEL --- A250  
455 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W ---37922	Dial Lamp—6.8 Volt	45	W ---50680	P. T. Shield (Can)
	MG22---51670	D. L. Socket and Reflector Assy.	46	W ---50469	Fuse (20 Amp.)
	G49 ---40255	Spring—D. L. Socket	47	C34 ---32750	"A" Lead—Screw to Fuse
2	G32 ---28067	Wire and Eyelet Assy.—D. L. Socket		C37 ---32750	"A" Lead—Fuse to Ammeter
3	G23 ---32977	"A" Filter Choke		G15 ---38000	Vibrator
4	G175---32000	Motor Noise Choke		G105---28807	Socket—Vibrator
5	G3 ---51014	Antenna Coil		W ---50123A	Ground Clip—Vibrator
6	G239---32004	Oscillator Coil—Hermetically Sealed		W ---51801	Shield—Vibrator Socket
7	G226---32004	1st I-F. Assy.—455 Kc.			<b>MISCELLANEOUS PARTS</b>
8	W ---35936	2nd I-F. Assy.—455 Kc.		C ---51679	Glass Dial Face
9	W ---51111	Condenser, .05 Mf. 200 V.		W ---51691	Clip—Dial Mounting
10	C ---51700B	Antenna Series Trimmer Condenser		B ---51690	Bezel—Dial Escutcheon
	W ---51786	Gang and Push Button Assy.		W ---51692	Celluloid Dial Window
	W ---51721	Screw—Station Setting		MG35---51680	Pointer—Dial Hand Assy.
	W ---51140	Clamp—Key Toggle Lock		W ---51694	Diffuser—Dial Light
11	W ---51140	Push Button		U ---51718	Stud—Diffuser Mounting
12	G2 ---34002	Condenser—Temp. Compensating		MG26---51670	R. H. Cord Bracket Assy.
13	W ---32380	Condenser, .001 Mf. Molded		MG27---51670	L. H. Cord Bracket Assy.
14	W ---51800	Condenser, .05 Mf. 200 V.		W ---51535	Wood Idler Pulley
15	W ---45817B	Condenser, .1 Mf. 100 V.		G23 ---43564	Pulley and Hub Assy.
16	W ---34712	Condenser, .25 Mf. 160 V.		G17 ---41582	Drive Cord (3 1/4")
17	W ---50682A	Condenser, .5 Mf. 120 V.		W ---50590	Spring—Drive Cord Tension
18	W ---45810B	Condenser, .006 Mf. 400 V.		G11 ---41582	Cord—Pointer Guide
19	G3 ---34002	Condenser, .0005 Mf. Molded		W ---43561	Spring—Guide Cord Tension
20	W ---50203	Condenser, .0065 Mf. 1,000 V.		W ---51657	Manual Shaft and Worm Assy.
21	G1 ---34002	Condenser, .0025 Mf. Molded		W ---51071	"C" Washer—Shaft Retaining
22	W ---28621	Condenser, .02 Mf. 200 V.		W ---51710	Bracket—Manual Shaft Mtg.
23	G2 ---34002	Condenser, .0001 Mf. Molded		B ---51701	Bracket—Tuning Unit Mtg.—Front
24	W ---51139	Condenser—3 Section Electrolytic A—20 Mf. 25 Volt B—10 Mf. 350 Volt C—10 Mf. 350 Volt		W ---51703	Bracket—Tuning Unit Mtg.—L. H. Rear
25	W ---23191A	Condenser, .01 Mf. 400 V.		W ---45580	Rubber Grommet—Unit Mtg.
26	G39 ---28067	Filter Choke		W ---45620	Headed Bushing—Unit Grommet Mtg.
27	---38915	Resistor, 100 Ohms 1/4 W. W. W.		W ---38038D	Distributor Suppressor
28	---35600	Resistor, 100,000 Ohms 1/4 W. Ins.		W ---29754C	Generator Condenser
29	---36322	Resistor, 500,000 Ohms 1/4 W. Ins.		W ---50167	Radio Rear Mtg. Strap
30	---23616	Resistor, 15,000 Ohms 1 W. Carb.		W ---35065	1/4" x 20 x 1 1/4" Sq. Hd. Screw—Strap Mtg.
31	---36322	Resistor, 1 Megohm 1/4 W. Ins.		W ---6213	1/4" x 20 Hex. Nut—Strap Mtg.
32	---38915	Resistor, 100 Ohms 1/4 W. W. W.		W ---38205	1/4" Lockwasher—Strap Mtg.
33	---38915	Resistor, 100 Ohms 1/4 W. W. W.		U ---51715	Bracket—Case to Instr. Panel Mtg.
34	---50671	Resistor, 15 Megohms 1/4 W. Ins.		W ---25846	Screw—No. 10 x 3/4" P. K.—Instr. Panel Mtg.
35	---35601	Resistor, 300,000 Ohms 1/4 W. Ins.		W ---25788	Screw—No. 8 x 3/4" P. K.—Bracket to Case
36	---45388	Resistor, 1,400 Ohms 1 1/4 W. W. W.		O ---10	Flat Washer—Front Bracket Mtg.
37	---38623	Resistor, 750,000 Ohms 1/4 W. Ins.		W ---51727	Call Letter Sheet
38	---38918	Resistor, 600 Ohms 1/4 W. W. W.		MG3---51671	Instruction Envelope Assy.
39	---51804	Resistor, 12 Ohms 1/4 W. W. W.		W ---51677	Shipping Carton
40				MG2---51670	Case Assy.
41				W ---51720	Knob (2)
42	---51711	Volume Control and Switch A—Volume Control—1 Megohm B—On-Off Switch		W ---51655	Case Body (FS-11 and FS-79)
43	278-BL-5	Speaker		W ---51666	Front Cover—Case (FS-11 and FS-79)
44	B ---51756	Power Transformer		W ---51184	Lid—Case (FS-11 and FS-79)
				MG2---51641	Set Mtg. Parts Kit

MODELS A-255, A-355



Item No.	Part No.	Description	Item No.	Part No.	Description
1	G83-32000	Coil, Ant. Trans.	22	W-37190	.02 mf. 160 v. Cond.
2	G22-32001	Coil, R.F. Trans.	23	W-38433	.5 mf. 160 v. Cond.
3	G27-32002	Coil, Osc. Trans.	24	W-38473-A	8.0 mf. 350 v. Conds.
4	G16-32005	Coil, 1st I.F. Trans.	50	W-24049	.1 mf. 200 v. Cond.
5	G15-32005	Coil, 2nd I.F. Trans.	26	W-29910-A	.25 mf. 200 v. Cond.
6	G31-24628	Coil, "B" Filter Choke	17	G2-34002	.0001 mf. Cond.
7	G9-28067	Coil, "A" Filter Choke	27	35600	100,000 ohm Type C Res.
8	G6-32977	Coil, Motor Noise Choke	28	36952	30,000 ohm Type A Res.
9	G5-32977	Coil, Motor Noise "B" Choke	29	35928	60,000 ohm Type C Res.
10Z	G44-33002	Cond. Var. Ant. Sec.	30	36760	20,000 ohm Type C Res.
10Y		Cond. Var. R.F. Sec.	31	35602	1 meg. Ins. Res.
10X		Cond. Var. Osc. Sec.	32	36322	500,000 ohm Type C Res.
11	W-38367	.02 mf. 200 v. Cond.	33	35601	300,000 ohm Type C Res.
12	W-38350	Ant. Trim. Cond.	34	W-32961	100 ohm 3 w. Flex. Res.
13Z, Y	W-38419	.1 mf. 200 v. Cond.	35	W-22514	750 ohm 1/2 w. Flex. Res.
13X, W	W-38419	.05 mf. 400 v. Cond.	36	W-35467	220 ohm 1/2 w. Flex. Res.
14	W-38488	.05 mf. 400 v. Cond.	42	W-32965-A	Socket "Vib" 5 Prong
15	W-38466	.03 mf. 400 v. Cond.	43	W-38365	Socket "Speaker" 3 Prong
16	W-28621	.02 mf. 200 v. Cond.	44	324G-2	5" Speaker
18	G1-34002	.00025 mf. Conds.	46	G29-24628	Output Trans.
19	W-30805	.01 mf. 400 v. Cond.	47	G8-32769	Power Trans.
20	W-32904	20 mmf. Cond.	48	G7-38000	Vibrator Assy.
21	W-38431	.15 mf. 400 v. Cond.	49	38425	Vol. Cont.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P2	S	G	K	Su	Ga	Go
6D6	R-F Amplifier	6.0	240	—	80	0	5.5	—	—	—
6A7	Osc.-Mod.	6.0	240	—	80	0	5.5	—	165	0 to -30
6B7	I-F, Diode Det. & AVC	6.0	240	—	80	0	3.5	—	—	—
6D6	1st A-F Amplifier	6.0	50	—	35	1.5	3.5	3.5	—	—
42	Output	6.0	220	—	230	-7*	0	—	—	—
84	Rectifier	6.0	240	240	—	—	—	—	—	—

Power Output Approximately 3 Watts.

Battery Drain Approximately 7.0 Amperes at 6 volts.

\*True Bias Reading Approximately -15 Volts Measured Across Filter Choke.

**1. Tuning I-F Amplifier To 262 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R.F. Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(h) Repeat operations (e) and (f) for more accurate adjustments.

**3. Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 10, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

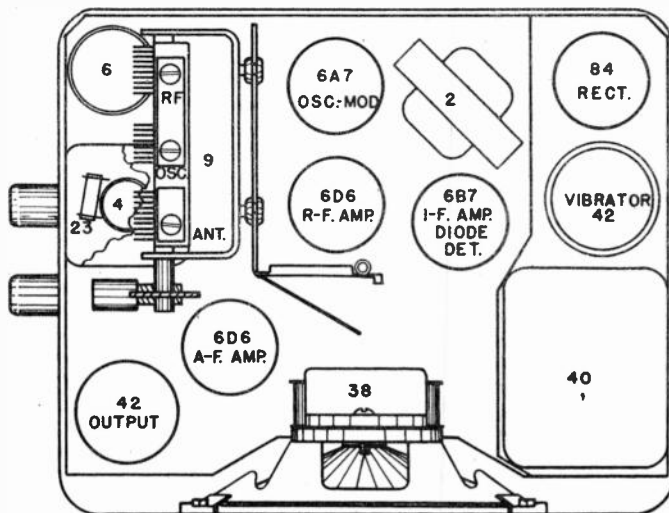


Fig. 2. Top View A-266

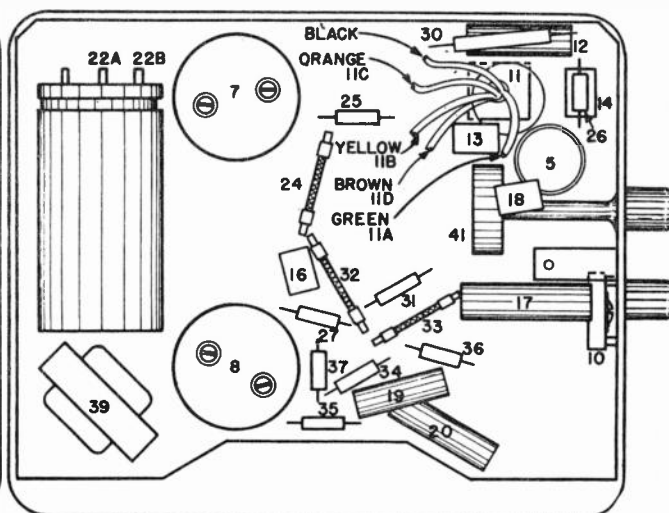


Fig. 3. Bottom View A-266





# MODEL A-267

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6K7G	R-F Amplifier	6.0	235	85	0	—	—
6A8G	Oscillator-Modulator	6.0	235	85	0	0	85
6K7G	I-F Amplifier	6.0	235	85	0	—	—
6Q7G	Det. AVC & A-F Amplifier	6.0	145	—	-3.5	—	—
6K6G	Output	6.0	235	—	0	—	—
OZ4	Rectifier	—	—	—	250	—	—

Power output approximately 5 watts.  
 Battery drain approximately 6.3 amperes at 6 volts.  
 Speaker field current approximately 1.0 amperes.

### 1. Tuning I-F Amplifier to 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh, and turn the volume control full (ON).

(c) Set the signal generator to 262 kilocycles.  
 (d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

### 2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1530 kilocycles.

(c) With the condenser gang all the way open, adjust the "OSC" trimmer condenser so that the 1530 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune-in the 1400 kilocycle signal with the station selector (approximately 140 on the dial) for maximum reading on the output meter.

(f) Adjust the "R-F" trimmer condenser for maximum output.

(g) Adjust the "ANT" trimmer condenser for maximum output.

DO NOT READJUST THE "OSC" TRIMMER CONDENSER.

(h) Repeat operations (e), (f) and (g) for more accurate adjustments.

### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune-in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Item No. 11, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

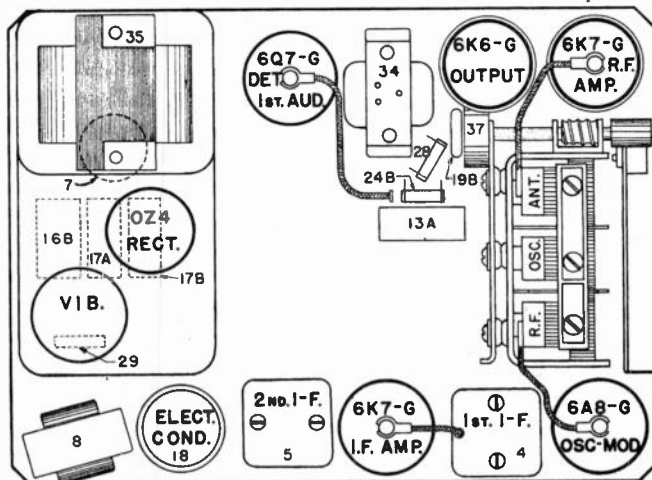


Fig. 2 Top View A-267

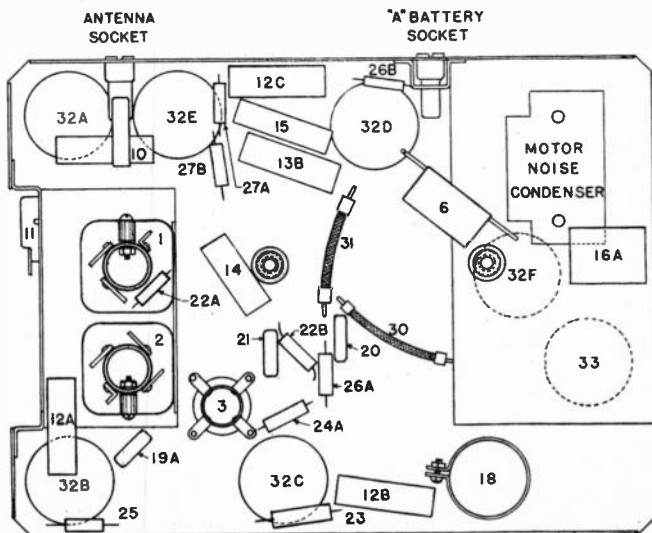
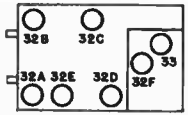
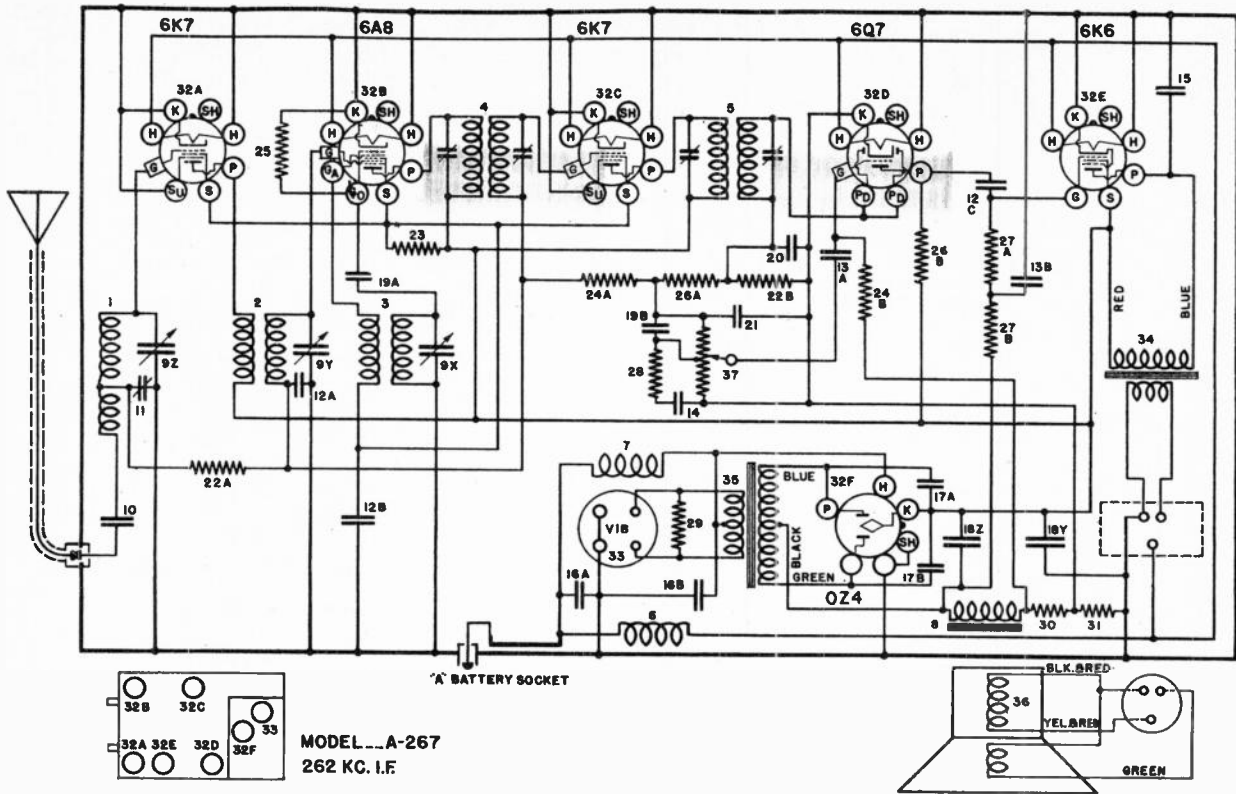
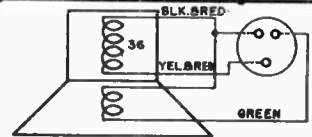


Fig. 3 Bottom View A-267

# MODEL A-267



MODEL A-267  
262 KC. I.F.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	G134-32000	Ant. Coil	W	-50023	Tube Shield (6K6-G) (2)	
2	G93-32001	R-F. Coil	W	-31210	Tube Shield Ring	
	MG23-50000	Shield and Brkt. Assy.	W	-50174	Tube Shield Base	
	W	Wood-Coil Spacer	33	G105-28807	Socket-Vibrator	
3	G143-32002	Osc. Coil	W	-50123	Vib. Ground Clip	
4	G40-32005	1st I-F. Assy.	34	G78-24628	Output Transformer	
5	G41-32005	2nd I-F. Assy.	W	-38951A	Speaker Socket, Part of G1-43619 Assy.	
6	G17-32977	Motor Noise Choke	35	G17-32769	Power Transformer	
7	G24-28067	"A" Filter Choke	36	456BP9"M"	Speaker, Spec. No. 1-D-1075	
8	G79-24628	"B" Filter Choke		-44548	V. C. and Cone Assy.	
9ZYX	G57-33002	3 Sect. Var. Tuning Condenser		-44549	Field Coil	
10	W	-50039B		-43676	Cone Mtg. Ring	
11	W	-50054A		-50056	Volume Control (2 Meg. Tap 1 Meg.)	
12A	W	-32380	37	W	-38455A	Case Mtg. Spacer
12B	W	-32380		-6213	Mtg. Nut (2)	
12C	W	-32380		W	-32957	Mtg. Washer (2)
13A	W	-24049C		W	-32783A	24" Ant. Lead
13B	W	-24049C		W	-380381	Distributor Suppressor
14	W	-50084		W	-29754C	Generator Condenser
15	W	-50043		W	-32956A	Mtg. Studs
16A	W	-50161		B	-38985C	Remote Cont. Head and Cables
16B	W	-50161			-43849	Vol. Cont. Head and Cable Assy.
17A	W	-50185			-50103	Vol. Cont. Head and Switch
17B	W	-50185		W	-43567	Dial Light
18YZ	W	-50194			-50100	Light Socket and Lead
19A	G1-34002	Condenser, .00025 Mf. Mica			-50099	"A" Lead to Set
19B	G1-34002	Condenser, .00025 Mf. Mica			-50097	"A" Lead—Head to Fuse
20	G3-34002	Condenser, .0005 Mf. Mica			-50098	"A" Lead—Fuse to Ammeter
21	G2-34002	Condenser, .0001 Mf. Mica			-50095	Vol. Cont. Flex. Drive Cable
22A	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.			-50101	Drive Control Head
22B	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.			-50206	Celluloid Gear Assy.
23	-37377	Resistor, 20,000 Ohm 1 W. Ins.			-50096	Cond. Flex. Drive Cable
24A	-35602	Resistor, 1. Megohm 1/2 W. Ins.			-50057	Fuse, 15 Amp.
24B	-35602	Resistor, 1. Megohm 1/2 W. Ins.		G10	-38000	Vibrator
25	-35928	Resistor, 60,000 Ohm 1/2 W. Ins.		MG2	-50267	Top Cover Assy. (Spk., etc.)
26A	-35600	Resistor, 100,000 Ohm 1/2 W. Ins.		W	-50180A	Ground Strip (Short)
26B	-35600	Resistor, 100,000 Ohm 1/2 W. Ins.		W	-50181A	Ground Strip (Long)
27A	-38976	Resistor, 250,000 Ohm 1/2 W. Ins.		B	-50187	Speaker Escutcheon
27B	-38976	Resistor, 250,000 Ohm 1/2 W. Ins.		B	-50188	Speaker Screen
28	-40757	Resistor, 50,000 Ohm 1/2 W. Ins.		B	-50189A	Speaker Grille Cloth
29	-38977	Resistor, 220 Ohm 1/2 W. Ins.		W	-50069A	Speaker Cable Clamp
30	W	-23012A		W	-31393A	"A" Connector on Chassis
31	W	-25357		W	-31303A	Bushing and Ferrule Used in "A" and Ant. Connections
32	G178-36400	Socket—8-Prong		W	-31301	Spring—Used in Ant. Socket
	W	-50021				
	W	-50022				

# MODEL A-358

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.7	100	—
6U7-G	I-F Amplifier	6.0	220	100	—	3.7	—	—
6Q7-G	Diode Detector & A-F Amp.	6.0	65	—	—	—	—	—
6K6-G	Output	6.0	220	220	—	16	—	—
6X5-G	Rectifier	6.0	—	—	—	250	—	—

Power Output approximately 4 Watts. (Max.)  
 Battery Drain approximately 6.2 Amperes at 6 Volts.  
 It should be noted that some of the lugs on the sockets are used as junction blocks.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

### CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6U7G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8G Osc.-Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

**IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

### 2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.00065 mf.) to 250 mmf. (.00025 mf.),

depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity or vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

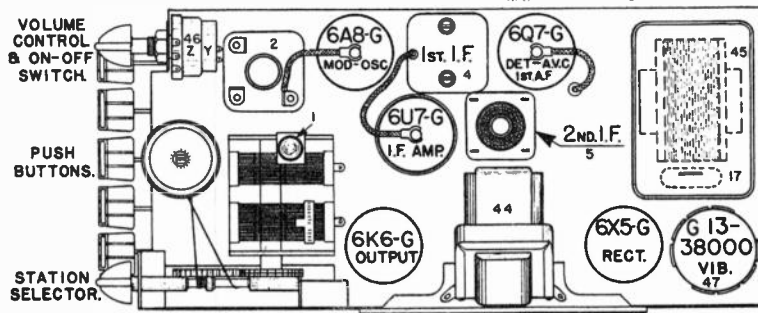


Fig. 2 Top View A-358

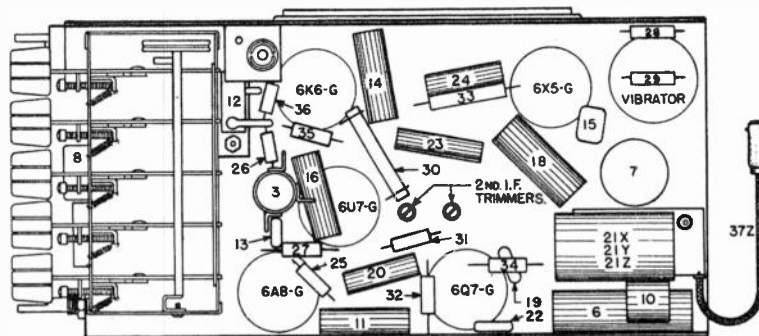
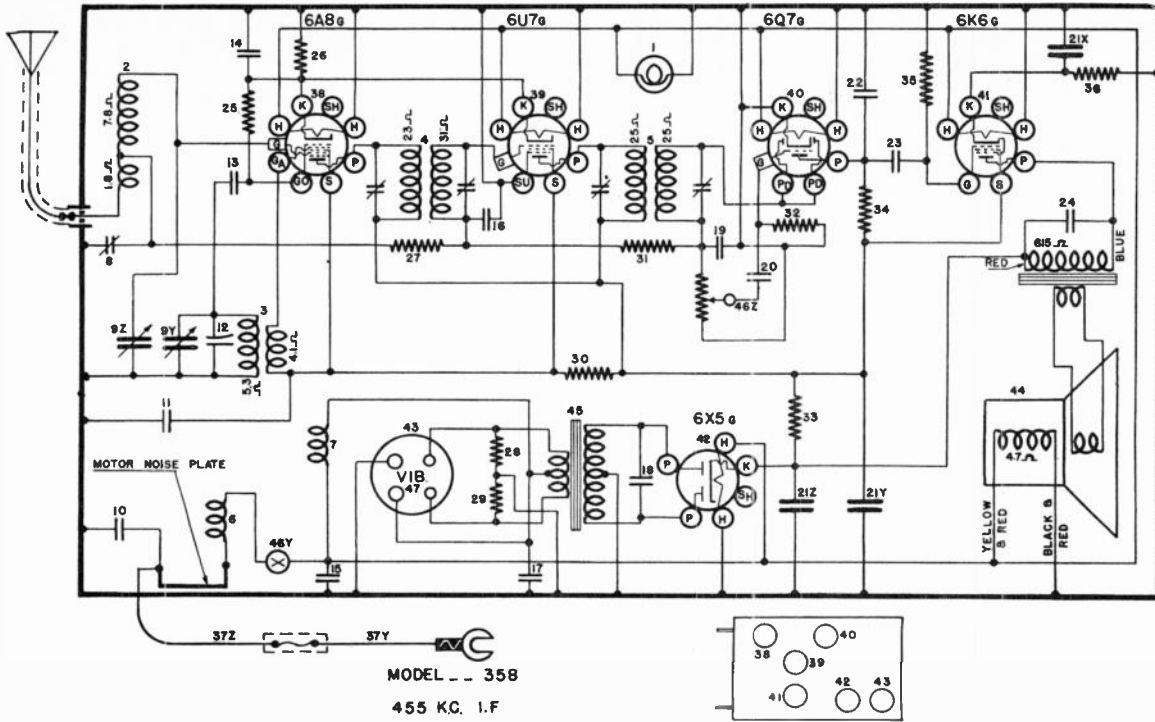


Fig. 3 Bottom View A-358

MODEL A-358



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43587	Dial Light Bulb 6-8 Volt	36	—38918	Resistor, 600 Ohm ½ W., Ins.
2	MG11—50700	D. L. Socket & Brkt. Assy.	37Z	—37750	"A" Lead, Set To Fuse
3	G175 —32000	Antenna Coil	G27	—32750	"A" Lead, Set To Ammeter
4	G176 —32002	Oscillator Coil	W	—32757	Fuse, 12 Amp.
5	G197 —32004	1st. I. F. Assembly, 455 Kc.	W	—32776	Fuse Insulator
6	G198 —32004	2nd. I. F. Assembly, 455 Kc.	38		
7	G19 —32997	Motor Noise Choke	39		
8	G29 —28087	"A" Filter Choke	40	G178 —36400	8 Prong Socket
9	—38998B	Antenna Compensating Con-	41		
	—50049	denser	42		
	G57 —33001	Nut For Item 8 (¼—40)	43	G105 —28807	Tube Shield Half (2 Req.)
	C —50711A	2 Section Gang Condenser	44	G27 —45889	Tube Shield Ring
	W —50716	Dial (Celluloid)		G27 —45889	4 Prong Socket
	W —50711A	Dial Holder		278-BL-7"U"	Speaker Mfg. Spec. No. 5B-122
	W —50325A	Dial Shaft (Pulley)		278-BL-7"B"	Output Transformer "U"
	W —50324D	Shaft Retaining Washer		—45721	Speaker Mfg. Spec. No. 55-W1
	G7 —41582	Shaft, Manual Drive		B —50644	Output Transformer "B"
	W —44989	Drive Cord, 29 inches	45	B —50644	Power Transformer
	W —50518C	Spring, Tension	46Z	—50526	Volume Control
	W —35936	Bracket (Manual Drive Shaft)	46Y		
10	W —32380	Condenser, .05 Mf. 200 Volt	47	G10 —38000	On-Off Switch
11	W —32380	Condenser, .05 Mf. 200 Volt		G13 —38000	Vibrator, Interchangeable
12	G4 —50369	Temperature Compensating		MG27—50700	Vibrator
		Condenser		MG25—50550	Push Button Unit Assy.
13	G1 —34002	Condenser, .00025 Mf. Molded		—50550	Key Assy.
14	W —50105	Condenser, .1 Mf. 160 Volt.		W —50542C	Key Clip (Lock Clamp)
15	G3 —34002	Condenser, .0005 Mf. Molded		—50539	Key Clip (Lock Clamp)
16	W —32380	Condenser, .05 Mf. 200 Volt		W —50687B	1" No. 6 x 32 Screw (Clamp)
17	W —50682	Condenser, .5 Mf. 120 Volt		W —50588B	Spring (Key Return)
18	W —50203	Condenser, .0065 Mf. 1000 Volt.		W —50588B	Adjusting Clip (Heart Shaped)
19	G3 —34002	Condenser, .0005 Mf. Molded		—43882	¼" No. 8 P. K. Screw (Clip
20	W —45810B	Condenser, .006 Mf. 160 Volt		W —50547	Mounting)
21Z	W —50673	Condenser, .008 Mf. 160 Volt		MG24—50550	Key Plate (Rear Guide)
21Y		Condenser, 5 Mf. 350 Volt		W —50561	Rocker Plate Assy.
21X		Condenser, 5 Mf. 350 Volt			¼" No. 6 x 40 Fil. Hd. Screw
22	W —50684	Condenser, 20 Mf. 25 Volt		—45553B	(Rocker Plate Bearing)
23	G1 —34002	Condenser Clamp		W —50551A	Push Button
24	W —37228	Condenser, .0025 Mf. Molded		W —50549	Celluloid Cover
25	W —23191A	Condenser, .02 Mf. 160 Volt		D —50503D	Call Letter Sheet
	—35600	Condenser, .01 Mf. 400 Volt		C —50703A	Case (Rear Half) FS66
26	—38977	Resistor, 100,000 Ohm ¼ W.,		—50505	Case (Front Half) FS66
27	—38322	Ins.			Knob (2 Req.)
		Resistor, 220 Ohm ¼ W., Ins.			
		Resistor, 500,000 Ohm ¼ W.,			
		Ins.			
28	—38915	Resistor, 100 Ohm ¼ W., Ins.			
29	—38915	Resistor, 100 Ohm ¼ W., Ins.			
30	—23616	Resistor, 15,000 Ohm 1 W., Car.			
31	—35602	Resistor, 1 Megohm ¼ W., Ins.			
32	—50671	Resistor, 15 Megohm ¼ W.,			
		Ins.			
33	—45388	Resistor, 1,400 Ohm 1½ W.,			
		Ins.			
34	—35601	Resistor, 300,000 Ohm ¼ W.,			
		Ins.			
35	—38623	Resistor, 750,000 Ohm ¼ W.,			
		Ins.			

# MODEL A-359

## Aligning The I. F. To 455 Kilocycles.

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid cap of the 6A8 oscillator-modulator. Care should be exercised to keep the signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I. F. trimmers for maximum output. Trimmers are accessible from bottom of the chassis between the 6SQ7 socket and oscillator coil.

(d) Adjust both 1st I. F. trimmers for maximum output. Trimmers accessible from bottom of the chassis.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

## Aligning The R. F.

If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

A. 220-550 meter band (1500-550 kilocycles).

(a) Set signal generator to 1395.5 kc. or 215 meters.

(b) Adjust tuning condenser to 215 meters on dial, about third line from right on top row of numbers. Turn band switch to medium waveband.

(c) Adjust M. W. oscillator trimmer (on small section of the gang, right end) for maximum output.

(d) Adjust M. W. antenna trimmer (on other section of gang) for maximum output.

(e) After alignment, check gang tracking at 300 and 500 meters. mis-tracking may be corrected by bending end plates on tuning condenser. If plates are bent to correct tracking, the previous alignment should be re-checked.

B. 1000-1800 meter band (300-166 kilocycles).

(a) Change band switch to long waveband and tune pointer to 1000 meter mark on dial.

(b) Set signal generator to 1000 meters (300 kilocycles).

(c) Adjust L. W. oscillator trimmer (next to antenna holder) for maximum output.

(d) Adjust L. W. antenna trimmer (next to osc. trimmer) for maximum output.

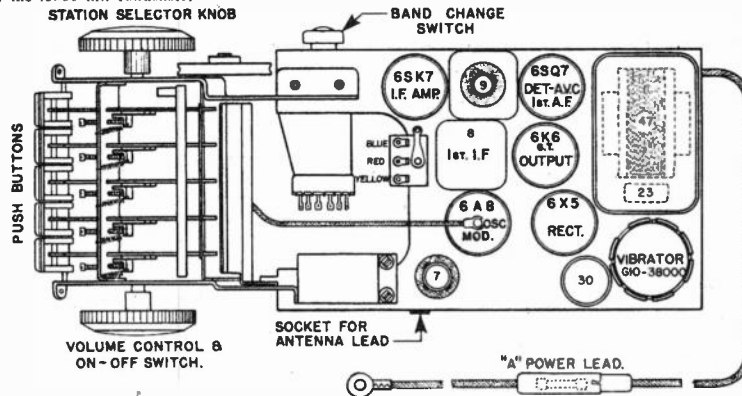


Fig. 3—Bottom View Model A-359

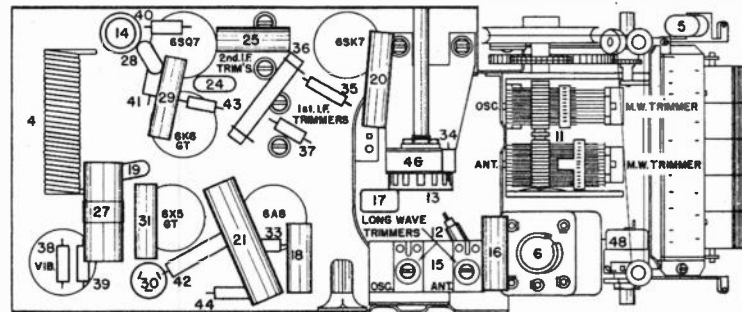


Fig. 2—Top View Model A-359

VALVE & FUNCTION	1	2	3	4	5	6	7	8
6A8 OSC.-MOD.	GR.	5.85	210	100	GR10	100	GR.	2.8
6SK7 I.F. AMP.	GR.	5.85	GR.	GR10	2.8	100	GR.	210
6SQ7 DET-AMC-1st. A.F.	GR.	GR10	GR.	SHOKE SHOKE PLATE PLATE	2.8	565	GR.	
6K6-GT. OUTPUT.	GR.	5.85	220	210	GR10	J.B.	GR.	15
6X5 RECT.	GR.	GR.	256	OPEN	256	5.9	J.B.	5.9 240

\* 50 VOLT SCALE, 1000 OHMS PER VOLT.  
 ● A.C. TO GROUND  
 6.5 AMPERES AT 6 VOLTS, NORMAL OPERATING CURRENT.  
 7.0 AMPERES AT 6 VOLTS, SOLENOID OPERATING CURRENT.  
 VOLTAGES MEASURED WITH 1000 Ω PER VOLT VOLT-METER FROM TUBE PRONG TO CHASSIS AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN.  
 GR.—GROUND. J.B.—JUNCTION BLOCK.  
 OPEN—NO CONNECTION.

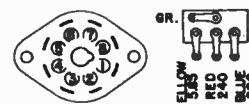
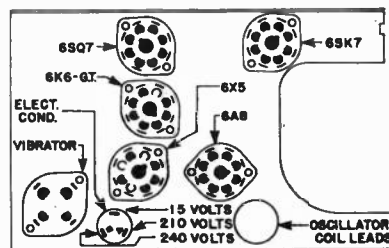
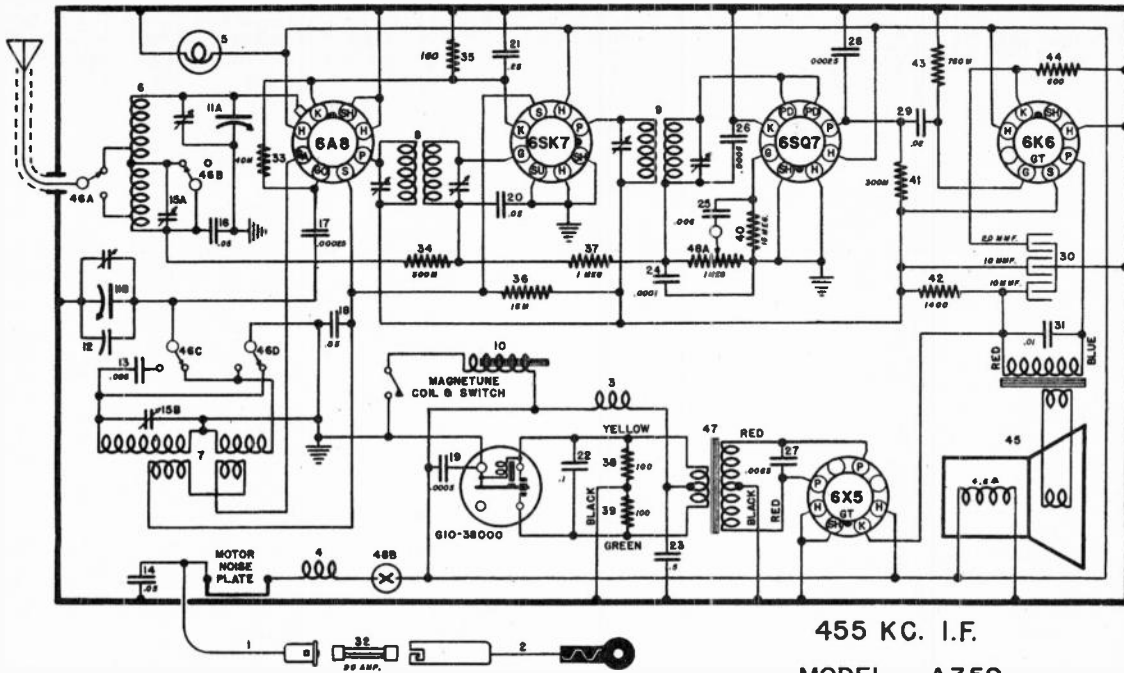


Fig. 4—Socket Voltage Chart

MODEL A-359



455 KC. I.F.

MODEL - A359

Figure in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G34-32750	"A" Power Lead Assy.—Set to Fuse	MG20-51169		Rocker Bar and Gear Assy.
2	G37-32750	"A" Power Lead Assy.—Fuse to Am-		-51120	Bearing
3	G33-28067	meter		-51307	Key Operating Bar
4	G24-32977	"A" Filter Choke		-50690	Spring—Key Return
5	-51245	Motor Noise Filter Choke		-51126	Solenoid Armature
6	G195-32000	Dial Antenna Coil		-51162	Key Contact Plate
7	G195-32002	Dual Oscillator Coil		-50989	Spring—Contact Plate Return
8	G216-32004	1st I-F. Assy.		-51188	Rubber Bumper—Key
9	G226-32004	2nd I-F. Assy.		-51194	Push Button
10	MG24-51169	Solenoid Coil		-51144	Rod—Push Button Mounting
11	G72-33001	Variable Tuning Condenser Gang.		-50561	No. 6—40 x 1/4" Screw—Rocker Bearing
12	-51140	Temperature Compensating Cond.	MG19-51169		Dial Bracket Assy.
13	-51244	Condenser, .006 Mf. 160 V.		-51211	Dial Mask—Paper Background
14	-35936	Condenser, .05 Mf. 200 V.		-51223	Glass Dial
15	MG34-51229	Condenser, Shunt Trimmers		-51134	R. H. Clip—Dial Glass Mtg.
16	-32380	Condenser, .05 Mf. 200 V.		-51133	L. H. Clip—Dial Glass Mtg.
17	G1-34002	Condenser, .00025 Mf. Mica		-51132	Pointer—Dial Hand
18	-32380	Condenser, .05 Mf. 200 V.		-50689	Felt—Dial Window
19	G3-34002	Condenser, .0005 Mf. Mica	G18-43564		Pulley and Hub Assy.
20	-32380	Condenser, .05 Mf. 200 V.		-48373	Manual Shaft and Pinion Gear Assy.
21	-32712	Condenser, .25 Mf. 160 V.	G5-41582		Drive Cord (18 1/2"—47 Cm.)
22	-50105	Condenser, .1 Mf. 120 V.		-51108	Socket—8 Prong—No Marking
23	-50682	Condenser, .5 Mf. 120 V.	G105-28807		Socket—4 Prong—Vibrator
24	G2-34002	Condenser, .0001 Mf. Mica		-50123	Ground Clip—Vibrator
25	-45810	Condenser, .006 Mf. 160 V.	G10-38000		Vibrator
26	G3-34002	Condenser, .0005 Mf. Mica		-51222	Case (FS-11 and FS-84)
27	-51301	Condenser, .0065 Mf. 1,000 V.		-51218	Front and Top Cover—Case (FS-11 and FS-84)
28	-34002	Condenser, .00025 Mf. Mica		-51184	Bottom Cover—Case (FS-11 and FS-84)
29	-28621	Condenser, .02 Mf. 200 V.		-51192	Knob (2)
30	-51139	Condenser, 10-10-25 Mf. 350 V.-350 V.-25 V.		-38935	Cover Wedge
31	-23191	Condenser, .01 Mf. 400 V.		-51221	Knob—Band Change Switch
32	-50469	Fuse—20 Amp.		-38038	Distributor Suppressor
33	-36761	Resistor, 40,000 Ohms 1/4 W.		-29754	Generator Capacitor
34	-36322	Resistor, 500,000 Ohms 1/4 W.		-50167	Rear Mounting Strap
35	-50672	Resistor, 160 Ohms 1/2 W. W. W.		-51177	Bracket—Front Mtg. (2 Req.) (FS-11 and FS-84)
36	-23616	Resistor, 15,000 Ohms 1 W.		-25816	No. 10 x 3/4" P. K. Screw—Front Bracket Mtg.
37	-35602	Resistor, 1 Megohm 1/4 W.		-6213	Nut (1/4") Rear Strap Mtg.
38	-38915	Resistor, 100 Ohms 1/4 W. W. W.		-35065	1/4"—20 x 1 1/2" Bolt—Rear Strap Mtg.
39	-38915	Resistor, 100 Ohms 1/4 W. W. W.		-38205	1/4" Lockwasher—Rear Strap Mtg.
40	-50671	Resistor, 15 Megohms 1/4 W.		-25788	No. 8—3/4" P. K. Screw—Bracket to Case Mtg.
41	-35601	Resistor, 300,000 Ohms 1/4 W.		-32783	Ant. Connector Cable—Accessory
42	-45388	Resistor, 1,400 Ohms 1 1/2 W.		-51243	Station Call Sheet
43	-38623	Resistor, 750,000 Ohms 1/4 W.		-50980	Celluloid Cover—Call Tab
44	-38918	Resistor, 500 Ohms 1/4 W.		-51196	Call Tab Holder
45	278-BL-5"U"	Speaker, Mfr. Spec. No. 5A-34		-19428	Screws—Holder Mounting
	-18679	Output Transformer		-29754	Ammeter Capacitor
	278-BL-5"B"	Speaker, Mfr. Spec. No. 55-WA-50		-51322	Instruction Booklet
	-47612	Output Transformer		MG3-51230	Instruction Envelope Assy.
46	-51220	Band Change Switch	G8-35954		Junction Block
	-51219	Bracket—B. S. Mounting	G179-34408		Shielded Switch Cable
	-51155	Power Transformer		-46447	Tube Shield
47	-50680	Shield—Power Transformer Can			
	-51198	Switch and Vol. Control—I Meg.			
48	MG23-51229	Push Button Unit Assy.			
	MG21-51169	Key Assembly			
	-50542	Toggle Lock Clip			
	-50639	No. 6—32 x 1" Screw—Station Setting			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
6D6	R-F Amplifier	6.0	220	100	0	5.7	—	—
6A7	Osc.-Mod.	6.0	220	100	0	5.7	130	-5 to -10
6B7	I-F Amp. & Diode Detector	6.0	220	100	0	6.8	—	—
76	1st A-F Amp.	6.0	130	—	0	8.0	—	—
41	(2) Output	6.0	210	—	0	18.0	—	—

Power Output Approximately 3 Watts.  
 Battery Drain Approximately 6.2 Amperes at 6 Volts.

1. Tuning I-F Amplifier To 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R.F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 14, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

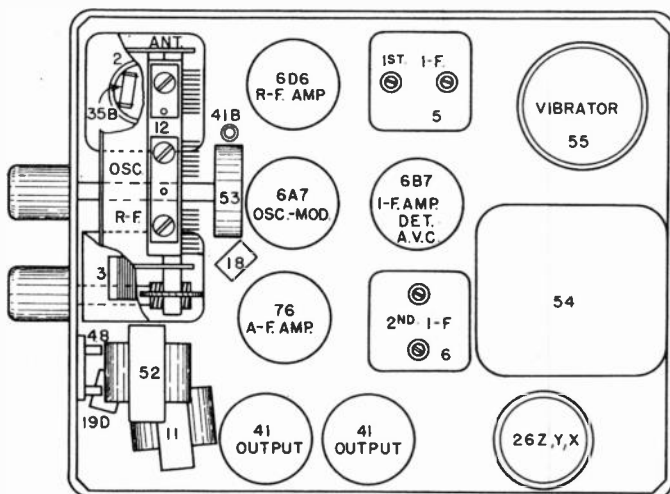


Fig. 2. Top View A-366

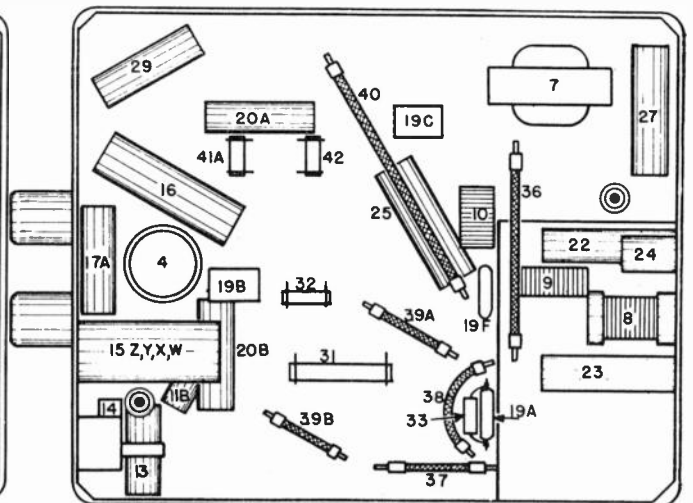
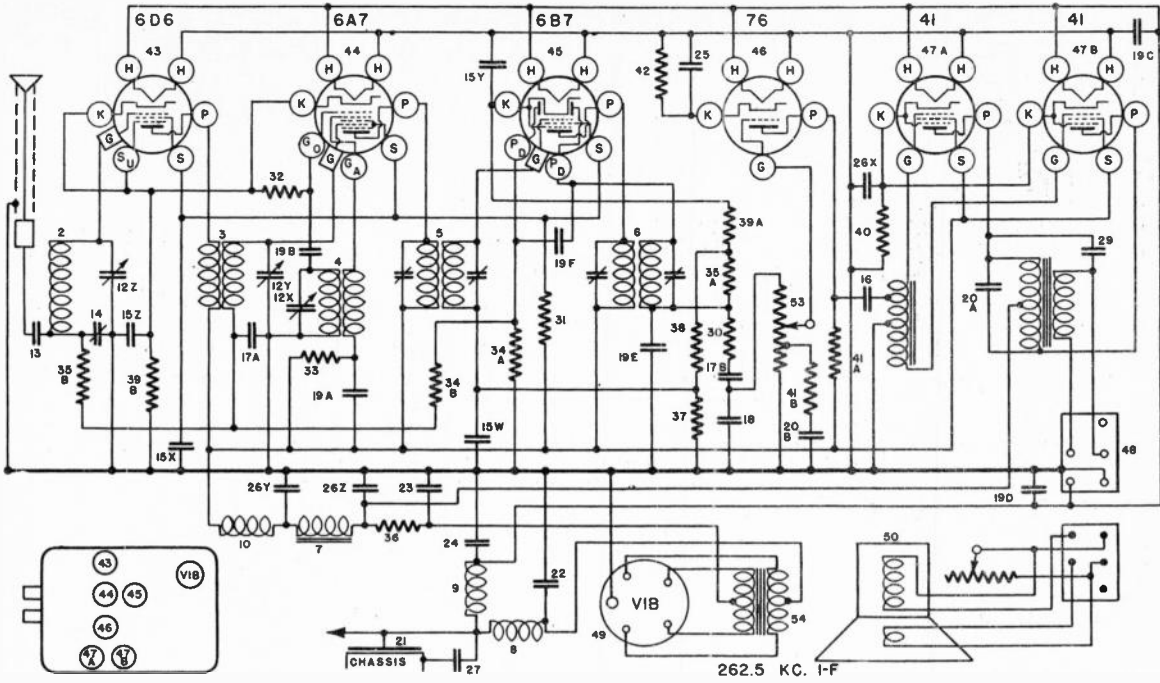


Fig. 3. Bottom View A-366

# MODEL A-366

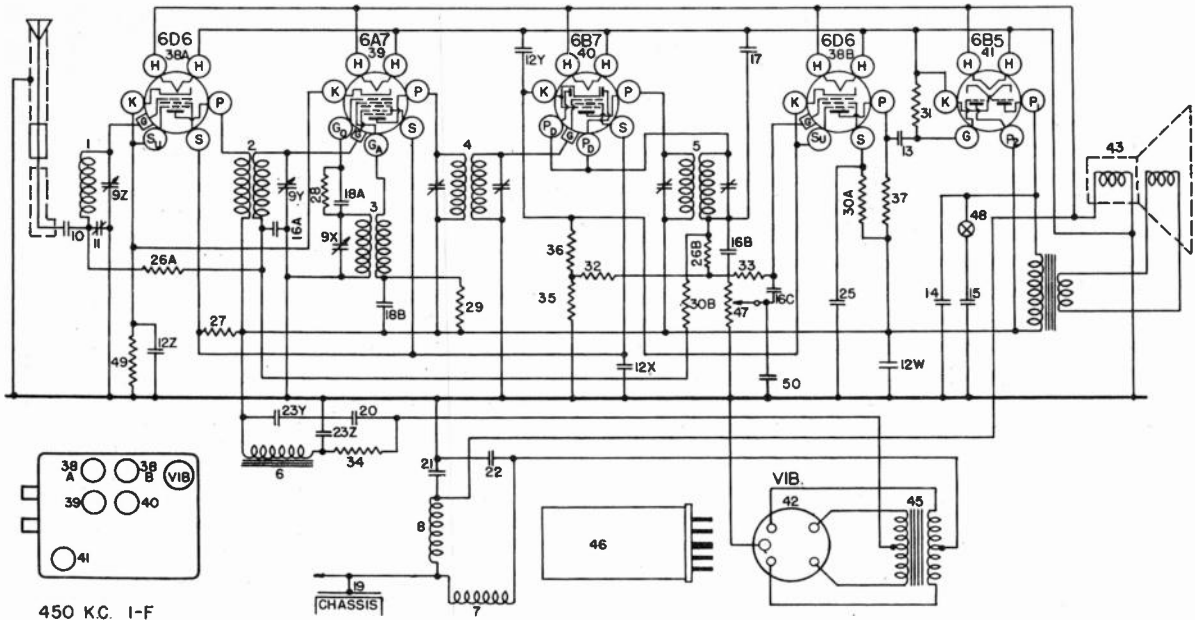


Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
2	G83 -32000	Ant. Coil	50		Speakers (See Below)
	W -38420	Ant. Coil Shield	51	NONE	
3	G20 -32001	R-F Coil	52	G51 -24E28	Output Transformer
4	G27 -32002	Osc. Coil	53	-38840	Volume Control (1 Meg.)
5	G16 -32005	1st I-F Assembly	54	G8 -32769	Power Transformer
6	G30 -32005	2nd I-F Assembly	55	G7 -38000	Vibrator
7	G31 -24628	"B" Filter Choke	W -38413		Vibrator Ground Clip
8	G15 -28067	"A" Filter Choke	W -35181A		Distributor Suppressor
9	G6 -32977	Motor Noise Choke	W -32956A		Suppressor Adapter
10	G5 -32977	R-F "B" Choke	W -29754C		Generator Condenser
11	G50 -24628	A-7 Grid Choke	W -32783A		Antenna Lead
12	G44 -33002	3 Section Var. Tuning Condenser	C -38407		Case
13	W -38367	Condenser .02 Mfd. 200 V.	C -38408		Top Cover
14	W -38350	Condenser, Ant. Compensating	MG2 -38798		Bottom Cover
15Z		.05 Mfd. 400 V.	W -32946		Cable Set Screw
15X	W -38419A	Condenser .1 Mfd. 200 V.	W -32947		Comp. Cond Hole Plug
15W		.05 Mfd. 400 V.	W -38412B		Oval Head Nut, Cover Mtg.
16	W -22688	Condenser .1 Mfd. 400 V.	W -32921		Cover Tie Bolt
17A	W -28621	Condenser .02 Mfd. 200 V.	W -32956		Mounting Stud
17B	W -28621	Condenser .02 Mfd. 200 V.	W -38455		Case Mtg. Spacer
18	G2 -34002	Condenser .0001 Mfd. (Molded)	W -32957		Lock Washer
19A			W -6213		Hex. Nut
19F	G1 -34002	Condenser .00025 Mfd. (Molded)			<b>Speaker Parts</b>
20A	W -25125	Condenser .003 Mfd. 400 V.	-424-G-6		Speaker Complete (under cowl)
20B	W -25435	Condenser .003 Mfd. 400 V.	-40311		Knob (Tone Control)
21	W -32904	Condenser, Riveted Plate to Chassis	-38824A		Tone Control (300,000 Ohm)
22	W -38433	Condenser .5 Mfd. 160 V.	-40148		Grille & Screen (424-G-6)
23	W -38431	Condenser .15 Mfd. 400 V.	-40461		Baffle Gasket (424-G-6)
24	W -37190	Condenser .02 Mfd. 160 V.	-40303		Speaker Unit only (424-G-6)
25	W -38430	Condenser 4. Mfd. 10 V. Electrolytic	-40304		Speaker Cone Assembly (424-G-6)
26Z		Condenser 8. Mfd. 350 V. Electrolytic	-40305		Speaker Field Coil (424-G-6)
26X	W -38427	Condenser 8. Mfd. 350 V. Electrolytic	-32974		Plug
26Y		Condenser 12. Mfd. 25 V.	-32975		Plug Cover
26V		Condenser .25 Mfd. 200 V.	-38847		Cable
27	W -25910A	Condenser .05 Mfd. 400 V.	-424-G-4		Speaker Complete (under cowl)
28	W -38488	Resistor 100,000 Ohm 1/4 W. Insulated	-40311		Knob (Switch)
29	W -35600	Resistor 30,000 Ohm 1/4 W. Insulated	-40551		Switch
30	W -36952	Resistor 60,000 Ohm 1/4 W. Insulated	-40555		Indicator Resistor
31	W -38433	Resistor 20,000 Ohm 1/4 W. Insulated	-32895		Indicator Socket
32	W -35700	Resistor 1 Megohm 1/4 W. Insulated	-40561		Choke
33	W -35602	Resistor 1 Megohm 1/4 W. Insulated	W -37849		Cable
34A	W -35601	Resistor 300,000 Ohm 1/4 W. Insulated	-40148		Grille & Screen (424-G-4)
34B	W -35601	Resistor 300,000 Ohm 1/4 W. Insulated	-40461		Baffle Gasket (424-G-4)
35A	W -32961	Resistor 100 Ohm 3 W. Flexible	-40562		Speaker Unit only (424-G-4)
35B	W -21452	Resistor 1100 Ohm 1/2 W. Flexible	-40301		Speaker Cone Assembly (424-G-4)
36	W -28589	Resistor 350 Ohm 1/2 W. Flexible	-40305		Speaker Field Coil (424-G-4)
37	W -30127	Resistor 450 Ohm 1/2 W. Flexible	-32974		Plug
38	W -30127	Resistor 450 Ohm 1/2 W. Flexible	-32975		Plug Cover
39A	W -26049	Resistor 450 Ohm 3 W. Flexible	-324-G-5		Speaker Assembly (Headline)
39B	W -36761	Resistor 40,000 Ohm 1/4 W. Insulated	W -35252A		"M" Spec. 1-D-398
40	W -36761	Resistor 40,000 Ohm 1/4 W. Insulated	-38852		Tone Control Knob
41A	W -38428	Resistor 4,500 Ohm 1/4 W. Insulated	W -38839		Speaker Unit (324-G-5)
41B	W -38428	Resistor 4,500 Ohm 1/4 W. Insulated	-40402		Speaker Cone Assembly (324-G-5)
42	C75 -28807	Socket Type 6D6	-40297		Speaker Field Coil (324-G-5)
43	C47 -28807	Socket Type 6A7	-324-G-6		Speaker Assembly (Header)
44	C48 -28807	Socket Type 6B7	W -41433		"M" Spec. 1-D-397
45	C48 -28807	Socket Type 6B7	W -40260		Grille & Screen (324-G-6)
46	C80 -28807	Socket Type 76	W -40257		Baffle Gasket (324-G-6)
47A	C22 -28807	Socket Type 41	W -35252A		Speaker Clamp (324-G-6)
47B	C22 -28807	Socket Type 41	W -38824A		Tone Control Knob
47C	W -32360A	Tube Shield Base	W -35280		Mtg. Bracket (324-G-6)
48	W -31212	Tube Shield Type 76 (Cut out)	-38820		Speaker Unit (324-G-6)
49	W -31213	Tube Shield Type 76 (Plain)	-40402		Speaker Cone Assembly (324-G-6)
	W -34174	Tube Shield Type 6D6 (Cut out)	-40297		Speaker Field Coil (324-G-6)
	W -34175	Tube Shield Type 6D6 (Plain)			
	W -31210	Tube Shield Ring			
	W -32895	Speaker Socket			
	W -32965A	Vibrator Socket			



MODELS A-455 A-555



450 KC. I-F

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G37-32000	Coil, Ant. Trans.	22	W-38433	.5 mf. 160 v. Cond.
2	G22-32001	Coil, R.F. Trans.	23Y,Z	W-38473-A	8 mf. 350 v. Cond.
3	G27-32002	Coil, Osc. Trans.	25	W-38488	.5 mf. 400 v. Cond.
4	G17-32005	Coil, 1st I.F. Trans.	50	G2-34002	.0001 mf. Cond.
5	G36-32005	Coil, 2nd I.F. Trans.	26	35600	100,000 ohm Type C Res.
6	G31-24628	Coil, "B" Filter Choke	27	36952	30,000 ohm Type A Res.
7	G9-28067	Coil, "A" Filter Choke	28	35928	60,000 ohm Type C Res.
8	G6-32977	Coil, Motor Noise Choke	29	36760	20,000 ohm Type C Res.
9Z	B-38923-F	Cond., Var. Ant. Sec.	30A,B	35602	1 meg. Type C Res.
9Y		Cond. Var. R.F. Sec.	31	36322	500,000 ohm Type C Res.
9X		Cond. Var. Osc. Sec.	32	35930	200,000 ohm Type C Res.
10	W-38493	.02 mf. 200 v. Cond.	33	35927	2 meg. Type C Res.
11	W-32926-A	Ant. Trim. Cond.	34	W-32961	100 ohm 3 w. Flex. Res.
12Z,Y	W-38914	.1 mf. 200 v. Cond.	35	30127	450 ohm 1/2 w. Flex. Res.
12X,W	W-38914	.05 mf. 400 v. Cond.	36	28589	350 ohm 1/2 w. Flex. Res.
13	W-38492	.05 mf. 400 v. Cond.	37	35929	150,000 ohm Type C Res.
14	W-23635	.006 mf. 400 v. Cond.	49	W-29585	600 ohm 1/2 w. Flex. Res.
15	W-23142	.02 mf. 400 v. Cond.	42	W-32965-A	Socket "Vib" 5 Prong
16	W-28621	.02 mf. 200 v. Conds.	43	325BJ	Speaker
17	G3-34002	.0005 mf. Cond.	45	G8-32769	Power Trans.
18	G1-34002	.00025 mf. Cond.	46	G7-38000	Vibrator Assy.
19	W-32904	20 mmf. Cond.	47	38425	Vol. Cont.
20	W-38431	.15 mf. 400 v. Cond.	48	W-35741	Tone Cont. Sw.
21	W-37190	.02 mf. 160 v. Cond.			

# MODEL A-459

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8	OSC.-MOD.	GND.	GND.	206	102	-4, 5	101	6	3
6SK7	I-F Amplifier	GND.	GND.	GND.	Grid	3	102	6	207
6SQ7	Det., A.V.C., 1st A-F	GND.	Grid	0	Diode	Diode	67	6	GND.
6K6GT	Output	GND.	GND.	230	213	Grid	210 J.B.	6	14
6X5GT	Rectifier	GND.	GND.	A.C.	—	A.C.	—	6	245

Maximum Power Output—approximately 3.6 watts.  
Normal "A" Drain—6.5 amperes.  
GND.—Ground. J.B.—Junction Block.

### 1. Aligning the I-F to 455 Kilocycles.

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid cap of the 6A8 oscillator-modulator (leaving the tube's grid connector in place). Care should be exercised to keep signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis. Fig. 3.

(d) Adjust both 1st I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis. Fig. 3.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

### 2. Aligning the R-F.

(a) The output lead from the signal generator should be connected through a .0001 mf. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

### 3. Setting the Push Buttons.

The push buttons are easily and accurately set from the front of the receiver.

To set push buttons, remove button by pulling straight out and the setting screw is easily accessible. Loosen the screws of the buttons to be set (two or three turns to the left).

By means of the manual tuning knob tune-in AS ACCURATELY AS POSSIBLE, the station for which the button is to be set. REMEMBER: the accuracy of the push buttons depends upon how accurate YOU tune-in the station when setting them.

With a small screw driver push the key all the way down. While holding the key down, securely tighten the setting screw. It is essential that you apply pressure while tightening the setting screw, in order to keep mechanism lined up with station tuned-in.

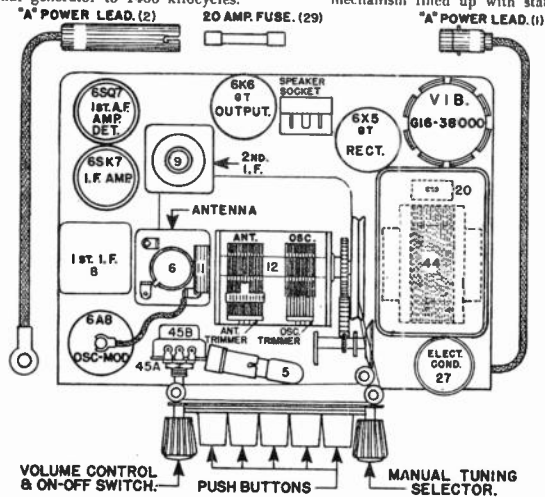


Fig. 2-A—Top View Model A-459

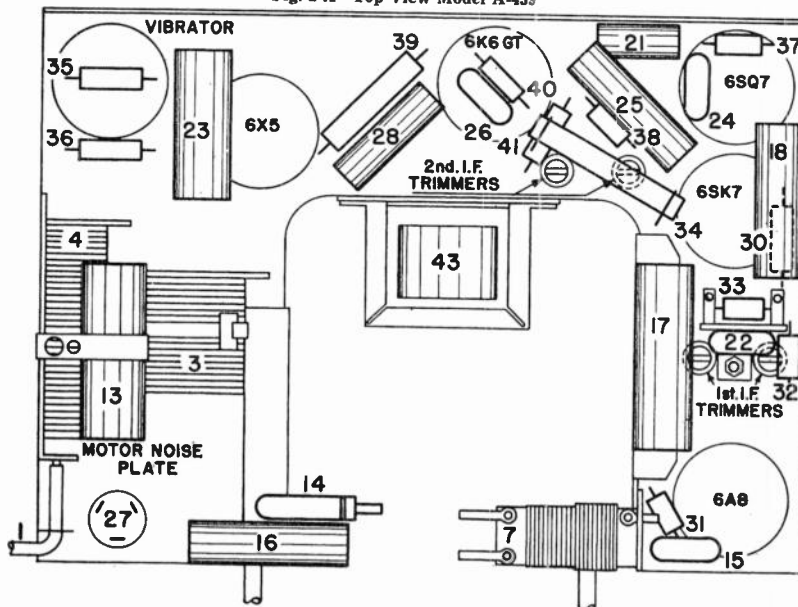
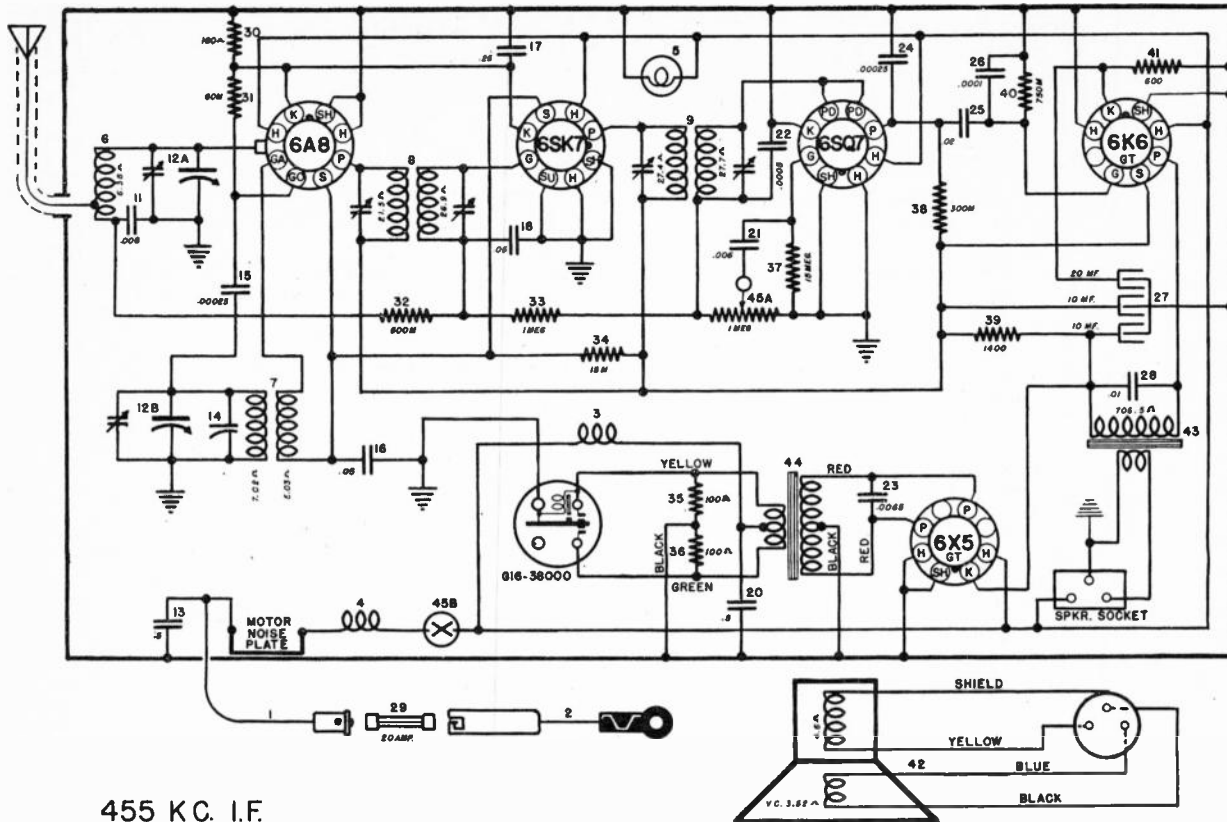


Fig. 3-A—Bottom View Model A-459

MODEL A-459



455 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G41-32750	"A" Lead Assy.—Set to Fuse		-50639	No. 6—32 x 1" Screw—Station Setting
2	G42-32750	"A" Lead Assy.—Fuse to Ammeter		-50590	Spring—P. B. Key Return
3	G35-28067	"A" Filter Choke		MG20-51169	Rocker Bar and Gear Assy.
4	G24-32977	Motor Noise Filter Choke		-51120	No. 6—40 x 1/2" Screw—Rocker Bar
5	-51245	Dial Lamp		-51517	Bearing
	MG31-51339	Bracket and Socket Assy.—Dial Light		-51522	Bronze Ground Spring (2" x 3/16")
6	G194-32000	Antenna Coil		MG19-51339	Push Button
7	G203-32002	Oscillator Coil		-51311	Dial Bracket Assy.—Riveted to P. B.
8	G231-32004	1st I-F. Assy.—455 Kc.			Unit
9	G234-32004	2nd I-F. Assy.—455 Kc.		-51311	Class Dial
10	None			-51302	Dial Mask (Dial Background)
11	-45810	Condenser, .006 Mf. 160 V.		-51290	R. H. Clip—Dial Mtg.
12	G82-33001	Condenser—Var. Tuning Gang		-51289	L. H. Clip—Dial Mtg.
13	-51524	Condenser, .5 Mf. 120 V.		-51330	Pointer—Dial Hand
14	-51140	Condenser—Temp. Comp. (Thermal)		G19-43564	Pulley and Hub Assy.—On Gang
15	G1-31002	Condenser, .00025 Mf. Mica		G33-41582	Drive Cord (19 1/2")
16	-32380	Condenser, .05 Mf. 200 V.		MG30-51339	Manual Pinion Shaft and Pulley Assy.
17	-34712	Condenser, .25 Mf. 160 V.		-51285	Manual Pinion Retainer
18	-32380	Condenser, .05 Mf. 200 V.		MG20-51339	Manual Shaft and Cone Assy.
19	None			-50630	Friction Drive Cone
20	-50682	Condenser, .5 Mf. 120 V.		-50590	Spring—Drive Cord Tension
21	-45810	Condenser, .006 Mf. 160 V.		-51254	Radio Case (Sides only) (FS-11 and
22	G3-34002	Condenser, .0005 Mf. Mica			FS-79)
23	-50203	Condenser, .0065 Mf. 1,000 V.		-51255	Top Cover—Case Lid (FS-11 and
24	G1-34002	Condenser, .00025 Mf. Mica		-51256	Bottom Cover—Case Bottom (FS-11
25	-28621	Condenser, .02 Mf. 200 V.			and FS-79)
26	G2-34002	Condenser, .0001 Mf. Mica		-51334	Shipping Carton
27	-51139	Condenser, 10-10-20 Mf. 350-350-25 V.		-20751	Generator Condenser
28	-23191	Condenser, .01 Mf. 400 V.		-38943	Distributor Suppressor
29	-50169	Fuse—20 Amp.		-35182	Adapter—For Distributor Suppressor
30	-50672	Resistor, 160 Ohms 1/2 W.		-51548	Hood Grounding Clip
31	-35928	Resistor, 60,000 Ohms 1/2 W.		-51542	Instructions—For Hood Gnd. Clip
32	-36322	Resistor, 500,000 Ohms 1/2 W.		K	Side Cover Mtg. Antenna
33	-35602	Resistor, 1 Megohm 1/2 W.		-94R	Drilling Template—K94R Instal.
34	-23616	Resistor, 15,000 Ohms 1 W.		-51305	Drilling Template—Radio Mtg.
35	-38919	Resistor, 100 Ohms 1/2 W.		-51345	1/2"—20 x 1/2" Screw—Radio Mtg.
36	-38919	Resistor, 100 Ohms 1/2 W.		-80417	1/2"—20 x 1/2" Screw—Radio Mtg.
37	-50671	Resistor, 15 Megohms 1/2 W.		-38205	1/4" Lockwasher—Radio Mtg.
38	-35601	Resistor, 300,000 Ohms 1/2 W.		-44417	No. 6—32 x 1/4" Dec. Hd. Screw—
39	-45388	Resistor, 1,100 Ohms 1 1/2 W.			Speaker Mtg.
40	-38623	Resistor, 750,000 Ohms 1/2 W.		-20800	Shakenroof Washer—Speaker Mtg.
41	-38918	Resistor, 100 Ohms 1/2 W.		O	Flat Washer—Speaker Mtg.
42	278-BT-3"U"	Speaker, Mfg. Spec. No. 5K-20		N	Nut (No. 6) Speaker Mtg.
	-48681	Field Coil		MG7-51340	Blue Adapter Panel Kit
	-48680	V. C. and Cone Assy.		MG8-51340	Gray Adapter Panel Kit
	-45585	Cardboard Ring—Cone Mtg.		-51346	Gasket—Dial Window
	-17133	Socket—Speaker		-51312	Instrument Panel Gasket (2)
	MG4-51340	Speaker, Screen, Etc. Assy.		C	No. 6—32 x 3/8" Screws—Adapter
	-51517	Dust Cloth—Speaker			Panel Mtg. (FS-13)
	-51341	Screen—Speaker Opening		-51252	Call Letter Holder
	-51318	Speaker Cable		-19128	No. 4—36 x 1/4" Screws—Holder Mtg.
	-51320	Output Transformer		-50879	Call Letter Sheets
43	-51331	Power Transformer		-50880	Celluloid Tab Cover
44	-50680	Shield—P. T. Can		-51309	Knob
	-51313	Switch and Volume Control (1 Meg.)		-4523	No. 8—32 x 3/8" Set Screw—Knob
	-51108	Socket—8 Prong—No Marking		-51336	Instruction Booklet
	G105-28807	Socket—4 Prong—Vibrator		MG3-51340	Instruction Envelope Assy.
	-50123	Ground Clip—Vibrator		MG2-51340	Miscellaneous Mtg. Parts Pkg.
	-46447	Tube Shield			
	G16-38000	Vibrator			
	-51796	Speaker—Plug—No Shell			
	MG23-51339	Push Button Unit—No Gang			
	MG22-51169	Riveted P. B. Key Assy.			
	-50542	Key Clip—Lock Clamp			

MODEL A-559 (ROAMIO)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8GT	Oscillator-Modulator	6.0	100	75	—	2.4	75	—
6SK7	I-F Amplifier	6.0	100	—	—	9	—	—
6SQ7	Diode Detector & A-F Amp.	6.0	45	—	—	0	—	—
6Y6GT	Output	6.0	105	100	—	5.6	—	—
6X5	Rectifier	6.0	—	—	—	120	—	—

Power Output approximately 4 Watts.  
 Battery Drain approximately 6.6 Amperes at 6 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6Y6GT Output tube. Be sure the meter is protected from D. C. by connecting a condenser .1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger, condenser to the top cap of the 6A8GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmer condensers for maximum output. Fig. 3.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION AL-

WAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

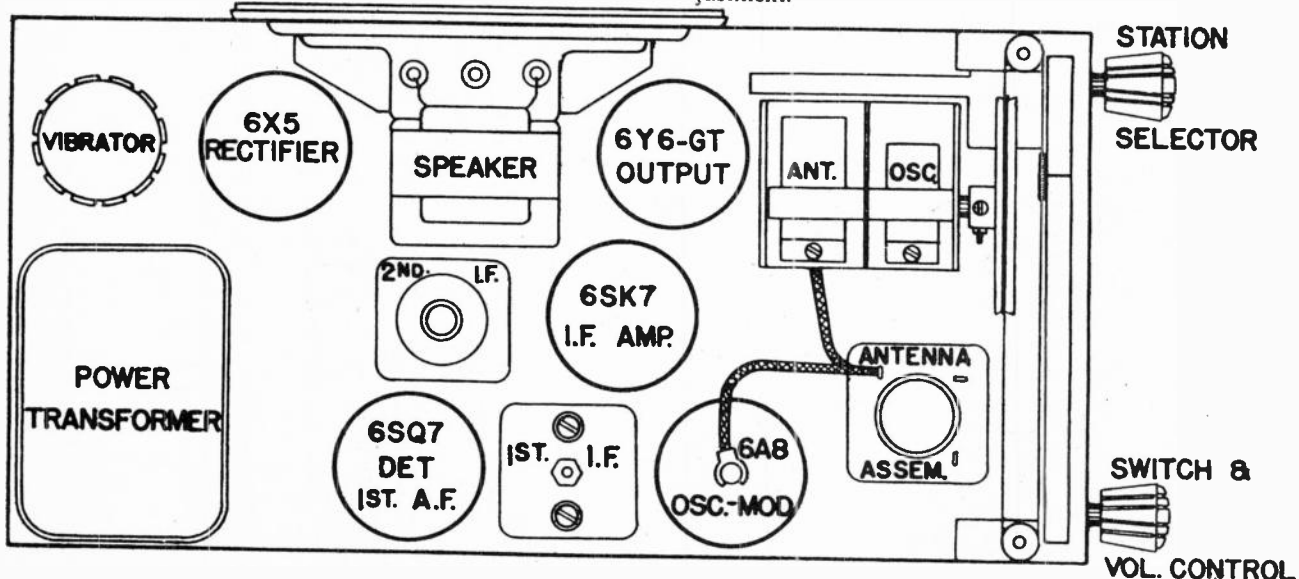
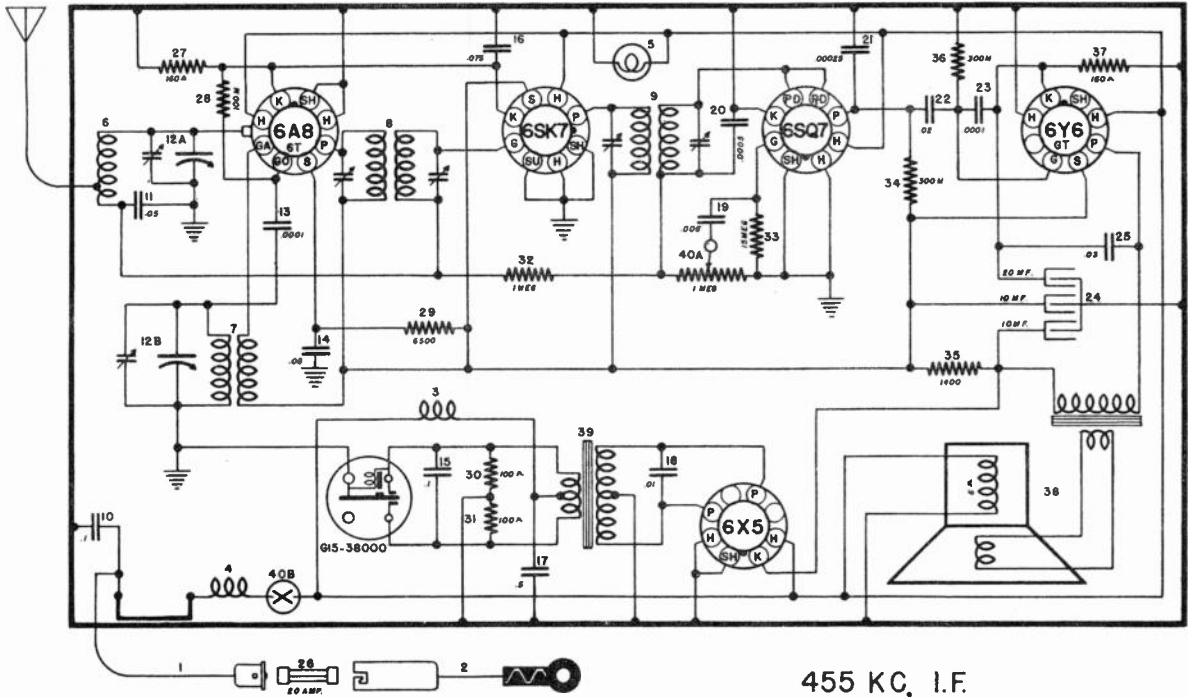


Fig. 2—Top View Model A-559

MODEL A-559



455 KC. I.F.  
MODEL - A559

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G34-32750	"A" Lead Assy.—Set to Fuse	26	-50169	Fuse—20 Amp.
2	G37-32750	"A" Lead Assy.—Fuse to Ammeter	27	-50672	Resistor, 160 Ohms 1/2 W. W.
3	G34-28067	"A" Filter Choke	28	-35600	Resistor, 100,000 Ohms 1/2 W.
4	G25-32977	Motor Noise Filter Choke	29	-35934	Resistor, 6,500 Ohms 1/2 W.
5	-43567	Dial Lamp—6-8 Volt	30	-38915	Resistor, 100 Ohms 1/2 W. W.
6	G194-32000	Antenna Coil	31	-38915	Resistor, 100 Ohms 1/2 W. W.
7	G200-32002	Oscillator Coil	32	-35602	Resistor, 1 Megohm 1/4 W.
8	G224-32004	1st I-F. Assy.—455 Kc.	33	-50671	Resistor, 15 Megohms 1/2 W.
9	G225-32004	2nd I-F. Assy.—455 Kc.	34	-35601	Resistor, 300,000 Ohms 1/2 W.
10	-50105	Condenser, .1 Mf. 160 V.	35	-45388	Resistor, 1,400 Ohms 1/2 W. W.
11	-45817	Condenser, .05 Mf. 160 V.	36	-35601	Resistor, 300,000 Ohms 1/2 W.
12	G81-33001	2 Section Var. Tuning Condenser	37	-50672	Resistor, 160 Ohms 1/2 W. W.
	-51269	Dial Glass	38	293-BL-7"U"	Speaker—Mfg. Spec. No. 5A25
	-51268	Mask—Dial Background	39	-48173	Output Transformer
	MG11-31258	Bracket—Dial Mtg. Riveted to Chassis	40	-51267	Power Transformer
	-50560	R. H. Clip—Dial Glass Mtg.		-50680	Shield—P. T. Can.
	-50545	L. H. Clip—Dial Glass Mtg.		-50526	Switch and Vol. Control (1 Meg.)
	B-78	Screw—Dial Clip Mtg.		G15-38000	Vibrator
	-2045	Shakeproof Washer—Dial Clip Mtg.		-50123	Ground Clip—Vibrator
	-30589	Felt—For Dial Window		MG2-51259	Case Assy.
	-43564	Pulley and Hub Assy.		-50505	Knob
	-50518	Pointer—Dial Hand		-38935	Wedge—For Cover
	G13-41582	Drive Cord (30 Inch)		-51275	Shipping Carton
	-50512	Drive Shaft		-38038	Distributor Suppressor
	-50511	Bracket—Drive Shaft Mtg.		-29754	Generator Condenser
	-43549	"C" Washer—Shaft Retaining		-50167	Strap—Set Rear Mtg.
	-50607	Spring—Drive Cord Tension		No. 10 x 3/4" P. K. Screw—Set Mtg.	
13	C2-34002	Condenser, .001 Mf. Mica		-25846	Hex Nut—1/4"-20
14	-45817	Condenser, .05 Mf. 160 V.		-6213	1/4"-20 x 1 1/2" Sq. Hd. Screw
15	-50105	Condenser, .1 Mf. 160 V.		-35065	1/4" Lockwasher
16	-51310	Condenser, .075 Mf. 160 V.		-38205	Antenna Connector Cable
17	-50682	Condenser, .5 Mf. 120 V.		-32783	Model "A" Fords Mounting Kit
18	-50185	Condenser, .01 Mf. 650 V.		MG83-50147	Motor Noise Condenser (Fuse Con-
19	-45810	Condenser, .006 Mf. 160 V.		-50395	connector Lead)
20	G3-34002	Condenser, .0005 Mf. Mica		MG2-51260	Mounting Kit Assy.
21	G1-34002	Condenser, .0025 Mf. Mica		G173-34403	Volume Control Cable
22	-45780	Condenser, .02 Mf. 160 V.		-51277	Instruction Book
23	G2-34002	Condenser, .0001 Mf. Elect.			
24	-51278	Condenser, 10-10-20 Mf. Elect.			
25	-50075	Condenser, .03 Mf. 160 V.			

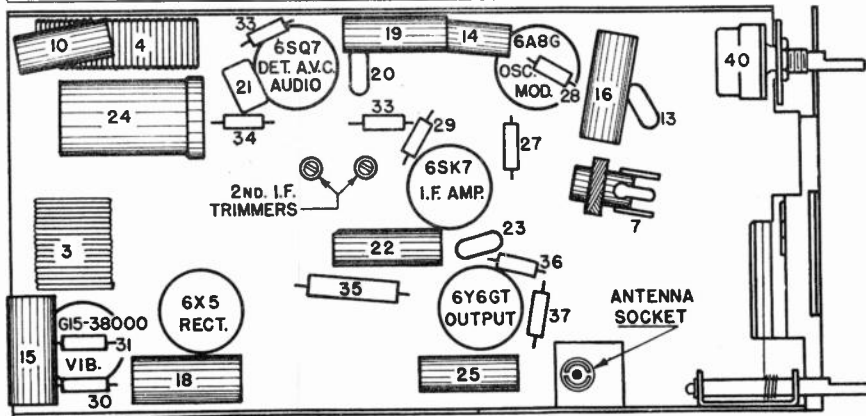


Fig. 3—Bottom View Model A-559

# MODEL F-157

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Co
6A8-G	Oscillator-Modulator	6.1	220	90	—	0	90	0
6U7-G	I-F Amplifier	6.1	220	90	0	0	—	0
6Q7-G	Diode Detector & A-F Amp.	6.1	110	—	—	0	—	—
6K6-G	Output	6.1	200	220	—	0	—	—
OZ4	Rectifier	0	—	—	—	220	—	—

Power Output approximately 5 Watts.  
Battery Drain approximately 2.6 Amperes at 12 Volts.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

### CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series without one of the leads.

### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. Fig 2.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

### 2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 9, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

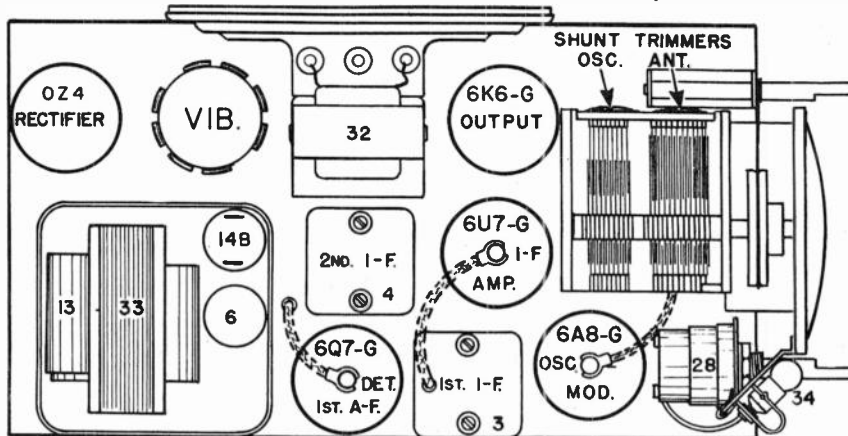


Fig. 2. Top View F-157

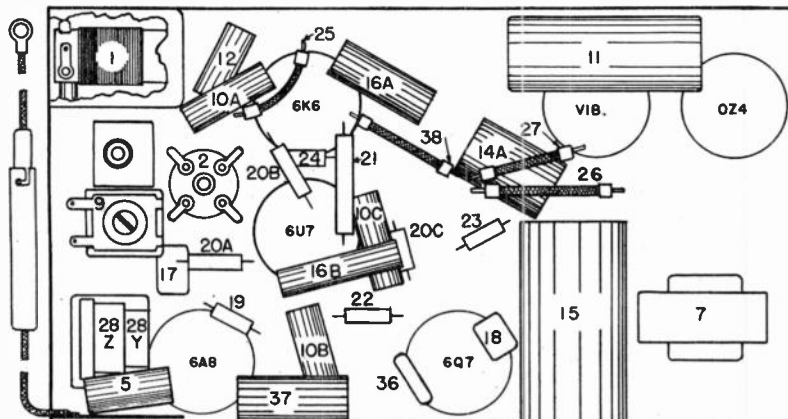
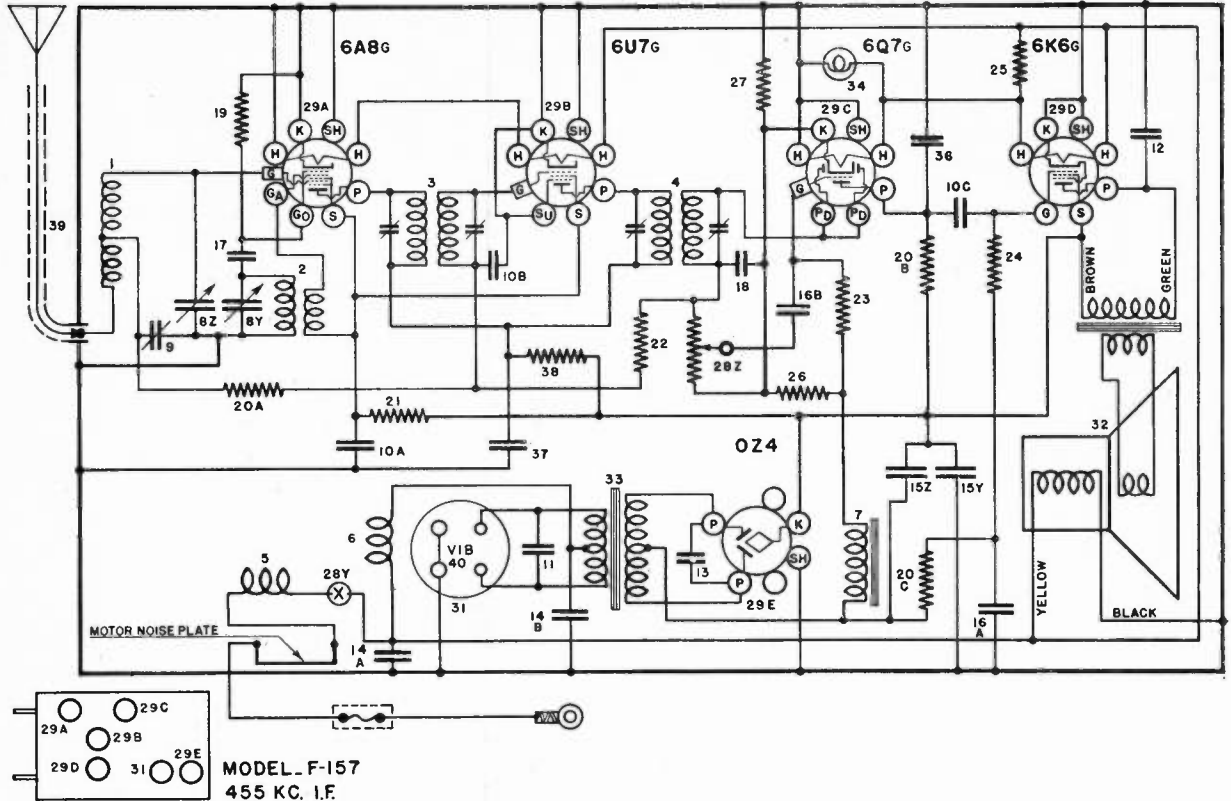


Fig. 3. Bottom View F-157

MODEL F-157



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G137-32000	Ant. Coil	32	W -31210	Tube Shield Ring (1)
2	G142-32002	Osc. Coil		276-BL-7"U"	Speaker—Mfg. Spec. No. 5-B-108
3	G149-32004	1st I-F. (455 Kc.)		-45377	V. C. and Cone Assy.
4	G148-32004	2nd I-F. (455 Kc.)		-44063	Output Transformer
5	G20 -32977	Motor Noise Choke Coil		-43585	Cardboard Ring Cone Mtg.
6	G21 -28067	Choke "A" Filter	33	G20 -32769	Power Transformer
7	G16 -29535	Choke "B" Filter	W -50130		Power Transformer Can
8	G36 -33001	Var. Tuning Condenser (2 Section)	W -43567		Dial Light Bulb, 6-8 V.
9	-38998A	Ant. Compensating Condenser (200-600 Mmf.)	G6 -34002		Condenser, .00025 Mf. 200 V. Molded
10A	W -32380	Condenser, .05 Mf. 200 V. Tub.	W -32780B		Condenser, .05 Mf. 400 V. Tub.
10B	W -32380	Condenser, .05 Mf. 200 V. Tub.	W -22514		Resistor, 750 Ohm 1/2 W. Flex.
10C	W -32380	Condenser, .05 Mf. 200 V. Tub.	37		Ant. Lead
11	W -30321A	Condenser, 1 Mf. 160 V. Tub.	38		Vibrator (12 Volt)
12	W -23191A	Condenser, .01 Mf. 400 V. Tub.	39		Dial (Glass) Face
13	W -50203	Condenser, .0065 Mf. 1,000 V. Tub. (Oil)	40		Mask—Dial
14A	W -50161	Condenser, .5 Mf. 120 V. Tub.		W -50133	Ring—Dial Glass Support
14B	W -50161	Condenser, .5 Mf. 120 V. Tub.		W -50135A	Bracket—Dial Mtg.
15Z	W -50160	Condenser, 4 Mf. 350 V. Elect.		W -50136A	Pointer
15Y	W -50160	Condenser, 4 Mf. 350 V. Elect.		W -40486	Screw—Pointer Mtg.
16A	W -50105	Condenser, .1 Mf. 160 V. Tub.		W -50175	Drive Shaft
16B	W -50105	Condenser, .1 Mf. 160 V. Tub.		W -43549	Ring—Shaft Retaining
17	G1 -34002	Condenser, .00025 Mf. 200 V. Molded		W -41582	Drive Cord (11 Inches)
18	G3 -31407	Condenser, .0005 Mf. 200 V. Molded		W -43561	Tension Spring—Drive Cord
19	-35928	Resistor, 60,000 Ohm 1/2 W. Ins.		G3 -43564	Pulley and Hub Assy.
20A	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.		D -50118B	Case
20B	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.		C -50119	Case Front
20C	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.		W -35678A	Grille Cloth
21	-37377	Resistor, 20,000 Ohm 1 W. Ins.		W -50164	Knob (2)
22	-35602	Resistor, 1 Megohm 1/2 W. Ins.		G25 -32750	"A" Power Lead—Set to Fuse
23	-35927	Resistor, 2 Megohm 1/2 W. Ins.		G27 -32750	"A" Power Lead—Fuse to Ammeter
24	-36322	Resistor, 500,000 Ohm 1/2 W. Ins.		W -32757	Fuse, 12 Amp
25	W -27504	Resistor, 100 Ohm 1/2 W. Flex.		W -32776	Fuse Insulator
26	W -23012A	Resistor, 40 Ohm 1/2 W. Flex.		W -38038D	Distributor Suppressor
27	W -24537	Resistor, 60 Ohm 1/2 W. Flex.		W -29754C	Generator Condenser
28Z	-50042	Volume Control (1 Meg.)		W -50167	Mtg. Strap
28Y	-50042	On-Off Switch		W -6213	Nut—Strap Mtg.
29	G178-36400	Socket, 8 Prong		W -35065	Screw—Strap Mtg.
30	G105-28807	Socket Vibrator		W -38205	Lock Washer—Strap Mtg.
31	W -50123A	Ground Clip (Vib.)		W -25846	P. K. Self Tapping Screw
	W -50176	Tube Shield Half (2)			

# MODEL 4A1

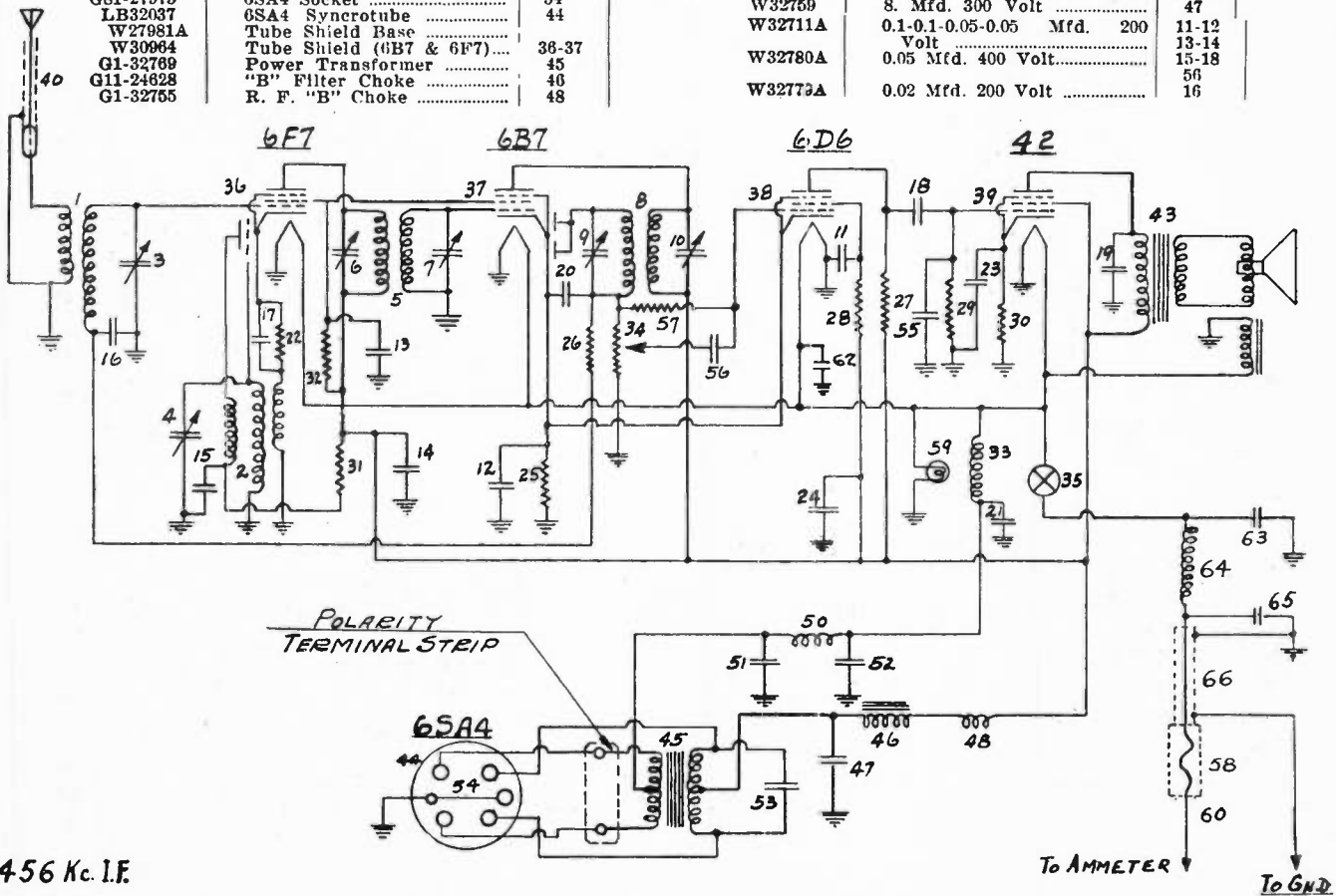
## Alignment Procedure . . .

Connect the high side of the output of the modulated oscillator, which has been adjusted to 456 Kc. to the control grid connection on the top of the 6F7 tube through an .02 mfd. series condenser. The low side of the oscillator is to be connected to the receiver chassis. Set the output of the oscillator to a convenient level and adjust the I. F. transformer condensers for maximum signal output. To make this adjustment it is necessary that a standard 5/16" (across flat) hexagon socket wrench be used for the upper condenser, and a small screw driver fitting inside of the nut hole for adjustment of the lower condenser. Always make this I. F. adjustment very carefully and

go over the adjustment several times to be sure that the peak has been reached. To align a receiver at broadcast radio frequency, it is necessary that an adjustable oscillator having frequencies of 1400 and 600 Kc. together with a suitable attenuator and dummy antenna be available. Set the oscillator at 1400 Kc. and connect the high side of the oscillator to the receiver antenna terminal through a .0002 mfd. (dummy antenna) condenser. Turn the tuning control of the receiver to 140 on the dial. Now adjust the oscillator shunt trimmer which is located on the front section of the gang condenser until the signal is heard best. Without changing the gang condenser setting, adjust the antenna trimmer located

on the rear section of the gang condenser. It is necessary that these adjustments be gone over several times until no further improvements can be made. Always work with the weakest possible signal from the modulated oscillator for best accuracy. Now rotate the dial until it reads 60 and set the modulated oscillator at approximately 600 Kc. The approximate sensitivity of the receiver may be checked here and it is possible that by slight bending of the gang condenser plates some improvement may be made. It is very essential, however, that this bending of plates be done with extreme care and by someone who is experienced in this operation.

G9-32000	Antenna Coil	1	G6-28067	R. F. "A" Choke	50
G8-32002	Osc. Coil		G4-28067	"A" Choke	33
W32728	Washer (Ant. Coil Shield Base)		B32783	Antenna Lead	40
W30802	Coil Shield (Ant.)		G1-25891	Antenna Wire	
W30028	Retaining Ring (Ant.)		G5-31701	"A" Cable Assem.	60
W25200	Coil Socket (Osc.)		G7-31701	"A" Lead Assem. & Choke Assem.	61
W25025A	Coil Shield (Osc.)		W32757	12 Amp. Fuse	58
W26891	Insulating Washer (Osc.)		W21452	1100 Ohms	22
W21541B	Retaining Ring (Osc.)		W28589	350 Ohms	25
L32898	Variable tuning Cond. Gang	3-4	21454	1 Megohm	26-57
G7-32004	1st I. F. Trans. Coil and Tuning Condensers	5-6-7	21875	100000 Ohms	27
G8-32004	2nd I. F. Trans. Coil and Tuning Condensers	8-9-10	23785	500000 Ohms	28-29
W32712B	Level Control and Power Switch	34-35	W25521	450 Ohms	30
W32739A	Level Control Bracket		32331	55000 Ohms (1/2 Watt)	31-32
G49-27975	6F7 Socket	36	W32781A	0.1 Mfd. 200 Volt	17-62
G48-27975	6B7 Socket	37	W32782A	0.01 Mfd. 400 Volt	19
G75-27975	6D6 Socket	38	W32741	0.0005 Mfd. (Mica)	20-21
G25-27975	42 Socket	39	W30306	0.5 Mfd. 160 Volt	55
G81-27975	6SA4 Socket	54	W32702	0.005 Mfd. 1000 Volt	53
LB32037	6SA4 Sycrotube	44	W30410A	8-8. Mfd. 25 Volt-250 Volt	23-24
W27981A	Tube Shield Base		W32759	8. Mfd. 300 Volt	47
W30964	Tube Shield (6B7 & 6F7)	36-37	W32711A	0.1-0.1-0.05-0.05 Mfd. 200 Volt	11-12
G1-32789	Power Transformer	45	W32780A	0.05 Mfd. 400 Volt	13-14
G11-24628	"B" Filter Choke	46	W32779A	0.02 Mfd. 200 Volt	15-18
G1-32755	R. F. "B" Choke	48			56
					16



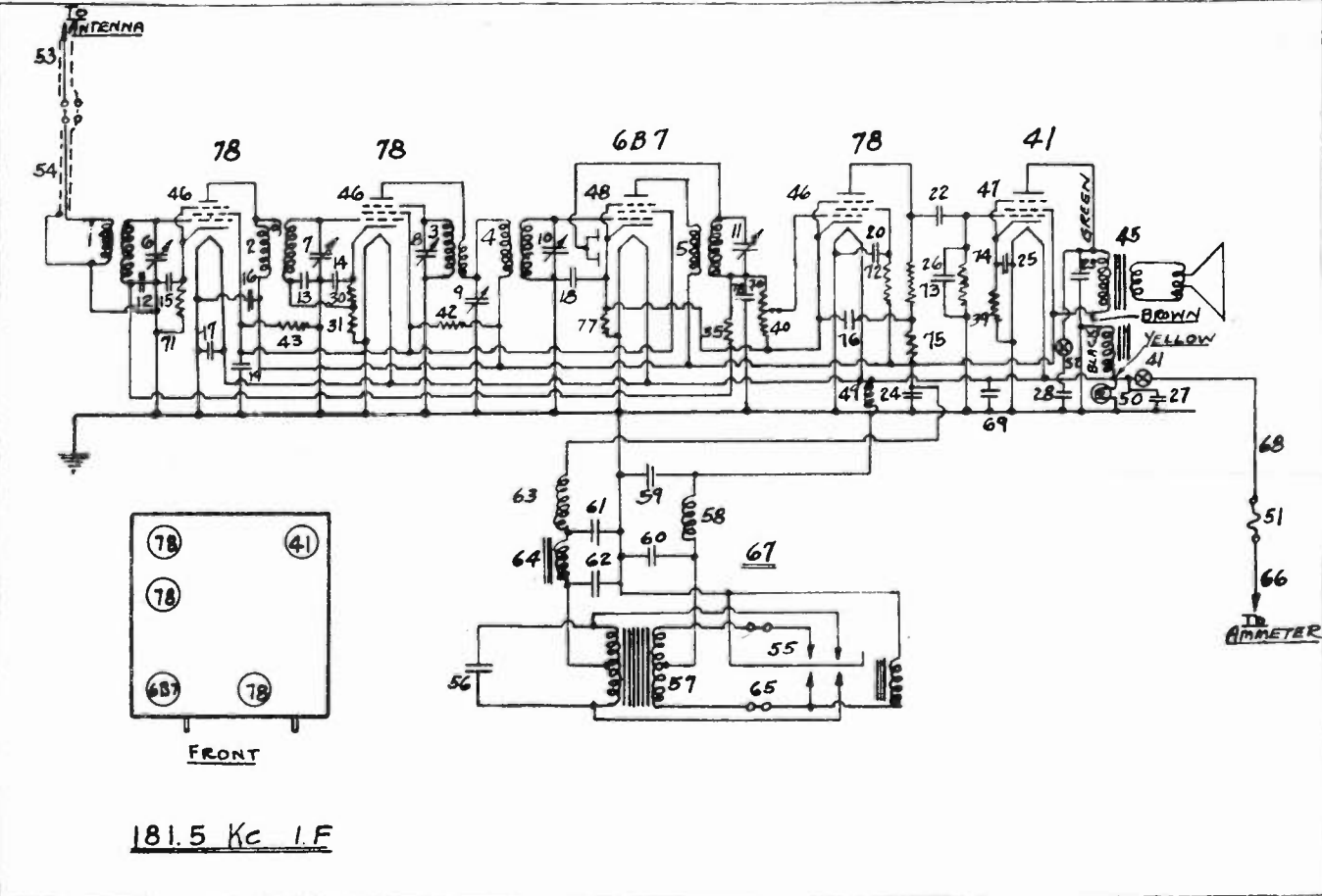
456 Kc. I.F.

To AMMETER

To GND



1	G2-24995	ANTENNA COIL
2	G7-25968	R.F. COIL
3	G2-24996	OSCILLATOR COIL
4	G1-25444	1ST I.F. COIL
5	G3-25445	2ND I.F. COIL
6	L-29783	ANT. TUNING COND.
7	L-29783	R.F. TUNING COND.
8	L-29783	OSC. TUNING COND.
9	G2-25948	I.F. PRI. TUNING COND.
10	W-25008-A	I.F. SEC. TUNING COND.
11	G2-25948	DIODE TRANS. TUN. COND.
12	W-27203	0-02 MFD. 200V
13	W-27203	0-02 MFD. 200V
14	W-27203	0-02 MFD. 200V
15	W-27203	0-02 MFD. 200V
16	W-23615	0-05 MFD. 400V
17	W-24049-A	0-1 MFD. 200V
18	W-24049-A	0-1 MFD. 200V
19	W-25438	0-1 MFD. 200V
20	W-25438	0-1 MFD. 200V
21	W-23142	0-02 MFD. 400V
22	W-23191-A	0-01 MFD. 400V
23	W-30419-A	8 MFD. 250V
24	W-30419-A	8 MFD. 250V
25	W-20389	.00005 (MICA)
26	W-20389	.00005 (MICA)
27	W-23191-A	0-01 MFD. 400V
28	W-23191-A	0-01 MFD. 400V
29	W-30127	450 Ω
30	W-27086	6400 Ω
31	W-25937	275 Ω
32	W-28157	75 Ω
33	21454	1-MEG
34	21454	1-MEG
35	21454	1-MEG
36		
37		
38		
39	W-23907	750 Ω
40	W-30436	LEVEL CONTROL
41	W-30436	S.P.S.T. SWITCH
42	W-26525-B	1500 Ω
43	W-26525-B	25000 Ω
44		
45		
46	353-3	SPEAKER
47	339-28807	7A SOCKET
48	328-28807	4I SOCKET
49	348-28807	6BT SOCKET
50	G4-28067	"A" CHOKE
51	W-4099A	6V DIAL LIGHT
52	W-31103	10 AMP "A" FUSE
53	W-26156-A	S.P.S.T. SWITCH
54	D-31296-A	ANTENNA LEAD
55	W-31702	ANTENNA LEAD CONNECTOR
56	L-29160	VIBRATOR ASSEM.
57	W-31632	0-01 MFD. 1000V
58	G1-31618	POWER TRANS.
59	G2-28067	"A" CHOKE
60	W-30366	0-5 MFD. 160V
61	W-30366	0-5 MFD. 160V
62	W-23142	0-02 MFD. 400V
63	W-31631-B	12 MFD. 300V



63	G1-24234	R.F. CHOKE ASSEM.	79
64	G10-24628	FILTER CHOKE ASSEM.	80
65	G1L-26719	POWER TRANSFORMER	81
66	G1-31701	"A" CABLE ASSEM.	82
67	L-31629	413 SYNCHRONODE	83
68	G2-31701	"A" CABLE ASSEM.	84
69	W-20389	.0005 MFD (MICA)	85
70			86
71	W-21452	1100 Ω	87
72	21454	1 MEG OHM	88
73	23403	150,000 Ω	89
74	23785	500,000 Ω	90
75	R1237-A	60,000 Ω	91
76	W-23615	.05 MFD 400 Volts	92
77	W-28889	250 Ω	93
78	W-32607	.0005 MFD 200V.	94

**CROSLEY**  
Twice Tested  
SERVICE PARTS

## MODEL 5A3—ROAMIO

### TUBE VOLTAGES—MODEL 5A3

Type	Where Used	Ef	Ep	Eg	Ec	Esg	Eosc	E Sup-G
78	R. A. Amp	6.0	230	0-30	5.0	100	—	5.0
6F7	Osc.-Mod.	6.0	230	0-30	8.0	100	55	—
6B7	I. F. Amp. Diode Det. A. V. C.	6.0	230	0	3.0	100	—	—
78	Audio Amp.	6.0	60	0-30	3.0	25	—	3.0
42	Output	6.0	220	0	16.0	230	—	—

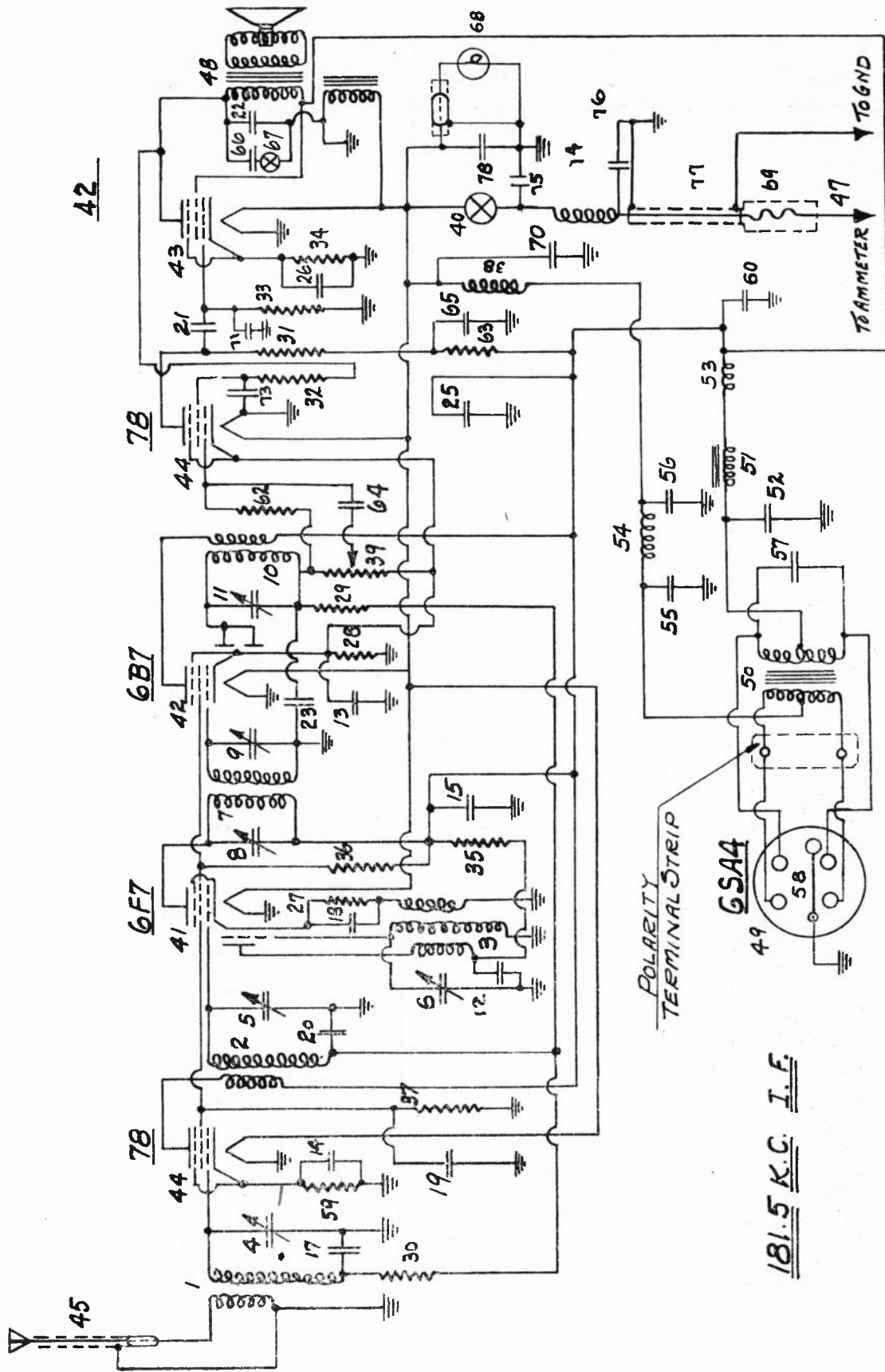
VOLTAGES MEASURED TO CHASSIS WITH A 500 VOLT 1000 OHMS PER VOLT VOLTMETER. 6 VOLT BATTERY USED.

VOLTAGE LIMITS PLUS OR MINUS 10%.

### PARTS LIST—MODEL 5A3

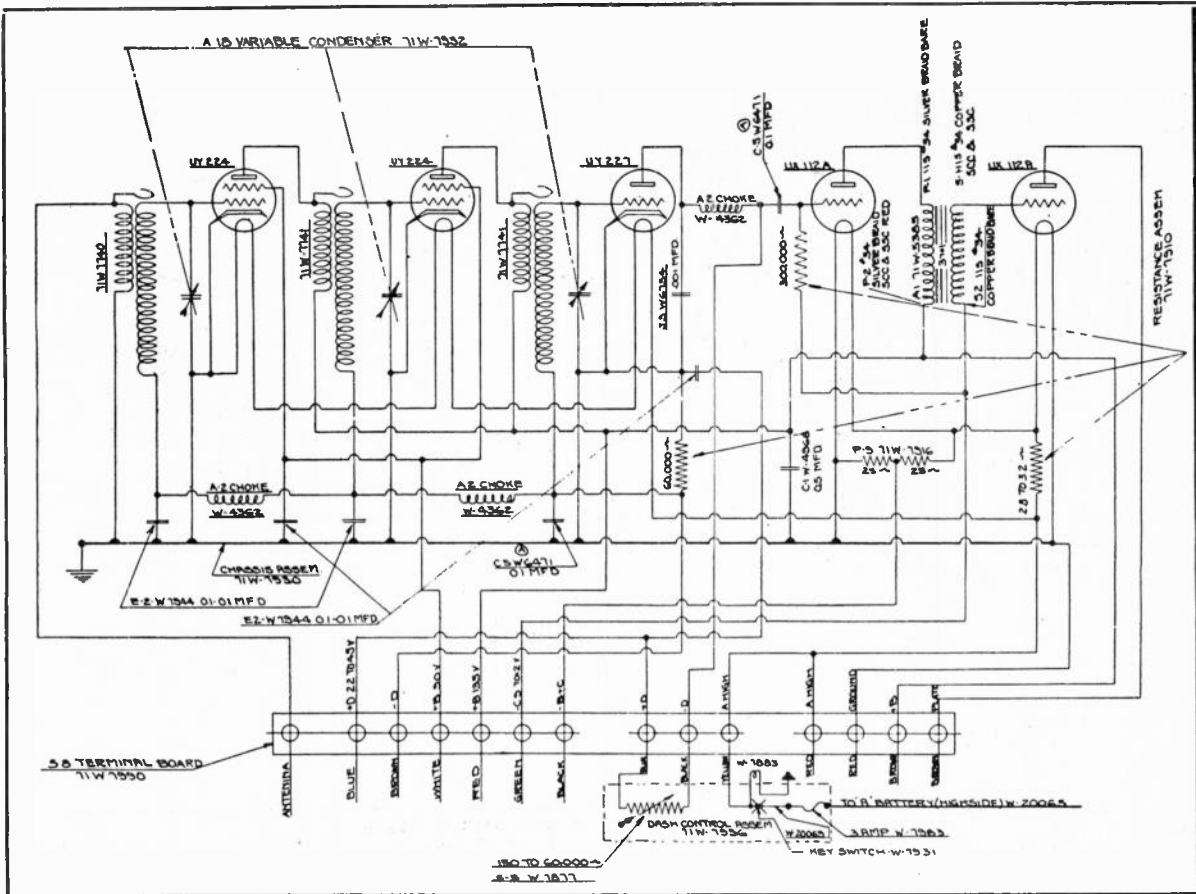
Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G19—32000	Antenna Coil	48	W —31102	Fuse Carrier
	W —30802A	Coil Shield	49	LE —33B	Speaker
	W —30026A	Retaining Shield	50	G1 —32037	6 SA 4 Syncrotube
2	G11—32001	R. F. Coil	51	G1 —32769	Power Transformer
	W —30802A	Coil Shield	52	G11—24628	"B" Filter Choke
	W —30877	Insulating Washer	53	W —32759	8. Mfd. 300 Volt Condenser
	W —30026A	Retaining Ring	54	G1 —32755	R. F. "B" Choke
3	G14—32002	Osc. Coil	55	G6 —28067	R. F. "A" Choke
	W —25025B	Coil Shield	56	W —30366	0.5 Mfd. 160 Volt Condenser
	W —26891	Insulating Washer	57	W —30366	0.5 Mfd. 160 Volt Condenser
	W —21541C	Retaining Ring	58	W —32762	0.005 Mfd. 1,000 Volt Condenser
4			59	G81—27975	6 SA 4 Socket
5	G2 —33002	Tuning Cond. Gang	60	W —21452	1,100 Ohm Resistor
6			61	W —30741	0.00025 Mfd. (Mica) Condenser
7			62	W —21454	1 Megohm Resistor
8	G6 —32003	1st. I. F. Trans.	63	W —21237A	60,000 Ohm ¼ Watt Resistor
9		1st. I. F. Prim. Tuning Cond.	64	W —32780B	0.05 Mfd. 400 Volt Condenser
10		1st. I. F. Sec. Tuning Cond.	65	W —32780B	0.05 Mfd. 400 Volt Condenser
11	G7 —32003	2nd. I. F. Trans.	66	W —32782B	0.01 Mfd. 400 Volt Condenser
12		2nd. I. F. Sec. Tuning Cond.	67	W —26156A	S. P. S. T. Switch (Tone Control)
13		0.05 Mfd. 400 Volt	68		Dial Light
14		0.1 Mfd. 200 Volt	69	W —32757	12 Amp. Fuse
15		0.1 Mfd. 200 Volt	70	W —32741A	0.0005 Mfd. (Mica) Condenser
16		0.05 Mfd. 400 Volt	71	W —32741A	0.0005 Mfd. (Mica) Condenser
17	Deleted		72	Deleted See 74	
18	W —32779B	0.02 Mfd. 200 Volt Condenser	73	W —24784	0.25 Mfd. 200 Volt Condenser
19	W —32781B	0.1 Mfd. 200 Volt Condenser	74		"A" Choke
20	W —32780B	0.05 Mfd. 400 Volt Condenser	75	G8 —31701	.00025 Mfd. Condenser
21	W —32779B	0.02 Mfd. 200 Volt Condenser	76		.00025 Mfd. Condenser
22	W —32780B	0.05 Mfd. 400 Volt Condenser	77		"A" Lead
23	W —23635	0.006 Mfd. 400 Volt Condenser	78	W —30741	.00025 Mfd. (Mica) Condenser
24	W —32741A	0.0005 Mfd. (Mica) Condenser		B —32783	Antenna Cable
25	Deleted See 78			W —29754C	0.5 Mfd. Condenser (Eliminator)
26	W —32802	8. Mfd. 300 Volt Condenser		L —32810	Remote Control Assembly Complete
27	W —21452	8. Mfd. 20 Volt Condenser		B —30372B	Housing
28	W —28589	1,100 Ohms Resistor		G2 —31538	Cover Assm.
29	—21454	350 Ohms Resistor		W —30370	Dial Glass only
30	—21875	1 Megohm ¼ Watt Resistor		B —32812	Dial
31	—23403	100,000 Ohms Resistor		W —30371A	Dial Hand
32	—23403	150,000 Ohms Resistor		G1 —30295	Gear Assm.
33	—21454	1 Megohm Resistor		G5 —23472	Knob (Tuning)
34	—23875	500,000 Ohm Resistor		G1 —28036	Knob (Key)
35	W —25521	450 Ohm Resistor		G7 —25868	Drive Shaft 15" (V. C.)
36	—32331	55,000 Ohm ¼ Watt Resistor		G21—25868	Drive Shaft 15" (Tuner)
37	W —26525B	15,000 Ohm Resistor		G8 —25868	Drive Shaft 30" (V. C.)
38	G4 —28067	25,000 Ohm Resistor		G20—25868	Drive Shaft 30" (Tuner)
39	W —30436A	R. F. "A" Choke		W —26315	4 x ¼ Dog Pt. S. P. Set Screw (4 used)
40		Level Control		W —28029B	Steering Column Bracket
41	G49—27975	Switch		G1 —28035	Strap Assm.
42	G48—27975	6-F-7 Socket		R —186	4 x ¼ R. H. Machine Screw (black) (1 used)
	W —27981A	6-B-7 Socket		W —20802	No. 10 Shakeproof Washer (black) (4 used)
	W —30964	Tube Shield Base		R —181	No. 10 x ¼ R. H. Machine Screw (black) (3 used)
43	G25—27975	Tube Shield		C —141	4 x 1 ¼ Fr. Hd. Machine Screw (2 used)
44	G39—27975	42 Socket		W —31539	No. 2-56 x ¼ R. H. Machine Screw (1 used)
45	L —35108	78 Socket		G17—26317	Dial Light Bracket Assm.
46	G1 —32750	Antenna Body and Sleeve Assm.		G8 —32750	Dial Light Lead Assm.
47	Deleted See 77	Antenna Lead Assm.			
	G5 —31701	"A" Cable Assm.			



CIRCUIT DIAGRAM—MODEL 5A3

# MODEL 90



Filament Voltages	
R. F. and Detector Tubes.....	2.0
A. F. Tubes.....	4.7
Plate Voltages	
All Tubes but Detector.....	135
Detector Tube.....	22½
Control Grid Voltages	
R. F. Tubes.....	2.5
Detector Tube.....	3.0
A. F. Tubes.....	12.0
Screen Grid Voltages	
R. F. Tubes.....	90

1	C-7913	Chassis
3	W-7873	Socket (5 prong)
3	W-7874	Socket Guides
2	W-7871	Socket (4 prong)
2	W-7872	Socket Guides
1	W-5385	A. F. Transformer
1	W-5654	Gromet 1"
1	W-20054	R. F. Transformer
2	W-20055	R. F. Transformer
3	B-7922	R. F. Shields
3	W-7704	Gromets
2	B-20098	Interstage Tube shields
1	W-7090	Terminal board assembly
1	W-7916	Fixed resistance (25 -25 ohms)
1	W-7910	3 ohm resistance strip
1	W-4923	80,000 ohm resistor (blue)
1	W-6704	300,000 ohm resistor (yellow)
2	W-3547	I. spacer
2	W-2478	S spacer
3	W-4362	Plate chokes
3	W-5129	Spacer
2	W-6471	.1 mfd. fixed condenser
2	W-5804	Spacer

1	W-0754	.001 mfd. fixed condenser (Aerovox)
1	W-4968	.5 mfd. fixed condenser
2	W-7944	.1 - .1 mfd. fixed condenser
1	B-7928	Escutcheon
2	W-7919	Knobs
1	W-7931	Key Switch
1	W-20057	Key Switch Insulator Sleeve
1	W-7877	Volume Control
1	W-7958	Pinion shaft
1	W-7907	Pinion
1	W-5596	8-32 x 7-32 Cup Point Set Screw
1	W-7926	Dial & Gear
1	W-7912	Dial Bushing
1	W-7914	Escutcheon Screw 6-32 x 1-2 Hex. Hd.
2	W-5495	Washer
1	W-4907	Spring
1	W-7959	Mounting Plate
2	W-7880	Clamps
1	W-7946	Fuse Panel Assembly
2	W-4476	Spacers
1	W-7983	Fuse
1	W-7882	Dial Light Receptacle
1	W-7963	Dash Control Cable Assem.
1	B-7966-A	Cable Only
1	W-7987	Terminal Strip
1	W-4751	Cable Clamp
2	W-7997	Universal Joint Assembly
1	W-7941	Drive shaft
1	W-7998	Adapter shaft
1	B-7898	Battery box
1	B-7897	Battery box cover
1	W-7960	Battery cable
1	B-7951-A	Cable only
1	W-7952	Terminal strip
1	W-20008	Box Cable
3	W-20058	Box Sleeve Clamp
1	W-20117	Ferrule
1	W-20059	Box Sleeve fitting
1	W-20094	B battery fuse unit
1	W-7949	Antenna connectors

### SPEAKER ASSEMBLY

1	C-7834	Unit Holder
1	W-20047	Type C Dynacore motor assembly

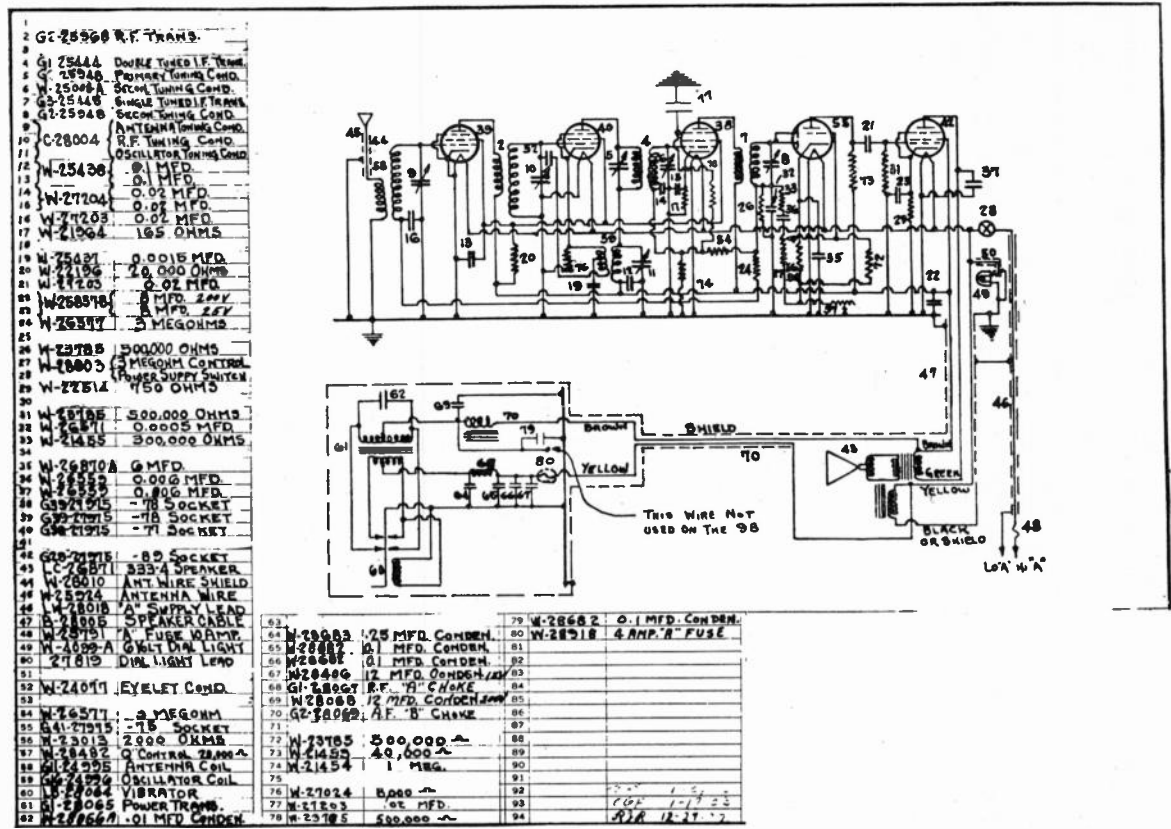




# MODEL 98

Tube	Position	Plate	Voltages			Fil.
			Screen Grid	Cathode	Supp. Grid	
-78	R. F. Amplifier	180	85	0	0	6.0
-77	Oscillating detector	180	85	4.5	4.5	6.0
-78	I. F. Amplifier	180	85	2.0	0	6.0
-76	Diode—A. F. Amplifier	130		1.5		6.0
-89	Output (Class A Pentode)	180	180	17.0	17.0	6.0

"A" battery drain—4.6 amp. at 6.3 volts.



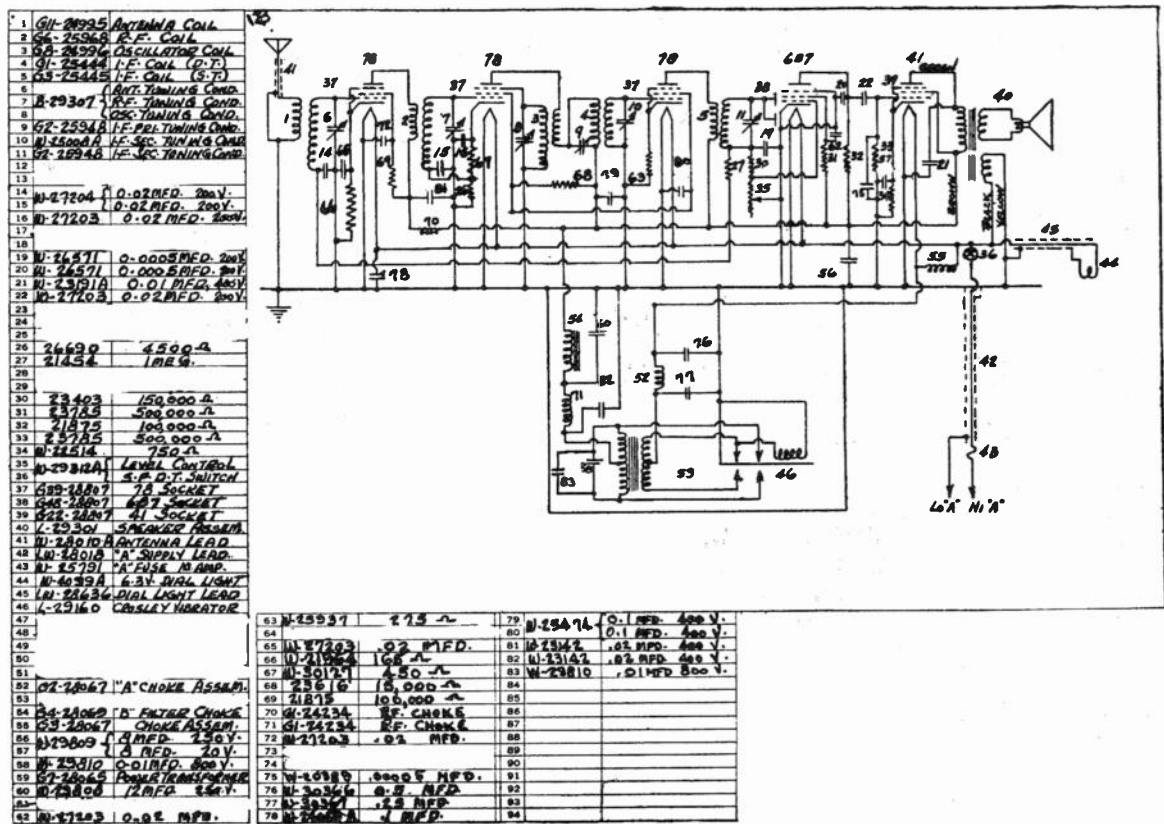




# MODEL 102

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	R. F. Amplifier	206	108	2.0	2.0	6.3
78	Oscillator Modulator	206	108	28.0	0	6.3
78	I. F. Amplifier	206	108	3.0	3.0	6.3
6B7	Detector and A. F. Amplifier	37	26	0		6.3
41	Output	198	206	16.0		6.3

Voltage limits should be plus or minus 15% of values given.



# MODEL 103

## Specifications

Model 103 is a five tube superheterodyne designed for operation from a six volt automobile storage battery. The "B" voltage is furnished by a Crosley Synchronode. The intermediate frequency used is 181.5 kc.

## Tubes and Voltage Limits

The following are the tubes and voltages measured with the receiver in operating condition but with no signal to the antenna, and with a battery voltage of 6.3 volts. All voltages are measured from tube contact to chassis with a 300 volt D. C. voltmeter (1000 ohms per volt).

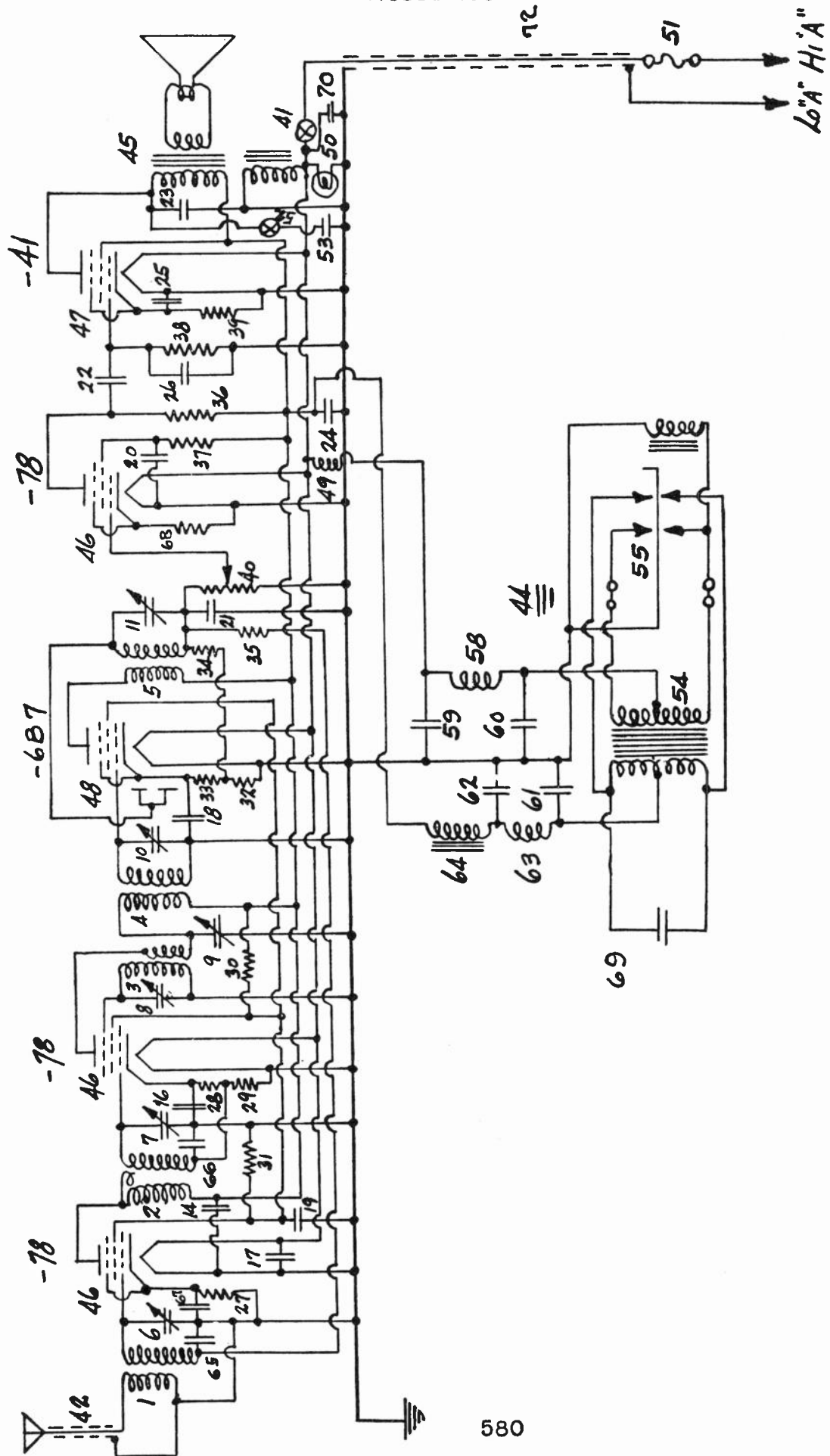
Tube	Position	Plate	Screen Grid	Cathode	Supp. Grid	Filament
78	R. F. Amplifier	210	100	2	2	6.3
78	Oscillator Modulator	210	100	28	0	6.3
6B7	I. F. Amplifier and Diode Detector	210	100	2.5		6.3
78	Audio Amplifier	50	20	2.0	2	6.3
41	Output	195	210	16.0		6.3

Voltage limits are plus or minus 15% of values given.

## PARTS LIST—MODEL 103

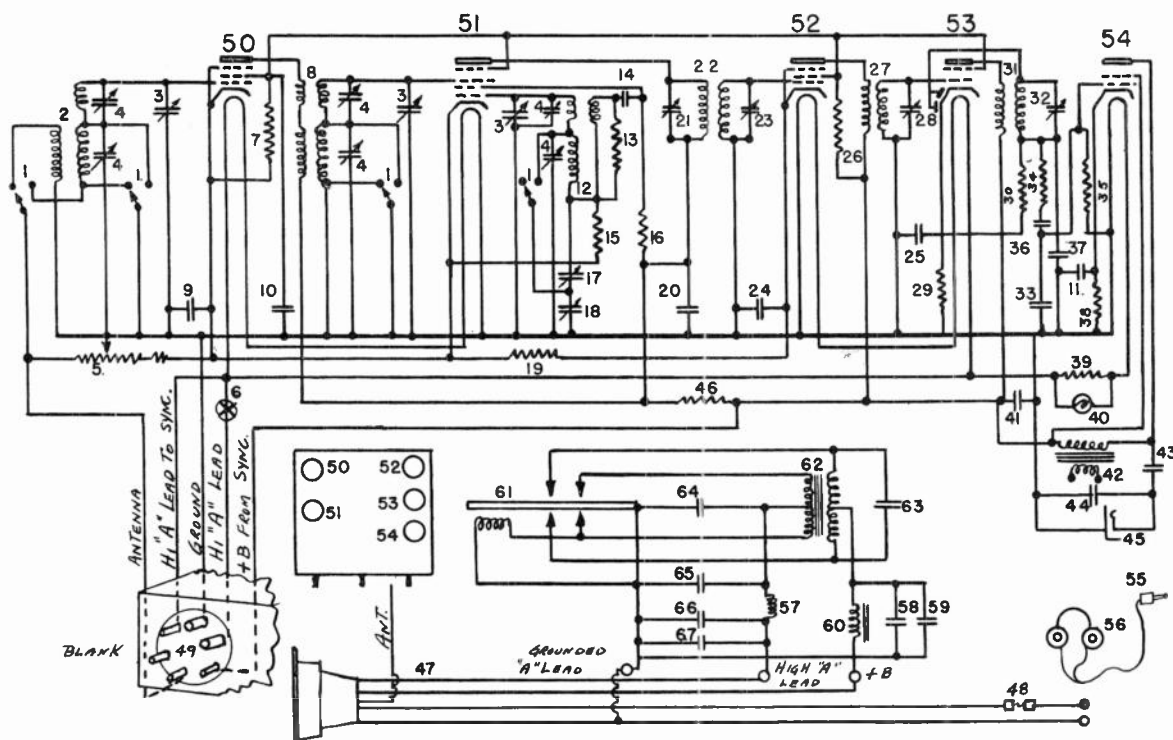
INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used if article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
<b>RECEIVER CHASSIS</b>							
1	G48-28807	Seven Prong Socket 6B7....	48	1	W-30367	MODEL 409 SYNCHRONODE	
1	G22-28807	Six Prong Socket 41.....	47	1	W-30366	Condenser .25 Mfd.....	60
3	G39-28807	Six Prong Socket 78.....	46	1	W-23142	Condenser .5 Mfd.....	59
1	W-27981	Tube Shield Base.....		1	W-30984	Condenser .02 Mfd. (400 v.)	61
1	W-27328	Tube Shield.....		4	W-29314	Condenser .02 Mfd. (800 v.)	69
1	G21-24995	Antenna Coil.....	1			Rubber Sleeve (to Mount Sync.) .....	
1	G25-24990	Oscillator Coil.....	3	1	W-20264	Terminal Board.....	
1	G7-25968	Radio Frequency Coll.....	2			MODEL 353-3C SPEAKER	45
1	G1-25444	I. F. Transformer (1st).....	4	1	G2-29529	Cone Assembly.....	
1	G3-25445	I. F. Transformer (2nd).....	5	1	W-29777	Field Coil.....	
4	W-25200	Coil Socket.....		1	G4-24628	Transformer Assembly.....	
3	W-25024	Coil Shield (Large).....				MISCELLANEOUS	
1	W-25025	Coil Shield (Small).....		1	L-30452	Receiver Case.....	
1	G1-29551	Coil Shield Assembly.....		1	C-30450	Cover .....	
1	W-29263	Coil Bracket.....		1	C-30451	Bottom .....	
5	W-24360	Insulating Washer.....		1	L-28034	Remote Control.....	
5	W-21541B	Coil Retaining Ring.....		1	W-28102A	Clamp Spring.....	
1	L-29783	Variable Condenser Gang.....	6, 7, 8	8	W-20070	Suppressor (Spark Plug)..	
1	G1-29302	Coupling Assembly.....		1	W-20071	Suppressor (Dist. Head)..	
1	W-30436	Volume Control & Switch..	40, 41	3	W-29754	Elim. Condenser.....	
2	G2-25948	I. F. Trimmer Condenser..	9, 11	1	W-25784	Tennaflex .....	
1	W-25008	I. F. Condenser Blade.....	10	1	W-29323	Mounting Bolt.....	
1	W-25584	Mica .....		1	W-29324	Mounting Washer.....	
1	R-80	Screw .....		1	7961	Mntg. Shakeproof Washer	
1	W-28069B	Adjusting Nut.....		1	W-29325	Mounting Nut.....	
1	W-24865	Washer .....		2	W-30739	No. 8x½ P. K. Screw	
1	W-25450B	Insulating Washer.....				(Top & Bottom).....	
1	W-25007B	Insulating Washer.....		4	W-30739	No. 8x½ P. K. Screw	
1	W-25446	Bakelite Washer.....				(Chassis to case).....	
1	O-4	Flat Washer.....		30	W-31050	No. 8x¼ P. K. Screw	
1	M-20	Rivet .....				(Case) .....	
1	G4-28067	"A" Choke.....	49	4	W-31070	6-32x½ Screw (Speaker)...	
2	21454	Resistor 1 megohm.....	34, 35	4	W-24074	Elastic Stop Nut (Speaker)	
1	23785	Resistor 500,000 ohm.....	37	4	O-6	Flat Washer (Speaker)...	
1	21875	Resistor 100,000 ohm.....	36	3	W-20800	Shakeproof Washer (Spr.)	
2	22514	Resistor 750 ohm.....	39, 68	1	W-4562	Solder Lug (Speaker).....	
1	W-30127	Resistor 450 ohm.....	28	1	G1-25891	Antenna Wire.....	
1	W-21237	Resistor 60,000 ohm.....	31	1	W-28010	Antenna Wire Shield.....	42
1	W-25357	Resistor 75 ohm.....	33	1	W-31100	"A" Cable & Fuse Assen.	72
1	W-21455	Resistor 300,000 ohm.....	38	1	W-31102	Fuse Carrier only.....	
1	31094	Resistor 4,500 ohm.....	71	1	W-20106	Fuse Carrier Cap.....	
2	W-21964	Resistor 165 ohm.....	27, 32	1	W-20110	Spring .....	
1	23616	Resistor 15,000 ohm.....	30	2	W-20107	Washer .....	
1	W-28571	Condenser .005 Mfd.....	21	1	W-31103	10 Ampere Fuse.....	
1	W-23142	Condenser .02 Mfd.....	22	66"	W-31101	Wire .....	
1	W-30419	Condenser 8-8 Mfd.....	24, 25	1	W-31076	Lug .....	
1	W-23635	Condenser .06 Mfd.....	23	1	W-26156A	Switch .....	52
2	W-20389	Condenser .00005 Mfd.....	26, 70	1	W-23191	Condenser .01 Mfd.....	53
1	W-23615	Condenser .05 Mfd.....	14	1	W-29298	Grill Cloth .....	
1	W-26438	Condenser .1-1 Mfd.....	19, 20	1	B-29309	Mounting Plate .....	
2	W-24049A	Condenser .1 Mfd.....	17, 18			REMOTE CONTROL	
4	W-27203	Condenser .02 Mfd.....	16, 65	1	G8-25868	Drive Shaft Assem. (V. C.)	
			66, 67	1	G9-25868	Drive Shaft Assem. (Dial)	
1	L-30424	COVER	44	1	G1-28035	Strap Assembly .....	
1	C-30455	Chassis .....		1	W-28029B	Column Bracket .....	
1	L-26160	Vibrator Assembly.....	55	1	G4-26317	Bracket Assem. ....	
1	G2-28067	"A" Choke Assembly.....	58	1	W-29316A	Gear Dial .....	
1	G7-28065	Power Transformer.....	54	1	W-4907	Spring Washer .....	
1	G1-24234	R. F. Choke Assembly.....	63	1	G5-23472	Knob .....	
1	G7-28069	Filter Choke.....	64	1	G1-28036	Key Knob .....	
1	W-29808	Condenser 12 Mfd.....	62	1	E-26307D	Housing .....	
				1	W-28025C	Cover .....	



MODEL 103 WIRING DIAGRAM

MODEL 992

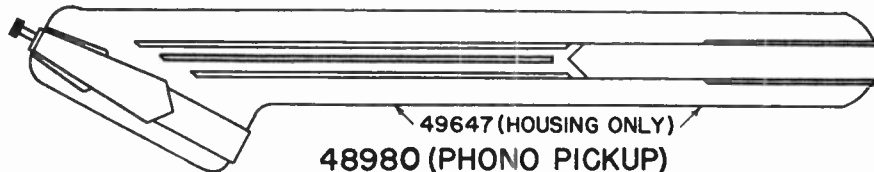
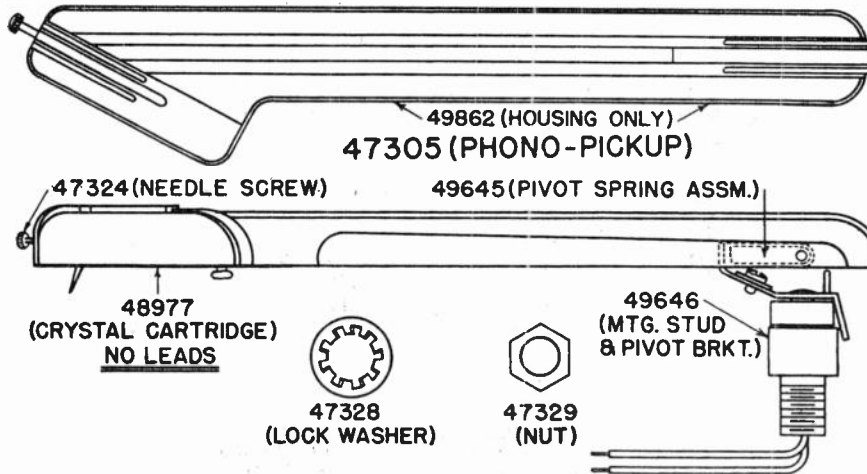
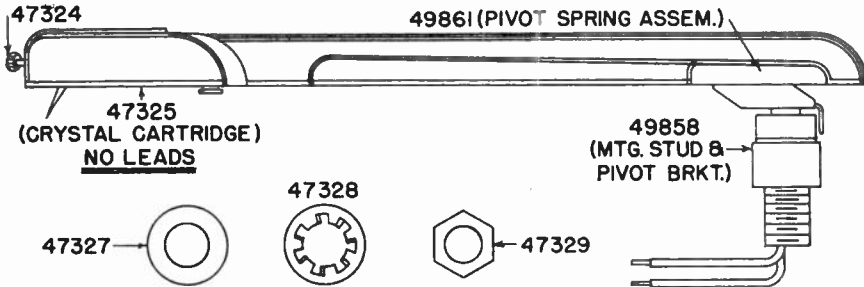
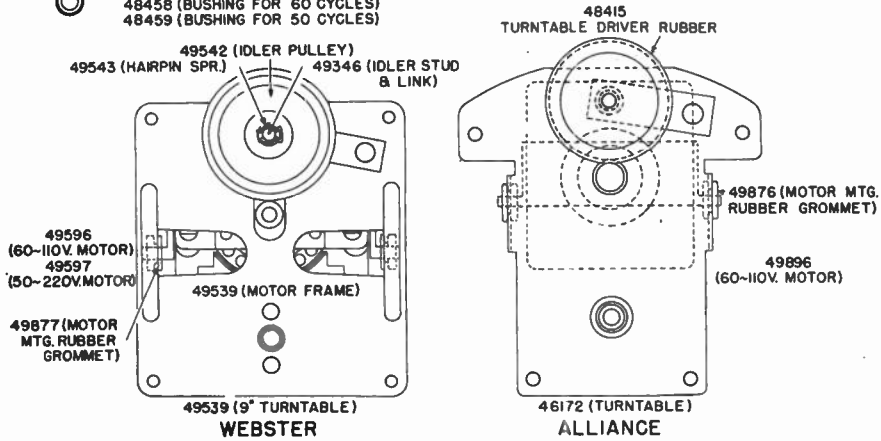


Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-31753-A	Band Sw.	36	27203	.02 mf. 200 v. Cond.
2	G17-32000	Ant. Coil Assy.	37	W-26571	.0005 mf. 200 v. Cond.
3-4	G8-33002	Gang Cond., RF Trim.	38	W-22180	1650 ohm 2 w. Flex. Res.
5-6	W-32155	Vol. Cont. & Sw.	39	W-29480	28 ohm Shunt Res.
7	22196	20,000 ohm 1/2 w. Res.	40	W-4099-A	Dial Light Bulb
8	G10-32001	RF Coil Assy.	41	W-28068	12 mf. 200 v. Cond.
9	W-24049	.1 mf. 200 v. Cond.	42	G7-28168	Output Choke
10-11	W-25857	8-8 mf. 200-25v. Cond.	43	W-22688	.1 mf. 400 v. Cond.
12	G13-32002	Osc. Coil Assy.	44	W-27652	.003 mf. 200 v. Cond.
13	28588	2700 ohm 1/2 w. Res.	45	W-31754	Phone Jack
14	W-27203	.02 mf. 200 v. Cond.	46	W-21452	1100 ohm 3/4 w. Flex. Res.
15	21875	100,000 ohm 1/2 w. Res.	47	G3-28912	Power Cable Assy.
16	21453	40,000 ohm 1/2 w. Res.	48	W-25791	10 amp. Fuse
17-18	G1-25884	Osc. Series Padder	49	W-30399-A	Cable & Plug
19	25937	Osc. Series Padder BC	50	G39-27975	Socket 78 Type
20	W-24049	.1 mf. 200 v. Cond.	51	G47-27975	Socket 6A7 Type
21	G2-25948	IF Trim. Cond.	52	G39-27975	Socket 78 Type
22	G3-25444	IF Trim. Cond.	53	G48-27975	Socket 6B7 Type
23	W-25008-A	IF Trim. Cond.	54	G15-27975	Socket 38 Type
24-25	W-27204	.02 mf. 200 v. Cond.	55	32240	Phone Plug
26	4921-C	10,000 ohm 1 w. Res.	56	27084-A	Phones
27	G3-25445	2nd IF Coil	57	G2-28067	RF "A" Choke
28	W-25008-A	IF Trim. Cond.	58	W-24784	.25 mf. 200 v. Cond.
29	W-22514	750 ohm 3/4 W. Flex. Res.	59	W-30803	8 mf. 200 v. Cond.
30	23785	500,000 ohm 1/2 w. Res.	60	G9-28069	"B" Filter Choke
31	G3-25445	3rd IF Coil	61	L-31767	12 v. Vibrator
32	G2-25948	IF Trim. Cond.	62	G9-28065	Power Trans.
33	W-30741	.00025 mf. Cond.	63	W-31768	.02 mf. 1000 v. Cond.
34	23403	150,000 ohm 1/2 w. Res.	64	W-30366	.5 mf. 160 v. Cond.
35	21454	1 meg. 1/2 w. Res.	65	W-30379	.2 mf. 16 v. Cond.
			66	W-30366	.5 mf. 160 v. Cond.



# MANUAL UNITS AS USED ON MODEL 629

NOTE:  
 48458 (BUSHING FOR 60 CYCLES)  
 48459 (BUSHING FOR 50 CYCLES)



- RECORD PLAYER PARTS**
- 47787 Phono Motor, 110 V. 60 Cy. (Alliance)
  - 46172 Turntable—For 47787 Motor only
  - 48415 Turntable Rubber Drive Pulley (47787 Motor only)
  - 48455 Phono Motor—110 V. 50-60 Cycle (Webster) Assy.
  - 49596 Phono Motor—110 V. 50-60 Cycle only (Webster)
  - 49597 Phono Motor—220 V. 50-60 Cycle only (Webster)
  - 49539 Turntable—For 49596 and 49597 only
  - 49542 Turntable Rubber Drive Pulley (Webster)
  - 49346 Stud and Link—Drive Pulley Mtg.
  - 49543 Hair Pin Spr.—Drive Pulley Retainer
  - 48458 Motor Shaft Pulley (60 Cy. Operation)
  - 48459 Motor Shaft Pulley (50 Cy. Operation)
  - 47755 Phono Mounting Plate
  - 46085 Rubber Grommet—Mtg. Plate
  - 46461 Headed Bushing—Mtg. Plate
  - 37953 Flat Washer—Motor Mtg.
  - 48364 Screw—Phono Plate Mtg.
  - 48980 Pickup (Tone Arm)
  - 47328 Shakeproof Washer—Pickup Mtg.
  - 47329 Nut— $\frac{1}{4}$ "—32—Pickup Mtg.
  - 48977 Crystal Cartridge only

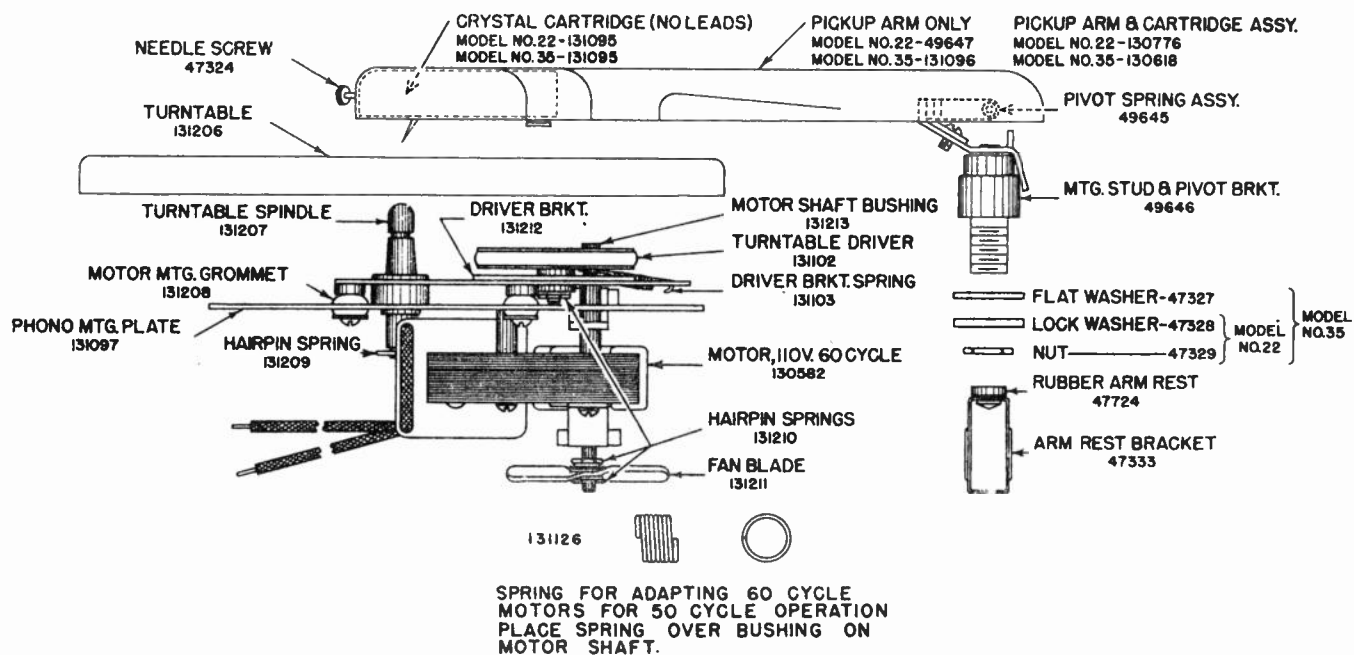
- 47322 Needle Screw
- 49647 Tone Arm—Casting only
- 49646 Mtg. Stud and Pivot Bracket only
- 49645 Pivot Spring Assy. only
- 47305 Pickup (Tone Arm)
- 47327 Flat Washer—Pickup Mtg.
- 47328 Shakeproof Washer—Pickup Mtg.
- 47329 Nut— $\frac{1}{4}$ "—32—Pickup Mtg.
- 47325 Crystal Cartridge only
- 47324 Needle Screw
- 47326 Arm and Pivot—Assy. only
- 47333 Pickup Rest Bracket
- 47788 Rest Bracket Spacer Block
- 7662 Screw (No. 8— $\frac{1}{4}$ " ) Bracket Mtg.
- 47724 Rubber Rest (Tone Arm)
- 47335 Rubber Locking Ring (Tone Arm Rest)
- 47791 Needle Cups
- 47790 Cup Cover
- 46364 Chrome Tip Needle
- 9FM Cabinet
- 47772 Shipping Carton (9FM Cab.)
- 47773 Cabinet Back
- 46464 Thumb Screw—Back Mtg.
- 49415 Lid (Finished Cabinet)
- 49606 Handle—For Cabinet Lid
- 130043 Hinge—For Cabinet Lid
- 130042 Support Bracket—Cabinet Lid

W  
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# PHONO MOTORS & TONE ARMS

## As Used on Models 22AS and 35AK

The miscellaneous parts for the Phono motors and tone arms as used in models 22 and 35 combination receivers are illustrated below along with their part numbers.



CROSLEY RADIO SERVICE BULLETIN

MODEL 488 RECORD PLAYER

November 1939

The record player consists of a small self-starting motor, turntable, pickup, phono-radio switch, and separate volume control.

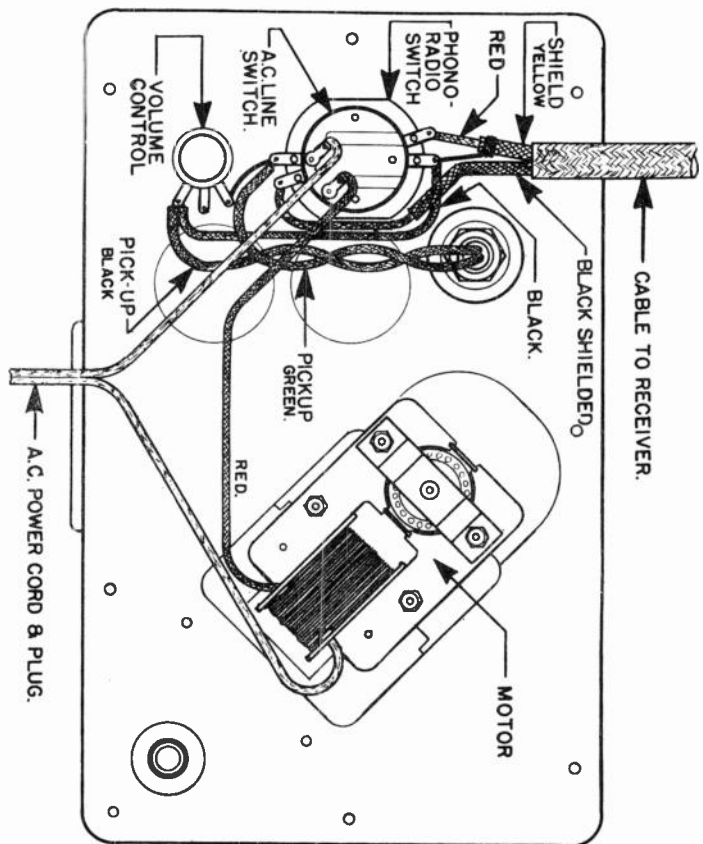
The motor is mounted with two brackets which permits it to swing up and down, this swing permits the weight of the motor to be applied to the friction drive pulley. There are two drive pulleys available, one for 60 cycle and a slightly larger one for 50 cycle operation. The drive pulley must ride flush against the inside surface of the turntable rim.

The following illustrations show the top and bottom views of the unit, along with a few of the various detector circuits with points indicated for attaching pickup leads.

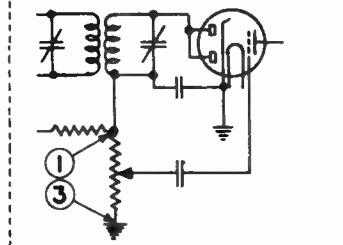
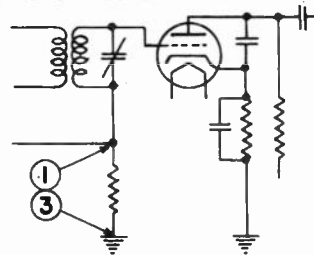
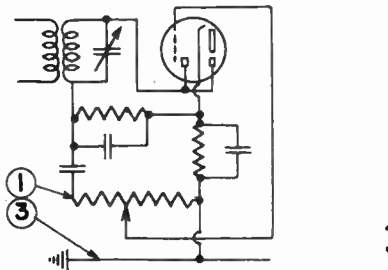
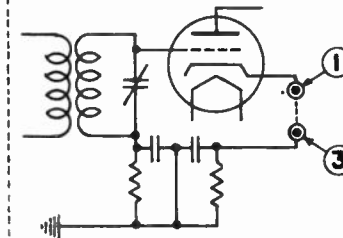
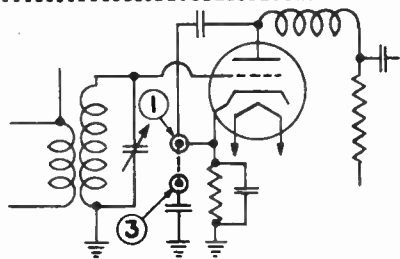
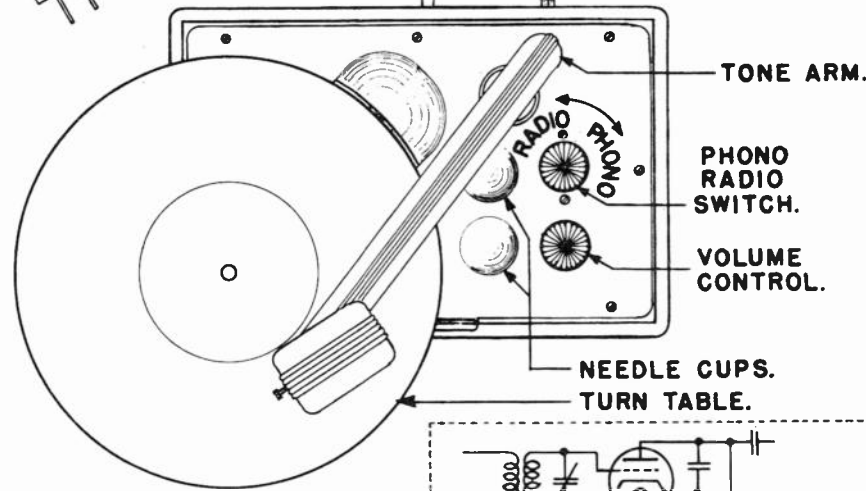
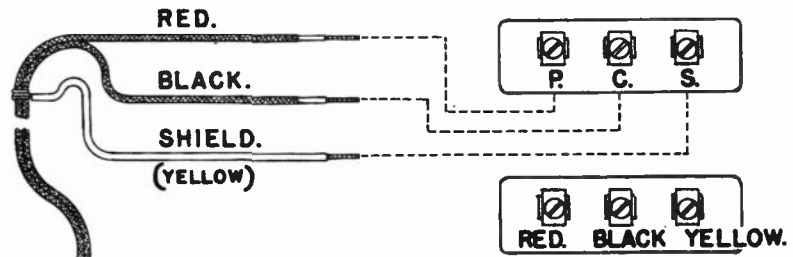
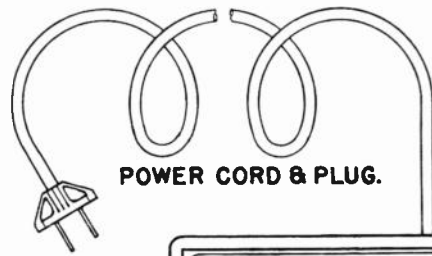
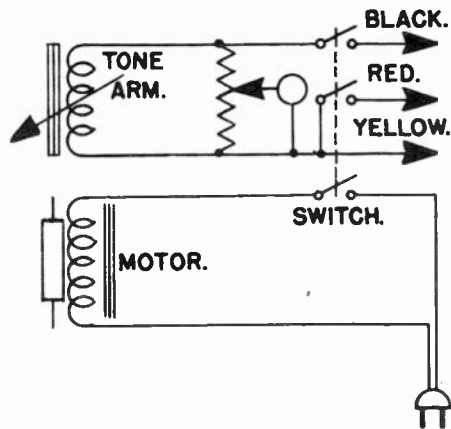
If the magnetic pickup is replaced with a crystal pickup detector circuit #2 cannot be used and pickup will have to be attached as in detector circuit #1.

PARTS LIST

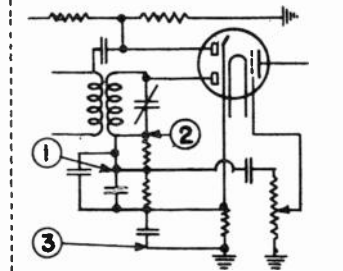
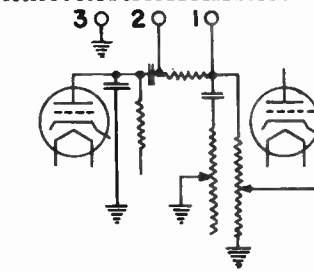
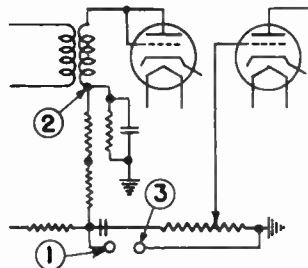
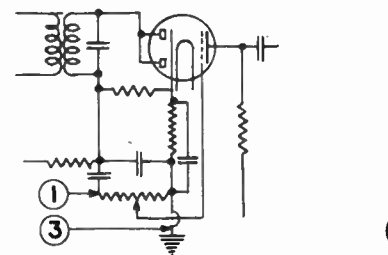
- C-46262A 8EC Phono Cabinet
- B-46355A 8EC Phono Cabinet Bottom
- 46343 Carton
  
- W-46169B Motor
- W-46174A Motor Mtg. Bracket
- W-46991 Rubber Drive Pulley(50 Cy. Operation)
- W-46200 Rubber Drive Pulley(60 " " )
- MG46-46153 Drive Pulley Kit(50 Cycle Operation)
- MG45-46153 Drive Pulley Kit(60 " " )
- W-46172 10" Turn Table
- B-45784 Power Cable & Plug.
  
- MC40-46342 Motor Board Assembly
- C-46173B Phono Mounting Plate
- S-132 #6x $\frac{1}{2}$ " Rd. Hd. Wood Screws (7 Req.)
- W-46299 Cup Washer
- 6837 #6-32x $\frac{3}{8}$ " Washer Hd. Screw (3 Req.)
- 46160 Volume Control
- 46148A Phono-Radio Switch
- W-35201  $\frac{3}{8}$ " Palnut (V.C. & P.-R. Switch)
- 35252A Knob (2 Req.)
- W-46353 Switch Bracket
- B-78 #4-36x $\frac{1}{4}$ " Binding Hd. Mach. Screw(2 Req.)
  
- 46162 Pickup & Tone Arm (Magnetic)
- 46161 1/2"x27 Hex. Nut
- 46821 Needle Screw
- 46947 Arm & Pivot
- 46946 Unit - Pickup Motor
  
- W-46364 Chrome Tipped Needle
  
- 47305 Pickup & Tone Arm(Crystal)
- Black Lead Gnd.
- 47324 Needle Screw
- 47325 Crystal Cartridge
- 46365 Instructions







CODE OF CONNECTIONS  
 ① → BLACK WIRE.  
 ② → RED WIRE.  
 ③ → SHIELD.



## GENERAL INSTRUMENT

This mechanism consists of a rim driven turntable (not shown) running on a fixed bearing (1), which supports the record spindle (2). The spindle is equipped with a rotatable cap (3) to provide for holding records in automatic operation, when in one position, and removing records or playing manually, when in the other position.

The outer edge of the record is held by record supports (4) and (5), adjustable for 10- and 12 inch, and is steadied by a rubber tipped, spring loaded finger (6)

Control of operation is by a single control button (7) having four positions "Off" "Man" "Aut" and "Rej"

Automatic operation starts when rubber tired drive wheel (8) is moved into contact with turntable rim by tone arm movement or control button.

All change functions are controlled by main cam (9) which is driven by drive wheel (8) thru a friction (10) and gear (11) train.

The main cam assembly consists of main cam (9) and automatic trip cam (12). The latter disengages the drive wheel (8) at the end of the change cycle.

The upper side of the main cam (9) controls tone arm swing by engagement with pin in sweep lever (13) attached to tone arm by means of clamp (14) around tone arm pivot sleeve (15). Tone arm lift is controlled by vertical section of main cam (9) operating tone arm thru lift pin (16) inside of sleeve. A boss projecting from the upper side of the main cam (9) displaces the stop lever (17) at the end of the change cycle to permit the tone arm to proceed across the record.

The lower side of the main cam (9) moves the feed lever (18) by means of a roller (19). This movement charges the feed spring (20) and at the proper time permits discharge of the spring causing the feed lever (18) to thrust the feed finger (21), (in top view), forward to feed the record. Connection between feed lever (18) and feed finger (21) is thru feed intermediate lever (22) pivoted in record support post (23) (In top view.)

The stop lever (17), normally held out of engagement by the boss on the main cam (9), swings into position at the start of the change cycle. Its selection of stop points for 10- or 12 inch records is controlled by dog (24) on the record selector shaft running up front of record support post (23) and actuated by swinging record support (4).

The drive wheel (8) is mounted on the carrier lever assembly (25) which is pivoted about the intermediate drive (11). This assembly consists of the carrier lever with its bearings and the trip lever (26). The trip lever (26) carries a pin (27) engaging the automatic trip cam (12); a pawl (28) to engage the serrated edge of sweep lever (13); a positive trip screw (29) to interfere with sweep lever (13). Engagement of pin (27) with automatic trip cam (12) pulls drive wheel (8) out of engagement with turn table at end of change cycle. Reversal of the tone arm movement rotates pawl (28) to release trip lever (26). Thrust of sweep lever (13), when tone arm approaches spindle (2), against positive trip screw (29) releases trip lever (26)

The control lever (31) operated by the control button (7), a- turns switch on and off b- prevents carrier lever assembly (25) from swinging when in manual

position c- permits carrier lever assembly (25) movement to engage drive wheel (8) with turntable, when in automatic position d- displaces trip lever (26) causing drive wheel (8) engagement with turntable, when pushed to Reject. Function (a) is accomplished by pin which engages dog of toggle switch. Functions (b) and (c) are controlled by shape of rear edge of control lever (31) and a fixed stud (32) in the carrier lever. Function (d) is accomplished by stud (33) in control lever (31) striking edge of trip lever (26) and unlatching pin (27) in same from automatic trip cam (12).

Bearings are separated and center distances maintained by aligning bracket (34) which also carries bearing for record feed lever (18).

### ADJUSTMENTS

#### Positive Trip

The tripping point is adjusted by turning positive trip screw (29) counterclockwise to trip earlier in playing cycle and clockwise to delay tripping.

#### Tone Arm

The drop point is adjusted by loosening the screw in clamp (14) slightly to permit repositioning of tone arm in relation to sweep lever (13). Care must be exercised to see that tightening the screw does not cause bind in tone arm swing.

The rise and drop of tone arm is adjusted by bending short arm of lift pin (16) slightly. Long arm must not be distorted or it will bind in pivot sleeve (15).

#### Record Feed

The feed finger (21) should strike only the bottom record of the stack. Record supports (4) and (5) should be adjusted up or down to obtain this result. Adjustments must be checked for both 10- and 12 inch records as one of the buttons is used in both cases.

Fixed record support (5) can be adjusted for engagement with record by removing hold down finger assembly (6) and loosening two screws under feed finger (21)

#### Friction drive

The rubber wheel (10) engaging with the intermediate drive assembly (11) should be compressed just enough to prevent slipping or skidding at any portion of the change cycle. Compression is controlled by the nut and locknut, below the rubber wheel.

#### General

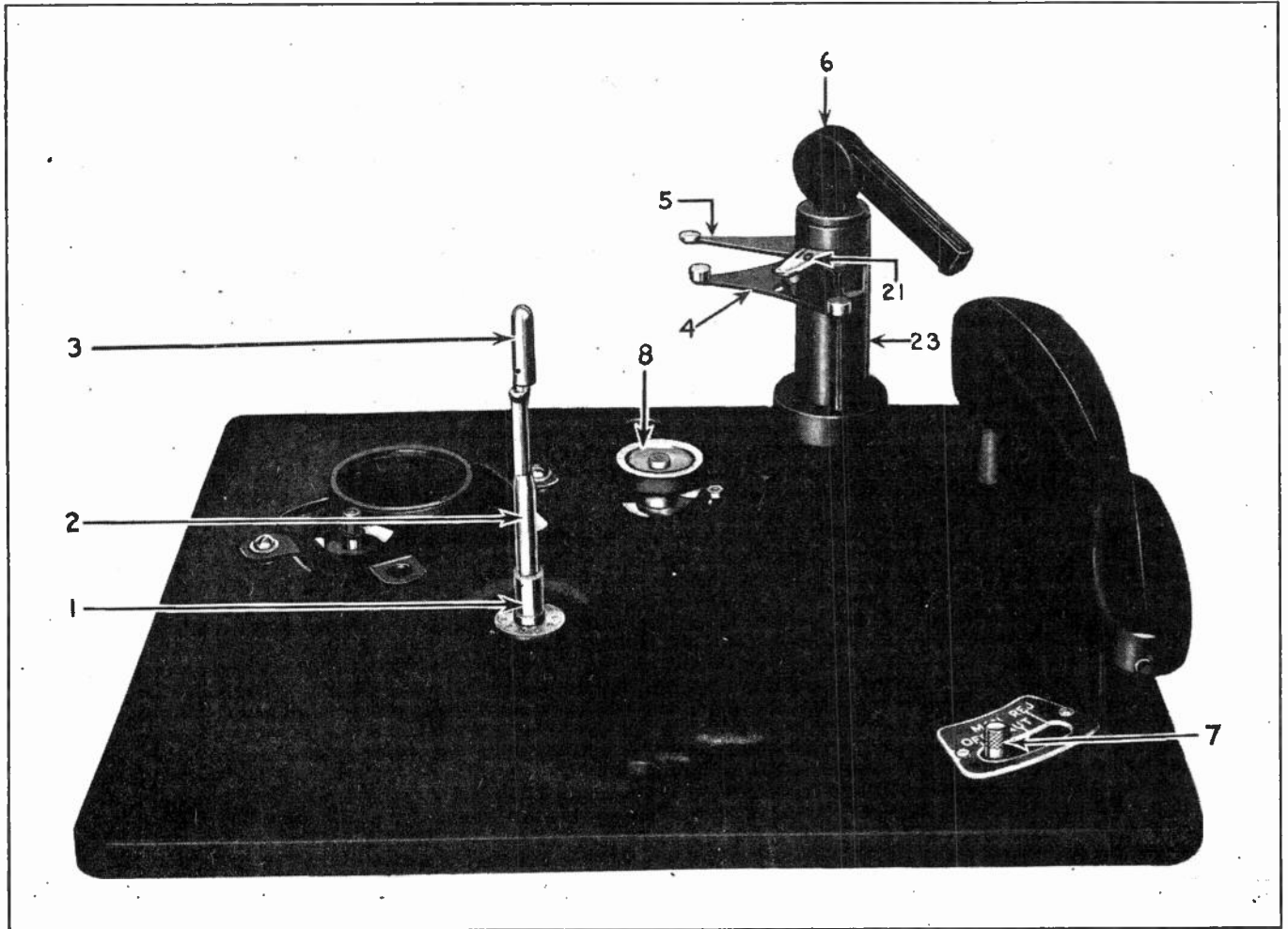
Mechanism should be checked for damaged or missing parts. Carrier lever assembly (25) must be perfectly free on its shaft and trip lever (26) must be perfectly free on the carrier lever. All moving parts should be lubricated with oil.

Rubber drive wheels under the turntable and the rim of the turntable must be free of grease or dirt.

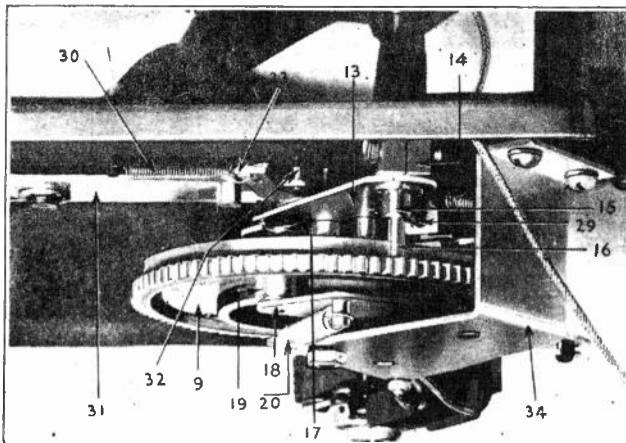
Turntable thrust bearing can be lubricated with heavy oil or light grease and radial bearing with light oil.

Pickup lead from tone arm must have slack to permit free movement of arm.

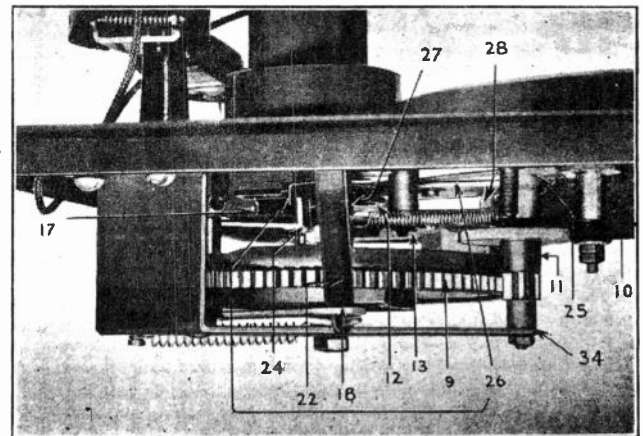
# GENERAL INSTRUMENT



TOP VIEW - TURNTABLE REMOVED



VIEW LOOKING AT RIGHT SIDE



VIEW LOOKING AT BACK

# GENERAL INSTRUMENT

Part Number	Description
133653	Turntable Bearing Assy.
133666	Swinging Record Support
133665	Stationary Record Support
133654	Hold Down Finger
134396	Changer Mechanism Drive Wheel Shaft Assy.
133657	Main Cam Assy.
133677	Change Mechanism Drive Wheel Assy.
133655	Intermediate Drive Gear Assy.
133661	Sweep Lever Assy.
134508	Tone Arm Hinge Assy.
133668	Lift Pin
134509	Stop Lever
134510	Record Feed Lever
134511	Record Feed Lever
133669	Record Feed Spring
133659	Record Feed Lever Assy.
134512	Feeder Support Assy.
134513	Record Selector Stop-Point Dog
133663	Drive Wheel Carrier Lever Assy.
134514	Trip Lever Positive Trip Screw
133671	Carrier Lever Spring or Tone Arm Pull-in Spring
133662	Control Lever Assy.
134515	Carrier Lever Stud
134516	Control Lever Stud
133670	Stop Lever Spring
134517	Trip Lever Spring
133679	Motor Rim Drive Wheel Assy.
134518	Motor Rim Drive Wheel Spring
133656	Turntable Thrust Bearing
134519	Switch & Bracket Assy.
133667	Turntable
133284-1	Motor (60 cy)
132968-1	Motor (25 cy)
134520	Tone Arm Assy.
132738	Pickup Cartridge
134521	"C" Balance Spring
134522	Shielded Pickup Cable
134165	Service Manual
132525	G.I. Changer Only
132523-2	G.I. Changer & Needle Assy.
	Made Up Of
1	132525 Changer
1	132659-1 Needle
1	132527-2 Counter Weight
	L-132530 G.I. Changer With Wrap Around for 82CQ
	Made Up Of
1	132525 Changer
1	132659-1 Needle
1	132527-2 Counter Weight
.1	G-133180-3 Wrap Around
	L-133744 G.I. Changer With Wrap Around for 02CP, 72CP
	Made Up Of
1	132525 Changer
1	132659-1 Needle
1	132527-2 Counter Weight
1	G-133180-6 Wrap Around
	L-132528 Same as L-133744

**CUTTING ARM ADJUSTMENTS.**

"Recorder with Automatic Record Changer." "Seeburg Type" used on Models 28AZ, 34BH, 31BF, and 48BF.

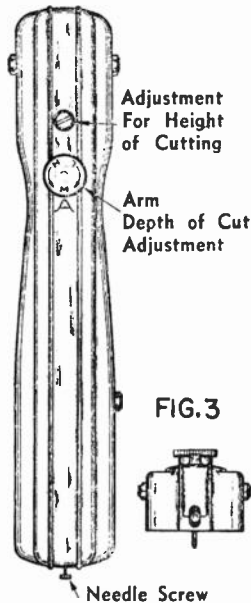
The height of the cutting arm can be varied by means of the slotted screw head which is on top of the arm and near the back, approximately flush with the top surface of the arm. In order to make this adjustment, it is necessary to insert a cutting needle and, with the motor turned OFF and a record blank on the turntable, place the recording arm in the cutting position. Now turn cutting arm height adjusting screw UNTIL THE NEEDLE SCREW IS CENTERED IN THE SLOT THROUGH WHICH IT PROTRUDES (AT FRONT END OF RECORDER ARM).

Any change in the cutting arm height adjustment will change the vertical angle of the cutting needle therefore it is absolutely essential that the depth of cut be rechecked.

"Recorder as used in Model 33BG." (General Industries Type).

The height adjustment of the cutting arm on this recorder is accomplished by raising the cutting arm and loosening the locknut of the cutting arm Height Adjusting Screw, see fig. 4. Place needle in cutting arm and place a record blank on turn table. Carefully lower cutting arm on record, with the motor turned OFF.

Set the Arm Height Adjusting Screw so that there is



exactly 1/4" space between the surface of the record and the bottom edge of the cutting arm (Front) see fig. 4.

NOTE: A change in cutting arm height adjustment may affect the depth of cut or vice-versa.

**C.—ADJUSTING DEPTH OF CUT.**

The correct depth of cut is important to insure maximum record life and good reproduction quality.

The depth of cut which is determined by the cutting grooves.

The adjustment of the depth of cut is accomplished by rotating the chrome knob on the cutting arm of the recorder with automatic record changer, see fig. 3. This knob has the letters "L, M, and H" engraved on it indicating Light, Medium and Heavy pressures. In general, the machine is properly adjusted and set at the factory so that it will cut the average record correctly when this knob is in the "M" position.

On the recorder as employed in Model 33BG the needle pressure on the blank disc should be such THAT THE WIDTH OF THE GROOVE IS APPROXIMATELY THE WIDTH OF THE SPACE (Land) BETWEEN THE GROOVES. With no sound applied the ratio of 60 percent groove and 40 percent land is the ideal cutting depth for most conditions. The importance of the depth of cut CANNOT BE OVER EMPHASIZED, since too light a cut or too heavy a cut will tend to give distortion and generally poor results.

The adjustment of the depth of cut is accomplished by rotating the chrome knob on the cutting arm of the recorder with automatic record changer, see fig. 3. This knob has the letters "L, M, and H" engraved on it indicating Light, Medium and Heavy pressures. In general, the machine is properly adjusted and set at the factory so that it will cut the average record correctly when this knob is in the "M" position.

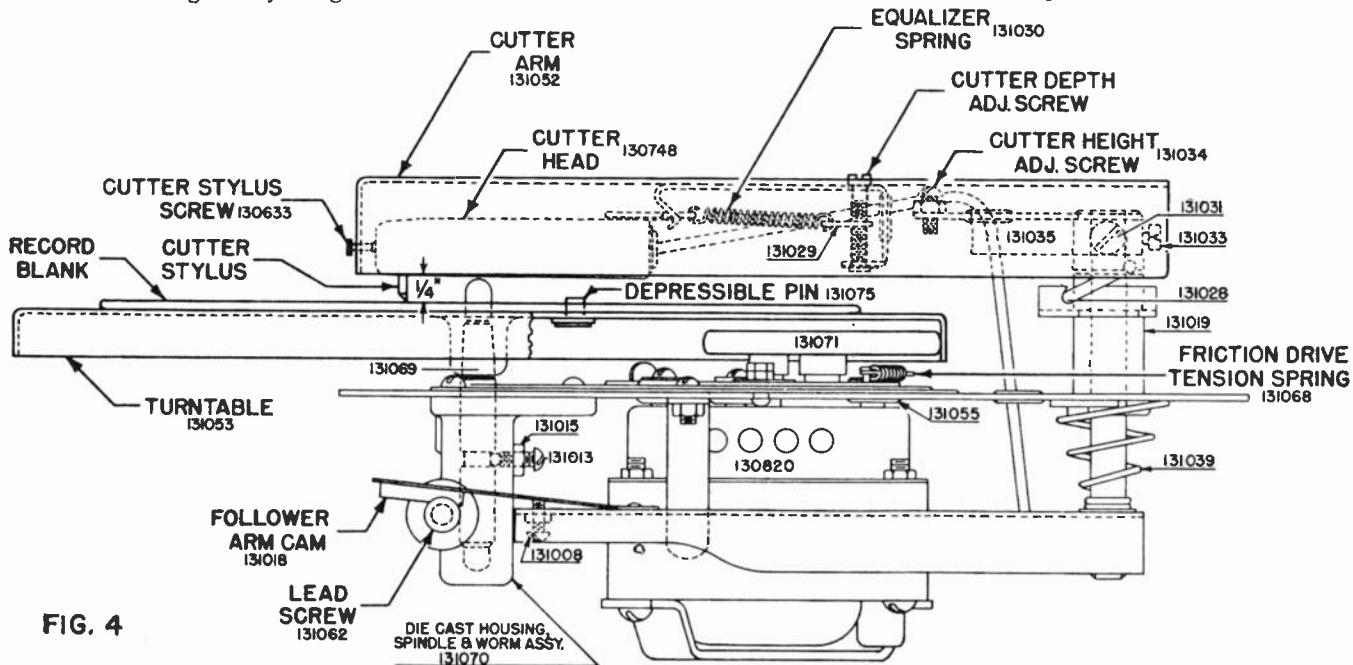


FIG. 4

On the recorder as employed in Model 33BG the depth of cut is adjusted by rotating the screw approximately in the middle of the cutting arm and flush with the top, see fig. 4. To increase the depth of cut this screw should be turned to the right (clockwise). Conversely to decrease the depth of the cut the screw should be turned to the left (counter-clockwise). This adjustment is rather critical and should be moved only in quarter or half turns at a time.

When the cutting head is in proper adjustment, and the cutter arm is raised to the point (approximately 45°) where it can be freely moved over the record, the cutting head needle screw should **JUST REST** on the bottom of the slot in the nose of the arm,—that is, the equalizer spring tension should be such that the cutter head **ALMOST FLOATS FREELY**.

**ALWAYS TRY A TEST CUT WITH A NEW CUTTING NEEDLE** before making any adjustments, since often times when casual observation indicates faulty adjustment, the whole trouble may be due to a cutting needle that has been dulled either through accident or natural wear.

**NOTE:** Changing the arm height usually necessitates a change in cutting depth adjustment and changing the depth of cut may call for a slight variation in the arm height adjustment to prevent cutting needle chatter or reduce surface noise.

**E.—CUTTING LEVEL.**

The cutting level as required for instantaneous recordings as made on the two type recorders as used in Crosley equipment will vary with the type cutting needle used and its condition and the type record blank used. Provided the cutting arm height is correct and the depth of cut is correct the following cutting levels should give good results.

For those models having the cathode ray type indicator, the volume level should be adjusted until the shadow on the indicator tube forms a narrow vertical line approximately 1/32" wide for loud or peak sig-

nals. During recording this shadow will vary in width in accordance with the loud and soft passages of the program.

For the models equipped with a Neon Tube as a Cutting Level Indicator the volume level should be raised to a point where the neon tube elements give an even pinkish glow during loud or peak signals. The correct cutting level can only be found by experimentation as the level is dependent upon the type and condition of cutting needle and blank disc used.

**F.—RECORDS (BLANK & CUT)**

The record blanks for instantaneous home recordings differ from commercial records in many respects. Commercial records are usually made of shellac compound pressings formed under hydraulic pressure, resulting in recordings which are extremely resistant to wear but which are quite brittle and easily broken. Record blanks for instantaneous recordings are quite soft in comparison with commercial records but their durability is about as good as that of the cheaper grade phonograph record provided they are given the proper care.

**NEVER USE REPRODUCING NEEDLE ON INSTANTANEOUS RECORD THAT HAS BEEN USED TO PLAY COMMERCIAL PHONOGRAPH RECORD.**

The Crosley home recording disc is of the non-flammable or slow burning type. Always exercise care in the storage of home recordings. Keeping them clean, free from dust and dirt will add many hours to the life of the record.

**NEVER ATTEMPT TO PLAYBACK AN INSTANTANEOUS RECORDING ON A MECHANICAL PHONOGRAPH.**

**NOTE:** Excessive rumble which may sometimes be encountered during the playback of home recordings usually can be eliminated entirely (on Models 33BG, 28AZ, and 34BH) by just turning the microphone fader or level control in a clockwise direction until the switch clicks.

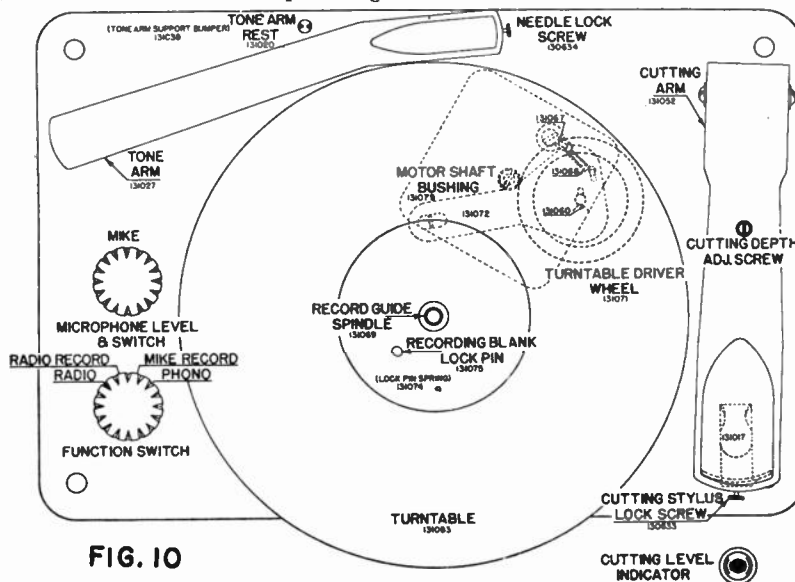


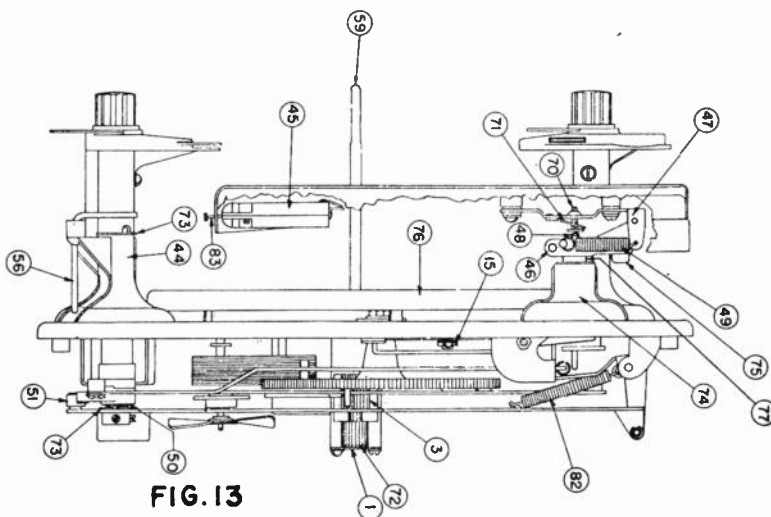
FIG. 10

# RECORDER AS USED IN MODEL 33 BG

## PARTS LIST (Refers to Fig. 4 and Fig. 10)

Part No.	Description	Part No.	Description
131000	Retractable Pin Spring Washers	131048	Pickup Cartridge Hinge Damper Felt
131001	Motor Mounting Screw	131049	Tone Arm Post Complete
131002	Shakeproof Motor Housing and Bracket Lock Washer	130748	Cutter Head with Leads
131003	Hex Nut for Pivot Post	131051	Cutter Head Bumper Cork (Magnetic)
131004	Mounting Bracket Assy. Washer	131052	Cutter Arm Complete (Magnetic)
131005	Lead Clip Mtg. Screw Lock Washer	131053	10" Weighted Turntable (1/8" one piece T. T.)
131006	Motor Mounting Screw	131054	Mounting Bracket Assy. Screw Nut
131007	Retractable Pin Spring Screw (For 2 piece T. T.)	131055	Motor Plate Rubber Grommet
131008	Adjusting Screw (Follower Arm)	131056	Tone Arm Support Lock Washer
131009	Aux. Shaft Housing Mounting Screw	131057	Mounting Plate Grommet Sleeve
131010	Retractable Pin Spring Screw (For 1/8" one piece T. T.)	131058	Turntable Drive Disc Thrust Washer
131011	Aux. Shaft Housing and Motor Mounting Screw Washer	131059	Rotor Shaft Pulley Set Screw (1/2" Shaft)
131012	Cutter Arm Mtg. Screw Washer	131060	Turntable Drive Disc Clip
131013	Turntable Shaft Locking Screw	131061	Aux. Shaft Housing Assy.
131014	Pivot Saddle Plate Adjusting Screw Nut and Cutter Arm Holding Bracket Screw	131062	Lead Screw and Pinion Assy.
131015	Turntable Shaft Locking Screw Nut	131063	Lead Screw End Thrust Screw
131016	Adjusting Screw Nut (Follower Arm)	131064	Lead Screw End Thrust Screw Nut
131017	Cutter Arm Holding Bracket	131065	Motor Mounting Plate
131018	Follower Arm Complete	131066	Rotor Shaft Pulley (For 1/2" Shaft)
131019	Pivot Post Bushing	131067	Turntable Drive Disc Tension Spring Holder
131020	Tone Arm Support	131068	Turntable Drive Disc Tension Spring
131021	Base Plate Complete (Less Switch, Etc.)	131069	Turntable Shaft
131022	Pickup Cartridge Mounting Screw	131070	Aux. Shaft Housing Complete
131023	Pickup Cord Clip	131071	Turntable Drive Disc Complete
131024	Pickup Cartridge (ONLY)	131072	Turntable Drive Disc Mtg. Bracket Assy.
MG5-130570	Recorder Base Assy. Complete (110 V.—60 Cy.)	131073	Motor Mtg. Plate Complete
MG8-130570	Recorder Base Assy. Complete (110 V.—50 Cy.)	131074	Retractable Pin Spring (For 1/8" one piece T. T.)
131026	Tone Arm Assy.	131075	Retractable Pin (For 1/8" one piece T. T.)
131027	Tone Arm Complete	131076	Rotor Shaft Pulley (For 1/16" Shaft and two piece T. T.)
131028	Lift Lever	131077	Rotor Shaft Pulley Set Screw (1/16" Shaft)
131029	Tension Adjusting Screw Lug	131078	Rotor Shaft Pulley Support Ring
131030	Cutter Head Tension Spring	131079	Rotor Shaft Pulley (For 1/8" one piece T. T.)
131031	Cutter Arm Mtg. Screw	131080	Retractable Pin Spring (For two piece T. T.)
131033	Saddle Bushing Set Screw	131081	Retractable Pin (For two piece T. T.)
131034	Pivot Saddle Plate Adjusting Screw	131082	10" Weighted Turntable (two piece T. T.)
131035	Pivot Saddle Plate Assy.	130820	Motor—110 Volt, 60 Cycle
131036	Cutter Arm Holding Bracket Screw	130634	Needle Screw—Tone Arm
131037	Pivot Post Straddle Plate	130633	Needle Screw—Cutting Arm
131038	Tone Arm Support Bumper	131126	Spring—50 Cycle—Motor Bushing
131039	Pivot Post Return Spring	130628	Spring—Base Mounting (8 Req.)
131040	Lead Clip Screw	38085	Wing Nut—Base Mounting (4 Req.)
131041	Lead Clip	130625	Screw—Base Mounting (4 Req.)
131042	Tone Arm Post Washer	130626	Stirrup—Shipping Clamp (4 Req.)
131043	Tone Arm Washer	130901	Cutting Nddle (1)
131044	Tone Arm Post Nut	131785	Motor Bushing—Change 50 to 60 Cycles
131045	Pivot Post Bushing Lock Washer	47339	Play Back Needles (Pkg. 10)
131046	Follower Arm Shaft Washer		
131047	Follower Arm Stop		

### SEEBURG (1940)



Seeberg 1940  
Parts List on the  
Following Page.

# SEEBURG (1940)

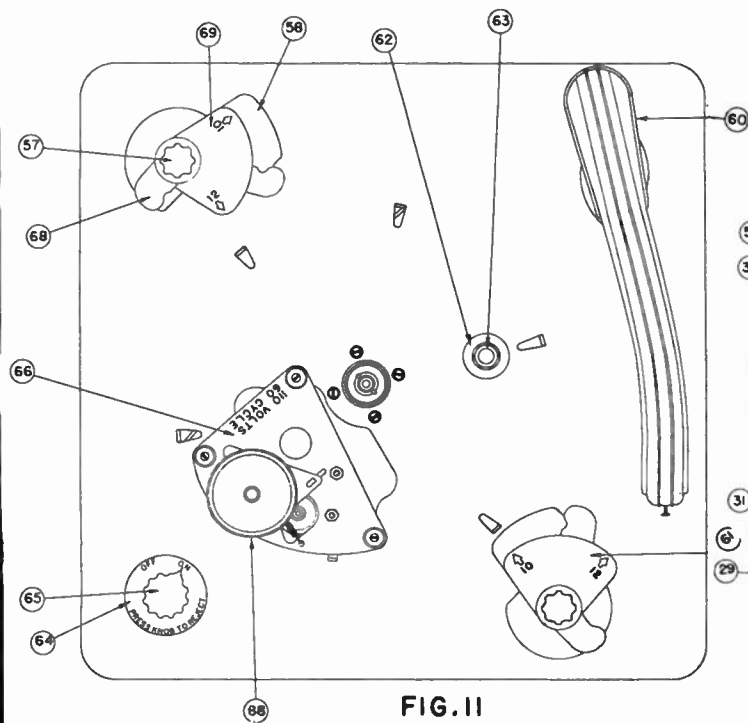


FIG. 11

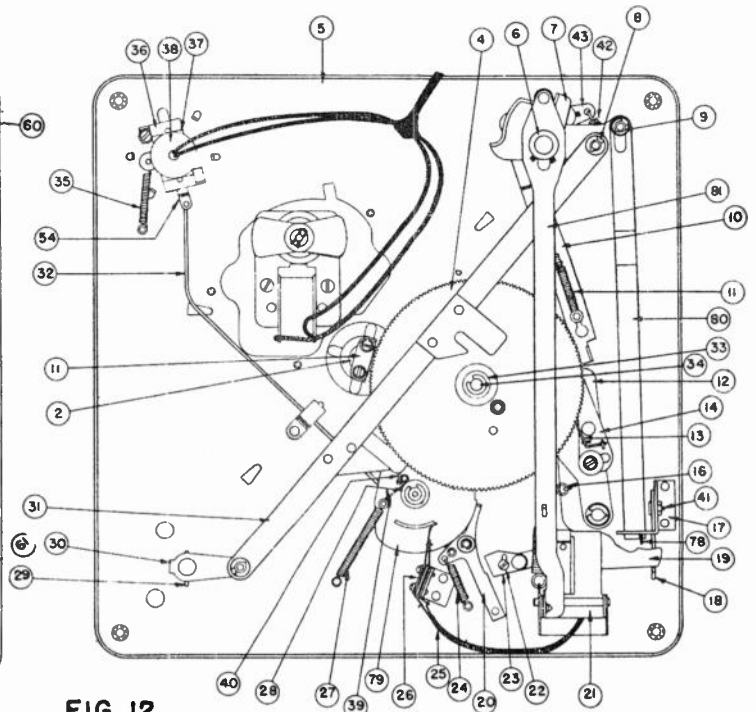


FIG. 12

Item No.	Part No.	Description	No. Used	Item No.	Part No.	Description	No. Used
1	130659	Spindle Thrust Plate	1	47	130709	Tone Arm Mounting Bracket	1
2	130660	Spindle Bearing Housing Assy.	1	48	130710	Tone Arm Lift Pin	1
3	130661	Drive Pinion	1	49	130711	Counter Balance Spring	1
4	130662	Drive Gear Assy.	1	50	130712	Spring Washer	1
5	130663	Panel, Post and Stud Assy. (Model 30)	1	51	130713	Roller	2
	131524	Panel, Post and Stud Assy. (Model 29)	1	52	130714	Switch Return Spring	1
6	130664	Selector Shaft Collar	1	53	130715	Flat Washer	2
7	130665	Selector Shaft Crank Assy. Post No. 2	1	54	130716	Switch Reject Slide	1
8	130666	Flat Washer	3	55	130717	Switch Collar and Reject Pin Assy.	1
9	130667	"C" Washer	3	56	130718	12" Set Rod	1
10	130668	12" Set Link	1	57	130727	Control Knob	2
11	130669	12" Reset Link Spring	1	58	130728	Selector Blade (10")	2
12	130670	Tone Arm Locator and Bushing Assy.	1	59	130729	Turntable Spindle	1
13	130671	Tone Arm Booster Spring	1	60	130730	Tone Arm	1
14	130672	Tone Arm Locator Shoe (12")	1	61	130731	Selector Arm No. 1	1
15	130673	Tone Arm Locator Shoe (10")	1	62	130732	Special Washer	1
16	130674	Tone Arm Locator Spring	1	63	130733	Drive Gear Stud Lock Nut	1
17	130675	Tone Arm Latch and Guide Bracket	1	64	130734	Switch Escutcheon	1
18	130676	Tone Arm Latch Lever	1	65	130735	Switch Control Knob	1
19	130677	Tone Arm Lever Assy.	1	66	130736	Motor	1
20	130678	Trip Lever Assy.	1	67	130737	Record Support Post No. 2	1
21	130679	Tone Arm Lift Plate Assy.	1	68	130738	Selector Blade (12")	2
22	130680	Thumb Nut	1	69	130739	Selector Arm No. 2	1
23	130681	Tone Arm Trip Shoe	1	70	130719	Tone Arm Adjusting Screw	1
24	130682	Trip Lever Spring	1	71	130720	Adjusting Screw Lock Spring	1
25	130683	Pickup Shielded Wire	1	72	130721	Thrust Washer	1
26	130684	Muting Switch	1	73	130722	Thrust Washer	5
27	130685	Clutch Spring	1	74	130723	Ball Race Assy.	1
28	130686	Flat Washer	1	75	130724	Rubber Bumper	1
29	130687	Taper Pin	3	76	130725	Turntable	1
30	130688	Selector Shaft Drive Crank Assy. Post No. 2	1	77	130697	Tone Arm Shaft	1
31	130689	Drive Link Assy.	1	78	130698	Reset Arm Stop Washer	1
32	130690	Trip Rod	1	79	130703	Engagement Clutch Cam Assy.	1
33	130691	Flat Washer	1	80	130704	Tone Arm Reset Link	1
34	130692	Drive Gear Stud	1	81	130705	Tone Arm Lifter Link Assy.	1
35	130693	Switch Spring	1	82	130726	Tone Arm Lifter Reset Spring	1
36	130694	Switch Mounting Bracket	1	83	131083	1/16" Needle Screw	1
37	130695	Switch Retainer Bracket	1	84	131236	Upper Mounting Spring (Base)	4
38	130696	Switch	1	85	131237	Lower Mounting Spring (Base)	4
39	130699	Clutch Reset Pawl Spring	1	86	131238	"U" Nut for Mounting Bolts	4
40	130700	Clutch Reset Pawl	1	87	130981	1/4-20 R. H. D. Machine Screw	4
41	130701	Latch Lever Shoulder Screw	1	88	131102	Idler Wheel	1
42				89	131032	Spring—50 Cycle Motor Bushing	1
43	130702	12" Set Arm Assy.	1				
44	130706	Record Support Post No. 1	1				
45	131024	Tone Arm Cartridge	1				
46	130708	Tone Arm Swivel Bracket	1				



**1.—PICKUP DOES NOT INDEX PROPERLY ON TEN OR TWELVE INCH RECORDS**

(A) *Adjustment for correct indexing of 10-inch records:*

1. Swing tone arm outward until tone arm lever assembly, (Item 19, Fig. 12) latches with tone arm latch lever, (Item 18, Fig. 12) which is held to the tone arm shaft, (Item 77, Fig. 13) by two setscrews.

2. Make sure these setscrews are tight and that there is a slight play between the tone arm lever assembly and the panel, (Item 5, Fig. 12). This will give proper clearance at ball race assembly, (Item 74, Fig. 13).

The tone arm lever assembly, (Item 19, Fig. 12), is held against tone arm latch lever, (Item 18, Fig. 12) by the tension of tone arm locator lever spring, (Item 16, Fig. 12).

3. Next loosen the clamping screw in the Swivel Bracket Assembly, (Item 46, Fig. 13).

4. Now move tone arm, (Item 60, Fig. 11) until its outside edge is  $\frac{1}{8}$ " from the outside edge of the panel (Item 5, Fig. 12) and re-tighten screw securely.

**2.—RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE AT END OF RECORD**

(A) *Worn or Damaged Stop Groove:* If the stop groove in the record is worn out or damaged, discard such a record.

(B) *Cut-off Adjustment May Be Incorrect:* The Record Changer should go into its changing cycle when the needle enters the stop groove and has traveled to within a distance of  $\frac{1}{16}$ " from the center of the turntable shaft.

If the Record Changer does not go into its changing cycle when the needle has reached the above-mentioned distance, the Tone Arm Trip Lever Shoe, (Item 23, Fig. 12), should be moved toward the outside edge of the panel. To do this, it is necessary to loosen the thumb nut, (Item 22, Fig. 12), and then retighten after adjustment has been made.

If the Record Changer goes into its changing cycle before the needle has reached a distance of  $\frac{1}{16}$ " from the center of the turntable, the Tone Arm Trip Lever Shoe should be moved inward toward the center of the Record Changer.

**3.—RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE WHEN SWITCH KNOB IS TURNED ON**

When the switch is turned to "ON" the Record Changer should start its changing cycle. If it does not, the following points should be checked.

1. Make sure motor is running.

2. Check Trip Rod, (Item 32, Fig. 12), to make sure it releases Trip Lever Assembly, (Item 20, Fig. 12), from Engagement Clutch Cam Assembly, (Item 79, Fig. 12), when Switch Knob is being turned on. If Trip Lever Assembly is not released, Trip rod should be shortened by bending until Trip Lever clears Engagement Clutch Cam Assembly, when Switch Knob is turned.

3. Make sure that Clutch Reset Pawl, (Item 40, Fig. 12) clears Drive Link Assembly, (Item 31, Fig. 12).

**4.—RECORD CHANGER CONTINUES TO REPEAT ITS CHANGING CYCLE WITHOUT PLAYING RECORDS**

(A) Trip Lever Assembly, (Item 20, Fig. 2) does not latch in Engagement Clutch Cam Assembly (Item 79, Fig. 12), which may be due to causes listed below:

1. Trip Rod (Item 32, Fig. 12), may be bent so that it is too short, holding Trip Lever Assembly from contacting Engagement Clutch Cam Assembly.

2. Springs (Item 24 or 35, Fig. 12) may be disconnected.

**5.—NO SOUND WHEN NEEDLE IS ON MOVING RECORD**

**Recorder with Automatic Record Changer.**

**(Models 28AZ, 34BH, 31BF, and 48BF)**

**1.—FUNCTION OF MANUAL CONTROL BUTTON AND RELATIVE PARTS**

When Manual Control Button (Item 84, Fig. 6) is moved to the Manual Play-Back recording position, it moves the Manual Control Slide (Item 102, Fig. 7) which in turn moves Clutch Lock Slide (Item 103, Fig. 7) into a position which prevents Engagement Clutch Cam Assembly (Item 79, Fig. 8) from rotating. When Engagement Clutch Cam Assembly is in the above mentioned position and is not free to rotate, the Changer will not go into its changing cycle.

1. Muting switch (Item 26, Fig. 12), may be out of adjustment. The contacts of this switch should be open whenever its long blade is not resting on the shoe of the Engagement Clutch Cam Assembly (Item 79, Fig. 12). If the contacts remain closed after the long blade has left the shoe, they should be adjusted by bending until there is a separation of approximately  $\frac{1}{32}$ ".

Switch should be checked to make sure contacts are closed when long blade is resting on the shoe of the Engagement Clutch Cam Assembly.

2. The lugs on the Muting switch may have been bent together.

3. Pickup cartridge in Tone Arm may have been damaged or may be defective.

**6.—TONE ARM ADJUSTMENTS FOR 12" RECORDS**

1. Turn both Control Knobs until the arrows marked "12" are pointing toward the center of the turntable.

2. Place a twelve inch record on the turntable.

3. Start Record Changer and note where needle contacts record. Correct contacting is about  $\frac{1}{8}$ " from the outside edge of record.

4. Set Rod (Item 56, Fig. 13), is operated by Selector Arm (Item 61, Fig. 11). The 12" Set Link (Item 10, Fig. 11), operates as a stop when Record Changer is set for 12" records. When Tone Arm Locator Assembly (Item 12, Fig. 11) contacts 12" Set Link the Tone Arm should be in the correct position to play a 12" record.

If at this point, the position of Tone Arm is incorrect, loosen the screw which holds the Tone Arm Locator Shoe 12" (Item 14, Fig. 11) and move in either direction as required and tighten screw.

**7.—TONE ARM ADJUSTMENTS FOR 10" RECORDS**

1. Turn both knobs until the arrows marked "10" are pointing toward the center of the turntable.

2. Place a 10" record on the turntable and start Record Changer.

3.—Note where needle contacts record. Correct contacting is about  $\frac{1}{8}$ " from the outside edge of record. If contacting of needle is not correct as mentioned, loosen the screw which holds Tone Arm Locator Shoe 10" (Item 15, Fig. 13) and slide shoe in or out as required, then tighten screw.

**8.—TONE ARM HEIGHT ADJUSTMENTS**

Set the Record Changer for ten-inch records, turn Switch to "ON" and allow Record Changer to go thru a changing cycle with no record on the turntable. The clearance between Turntable and the bottom surface of the Tone Arm should be approximately  $\frac{1}{16}$ ". Usually this clearance can be obtained by adjusting the Tone Arm Adjustment Screw (Item 70, Fig. 13). It is well to check the following points before making any adjustment.

Check clearance between Roller (Item 51, Fig. 13), and Selector Crank Shaft Assembly (Item 7, Fig. 12). There should be approximately  $\frac{1}{32}$ " clearance at this point. If the clearance is greater, it would be due to the pressure on the Spring Washer (Item 50, Fig. 13) being too great. This will prevent the Tone Arm Lifter Reset Spring (Item 82, Fig. 13) from returning the Tone Arm Lifter Link Assembly (Item 81, Fig. 12) sufficiently. To relieve the pressure on the Spring Washer, lower the Selector Shaft Collar (Item 6, Fig. 11) slightly.

**9.—TONE ARM LOWERS ON RECORD TOO SUDDENLY**

If the Tone Arm lowers too suddenly, the Spring Washer (Item 50, Fig. 3) which is located between the Tone Arm Lifter Link Assembly (Item 81, Fig. 2) and Selector Crank Shaft Assembly Post (Item 7, Fig. 2) is not under sufficient pressure. The setscrews in the Selector Shaft Collar (Item 6, Fig. 2) should be loosened and the Selector Shaft Collar pressed upward slightly and set screws tightened.

Also when the Manual Control Button is in the above mentioned position, the Manual Control Slide has moved the Locator Lock Slide (Item 106, Fig. 7) into a position where it engages the Tone Arm Locator & Bushing Assembly (Item 12, Fig. 7) and prevents same from bearing against Tone Arm Lever Assembly (Item 19, Fig. 7) allowing the Tone Arm to swing freely without hindrance and without setting Changer into its changing cycle. When the Manual Control button is in the automatic position the Changer will function normally as an automatic record changer.

**2.—POSSIBLE MECHANICAL CAUSES OF POOR RECORDINGS**

(A) Threads from record cuttings getting down onto Rubber Idler wheel (Item 83, Fig. 6) and between drive wheel and motor pulley. This will cause very bad speed variation of the turntable and, of course, will result in very inferior recording. Cuttings may also wrap around motor shaft and cause motor to slow down or stop.

To remove the record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable while the turntable spindle is gently tapped downward on its top end, and the record cuttings then removed. The Rubber Idler Drive Wheel should be taken off—this can be accomplished by un-snapping the small snap cotter ring and slipping Rubber Idler Drive Wheel off its shaft, after which all record cuttings can be removed.

*NOTE: It is very important that no grease or oil be gotten on the surface of the Rubber Idler Drive Wheel.*

(B) *Tight pivot bearings:* Check cartridge pivot screw (Item 108, Fig. 6) for binding. Also recording arm pivot screw (Item 107, Fig. 6) and Traverse arm pivot screws (Item 101, Fig. 8). These bearings should all be free, but have no looseness or play.

If the pivot screw, (Item 108, Fig. 6) of the Cutter Cartridge is tight, the Cutter Cartridge cannot follow a slight up and down variation of the record or turntable. A record cut in this manner will, when played back, have a high scratch level, rough cutting and a tendency for the needle to jump from one groove to another.

(C) *Damaged Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Rubber Idler Drive Wheel may have become damaged by:*

1. Allowing oil or grease to come in contact with same.
2. By allowing turntable to drop and cut into the outside surface of the Rubber Idler Drive Wheel.
3. Stopping the turntable by hand while the motor is running will cause a flat spot on the surface of the Rubber Idler Drive Wheel.

*NOTE: If the Rubber Idler Drive Wheel has been damaged in any of the above mentioned ways, it should be replaced with a new one.*

(D) *Vibration Reaching the Recorder While A Blank is Being Cut:*

It is very important the floor or the surface upon which the Recorder rests remain quiet as any vibration such as people walking across the floor or shaking of the instrument in which the recorder is mounted will seriously affect the quality of the finished recording.

(E) *Recorder Not Level:* It is very important that the Recorder is standing Level. This can be checked by placing a small level on the turntable and checking same in two positions at right angles to each other and then leveling instrument in which Recorder is mounted.

(F) *Bent or Damaged Turntable Spindle:* If the Turntable Spindle (Item 59 Fig. 6) has been bent in shipment, or by someone exerting a heavy pressure on one side, it should be replaced with a new one. A bent Turntable Spindle will cause the surface of the Turntable to move up and down while it is turning and, of course, will seriously effect the quality of both recording and play-back.

*NOTE: When removing the Turntable an even upward lifting force should be applied at opposite edges of the Turntable while Turntable Spindle is gently tapped downward on its top end.*

(G) *Record Cutting Causing A Bind Between Turntable Spindle* (Item 59, Fig. 6) *and Its Bearing:*

It is very important that all record cuttings are removed from Turntable Spindle and its bearing.

(H) *Tension On Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Too Great:*

If the tension on the Rubber Idler Drive Wheel is too great, this will result in a "wow" or a rumble in the recording. To decrease the tension on Rubber Idler Drive Wheel, loosen the screw holding the lug which is located beneath the Rubber Idler Drive Wheel and turn it slightly in a clockwise direction. This will reduce the spring tension on the Rubber Idler Drive Wheel. When the spring tension is correct, the spring will be approximately at right angles to the lug.

(I) *Tension On Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Too Weak:*

This will cause very bad speed variation. Turntable will slow down and then speed up as audio current of varying intensity reaches the cutter cartridge.

**RECORDER AS USED IN MODEL 33BG**

(a) *Possible Mechanical causes of Poor Recordings.*

Thread from record cuttings getting down on to Turntable Drive Wheel (Fig. 4, Section I). This will cause very bad speed variation of turntable. Cuttings may also wrap around motor shaft and cause motor to slow down or stop. To remove record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable. The rubber drive wheel should be taken off—Remove hairpin retainer and fibre washer and left wheel off, remove all cuttings and replace wheel.

*NOTE: It is very important that NO GREASE or OIL be gotten on the surface of the rubber on drive wheel.*

*Turntable Drive Wheel may become damaged by—*

1. By permitting turntable to drop and cut into the outside surface of the rubber drive wheel.
2. Stopping the turntable by hand while the motor is still running is liable to cause a flat spot on the surface of rubber drive wheel.
3. Permitting oil or grease to come in contact with the rubber surface of drive wheel.

*NOTE: If the rubber drive wheel has been damaged in any of the above ways, replace with a new one.*

(b) *Mechanical Vibration Transmitted to Recorder while a record is being cut.*

It is VERY IMPORTANT THAT THE BASE UPON WHICH RECORDER RESTS REMAINS QUIET, as any vibration such as people walking across the floor or shaking of instrument will seriously affect the quality of the finished recording.

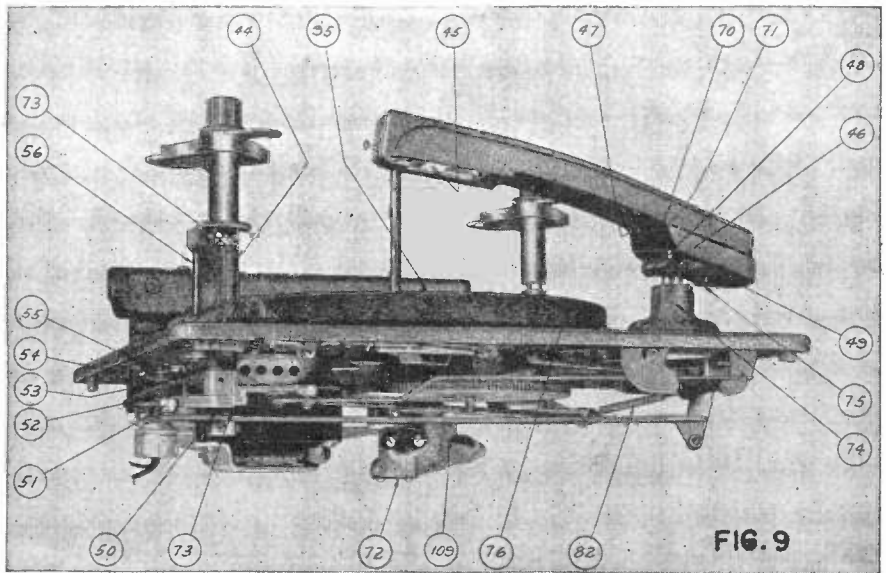
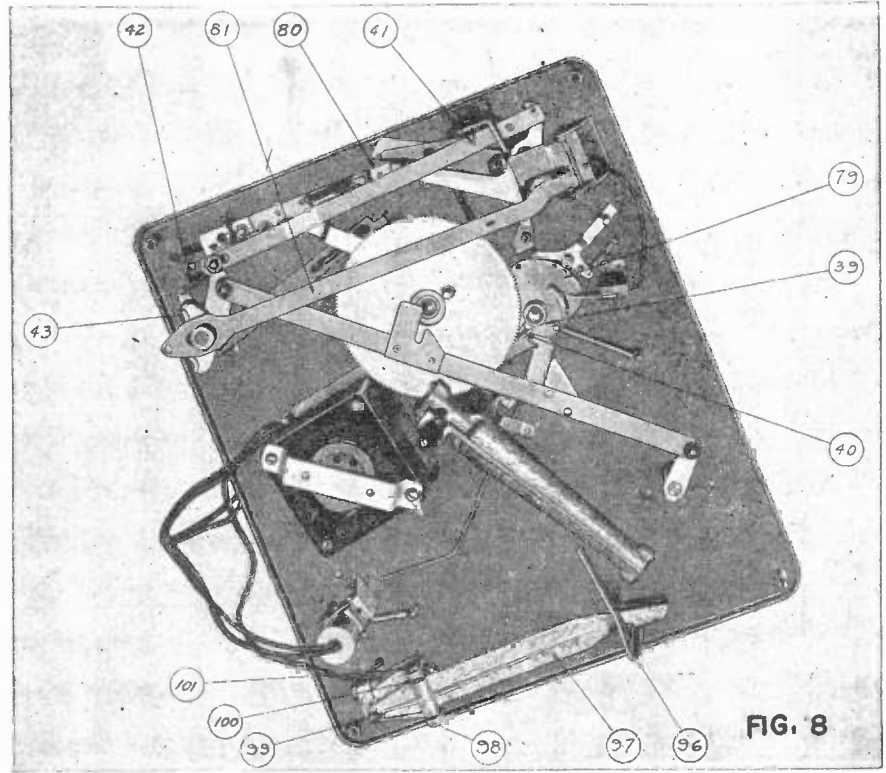
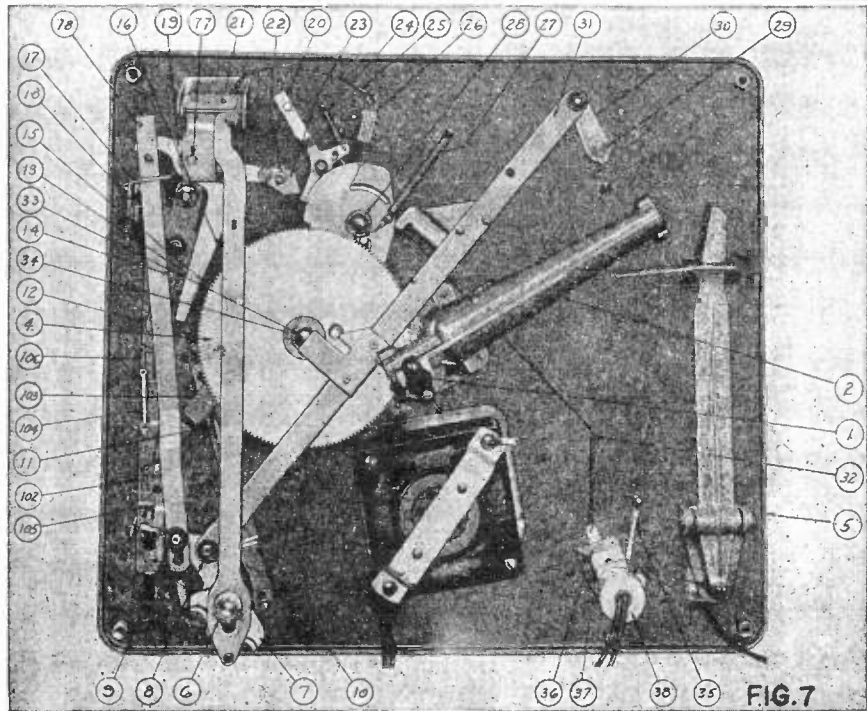
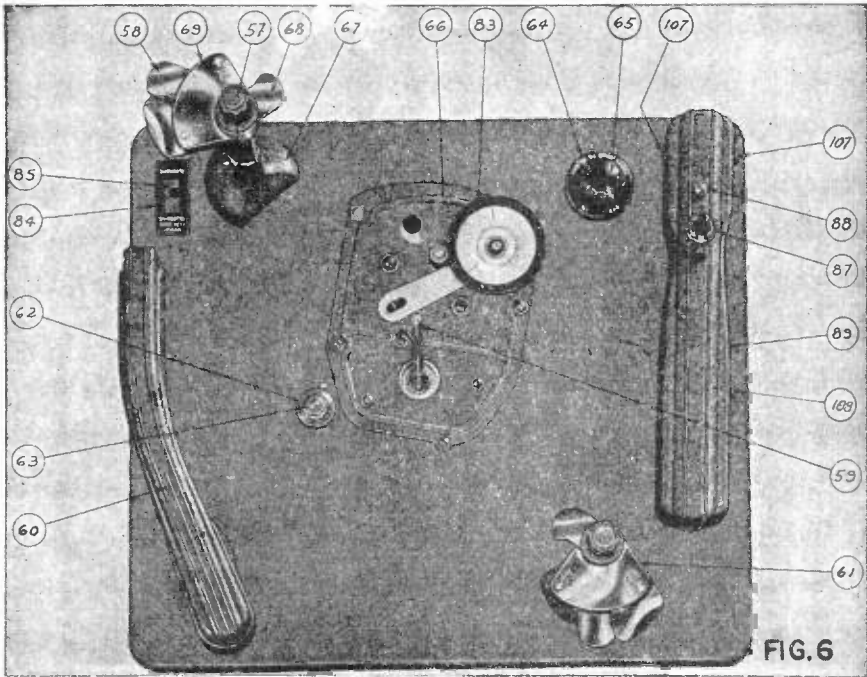
(c) *Recorder Not Level.*

It is very important that recorder is standing level. This can be checked by placing a smooth marble on uncut record.

(d) *Tension On Turntable Drive Wheel.*

If the tension on the rubber drive wheel is too great the usual result is a rumble in the recording. To decrease the tension on the drive wheel, loosen screw holding the tension spring lug, located beneath the drive wheel and turn lug a few degrees in a clockwise direction.

If the tension on the rubber drive wheel is too weak, a very marked change in the turntable speed will be noted during cutting operation. To increase tension move the tension spring lug a few degrees in a counter-clockwise direction.



## SEEBURG WITH RECORDER (1940)

(Parts List for Fig. No. 6)

Item No.	Part No.	Description	No. Used	Item No.	Part No.	Description	No. Used
57	130727	Control Knob	2	107	130967	Bearing Center Screw	1
58	130728	Selector Blade (10")	2	108	130968	Cartridge Pivot Screw	1
59	130957	Turntable Spindle	1	<b>(Parts List for Fig. No. 5)</b>			
60	130958	Tone Arm	1	89	130854	Cutter Cartridge	1
61	130731	Selector Arm No. 1	1	90	130970	Pressure Control Blade	1
62	130732	Special Washer	1	91	130855	Pressure Control Cam	1
63	130733	Drive Gear Stud Lock Nut	1	92	130960	Bearing Center Screw	2
64	130734	Switch Escutcheon	1	93	130969	Bearing Center Screw Lock Nut	2
65	130959	Switch Control Knob	1	94	130819	Tone Arm Adjusting Screw	1
66	130870	Motor Assembly	1		131236	Spring-Upper-Base Mounting	4
67	130737	Record Support Post No. 2	1		131237	Spring-Lower-Base Mounting	4
68	130738	Selector Blade (12")	2		131238	"U" Nut—For Mounting Bolts	4
69	130739	Selector Arm No. 2	1		130981	¼-20 R. H. M. Screws	4
83	130961	Rubber Idler Drive Wheel	1				
84	130962	Manual Control Escutcheon	1				
85	130963	Manual Control Button	1				
86	130964	Recorder Arm	1				
87	130965	Pressure Control Knob	1				
88	130966	Recorder Arm Adjustment Screw	1				

(Parts for Fig. No. 7)

1	130659	Spindle Thrust Plate	1	27	130585	Clutch Spring	1
2	130937	Spindle and Feed Screw Housing	1	28	130686	Flat Washer	1
4	130662	Drive Gear Assembly	1	29	130587	Taper Pin	3
5	130938	Panel, Post and Stud Assembly	1	30	130688	Selector Shaft Drive Crank Assy. Post No. 2	1
6	130664	Selector Shaft Collar	1	31	130689	Drive Link Assy.	1
7	130665	Selector Shaft Crank Assy. Post No. 1	1	32	130690	Trip Rod	1
8	130666	Flat Washer	3	33	130691	Flat Washer	1
9	130667	"C" Washer	3	34	130692	Drive Gear Stud	1
10	130668	12" Set Link	1	35	130593	Switch Spring	1
11	130669	12" Reset Link Spring	1	36	130694	Switch Mounting Bracket	1
12	130670	Tone Arm Locator and Bushing Assy.	1	37	130695	Switch Retainer Bracket	1
13	130671	Tone Arm Booster Spring	1	38	130596	Switch	1
14	130672	Tone Arm Locator Shoe (12")	1	77	130939	Tone Arm Shaft	1
15	130673	Tone Arm Locator Shoe (10")	1	78	130698	Reset Arm Stop Washer	1
16	130674	Tone Arm Locator Spring	1	102	130940	Manual Control Slide	1
17	130675	Tone Arm Latch and Guide Bracket	1	103	130941	Clutch Lock Slide	1
18	130676	Tone Arm Latch Lever	1	104	130942	Locator Lock Slide Spring	1
19	130677	Tone Arm Lever Assy.	1	105	130943	Slide Latch	1
20	130678	Trip Lever Assy.	1	106	130944	Locator Lock Slide	1
21	130679	Tone Arm Lift Plate Assy.	1				
22	130680	Thumb Nut	1				
23	130681	Tone Arm Trip Shoe	1				
24	130682	Trip Lever Spring	1				
25	130683	Shielded Pickup Wire	1				
26	130684	Muting Switch	1				

(Parts List for Fig. No. 8)

39	130699	Clutch Reset Pawl Spring	1	97	130947	Traverse Bushing and Blade Assembly	1
40	130700	Clutch Reset Pawl	1	98	130948	Traverse Lever Bracket	1
41	130701	Latch Lever Shoulder Screw	1	99	130949	Lock Nut	2
43	130702	12" Set Arm Assembly	1	100	130950	Recorder Arm Shaft Sleeve.	1
79	130703	Engagement Clutch Cam Assy.	1	101	130951	Bearing Center Screw	4
80	130704	Tone Arm Reset Link	1				
81	130705	Tone Arm Lifter Link Assy.	1				
42	130945	Set Arm Return Spring	1				
96	130946	Traverse Arm Support Bracket	1				

(Parts List for Fig. No. 9)

44	130706	Record Support Post No. 2	1	70	130719	Tone Arm Adjusting Screw	1
45	131024	Tone Arm Cartridge	1	71	130720	Adjusting Screw Lock Spring	1
46	130708	Tone Arm Swivel Bracket	1	72	130721	Thrust Wafer	1
47	130709	Tone Arm Mounting Bracket	1	73	130722	Thrust Washer	5
48	130952	Tone Arm Lifter Pin	1	74	130723	Ball Race Assy.	1
49	130953	Counter Balance Spring	1	75	130724	Rubber Bumper	1
50	130712	Spring Washer	1	76	130954	Turntable	1
51	130713	Roller	2	82	130726	Tone Arm Lifter Reset Spring	1
52	130714	Switch Return Spring	1	95	130955	Retractable Drive Pin	1
53	130715	Flat Washer	2	109	130956	Feed Screw and Gear Assy.	1
54	130716	Switch Reject Slide	1				
55	130717	Switch Collar and Reject Pin Assy.	1				
56	130718	12" Set Rod	1				

## TONE ARM INDEXING

1. With the switch knob in the "off" position, move the tone arm to the "rest" position so that its outer edge is approximately lined up with the extreme outside edge of the record changer panel.
2. Loosen the hex-head cap screw on the under side of the record changer panel (see Fig. II, Item 28) slightly.
3. Line up the outer edge of the tone arm with the outer edge of the record changer panel by eye. This is a preliminary adjustment to obtain approximately correct indexing.
4. Place a 12" record on the turntable, put the machine into automatic operation by pulling the switch knob to the "Reject" position and releasing it and note the point at which the needle FIRST strikes the margin of the 12" record. (The word "first" is used to indicate the fact that after the needle has touched the record, the booster spring will attempt to move the needle in toward the center. Proper setting of the tone arm indexing position is concerned only with the point at which the needle first makes contact with the record; for this reason it may be advisable to slow down the movement of the tone arm by partially holding the turntable so that the action may be more readily observed during adjustment.)
5. If the needle did not strike the record approximately an eighth of an inch in from the outside edge, move the tone arm in the desired direction a slight amount by slipping the tone arm lever (see Fig. II, Item 25) which has been previously loosened at the hex-head cap screw (see Fig. II, Item 28).
6. After obtaining a correct indexing of the tone arm on the 12" diameter records, check the indexing on a 10" diameter record and tighten the hex-head cap screw firmly.

NOTE: . Incorrect action of the booster spring or Tone Arm Retard Lever may produce the effect of improper tone arm indexing.

## A. NEEDLE PRESSURE

The needle pressure is controlled by means of the counter-balance spring (see Fig. VI) at the rear of the arm. The spring tension has been set to provide the needle pressure necessary for correct operation of the pickup. Should it be necessary to make adjustment of this counter balance spring, it is generally advisable to contact your factory service department for the correct needle pressure; be sure to include the part number stamped on the under side of the crystal cartridge and the model number of the set. Care should be taken that the counter-balance spring does not rub against the inside of the tone arm skirt or any associated parts in such a way that it impedes or binds the free vertical movement of the tone arm. (CAUTION: It is a popular fallacy that it is possible to prolong needle and record life by reducing the needle pressure on a given pickup below those pressures recommended by the manufacturer. Any such attempt will probably increase record and needle wear as well as seriously impair the tone quality of the instrument. The correct needle pressure is a function of the crystal and tone arm design and cannot be satisfactorily changed for a given set of component parts.)

## B. TONE ARM HEIGHT ADJUSTMENTS

The Tone Arm Height Adjustment Screw (Fig. VI) controls only the height of the tone arm when it is in the playing position with no record on the turntable. The correct setting of this adjustment screw is that which, under the above condition, allows the tone arm to descend until the needle point is very slightly below the level of the turntable surface.

The Tone Arm Adjustment Screw should not be used to adjust the height to which the tone arm rises during a change cycle; this height is controlled solely by the length of the Tone Arm Lift Pin (Fig. VI).

## C. TONE ARM HINGE ADJUSTMENTS

Should the tone arm hinge show evidence of binding or impeding the free vertical movement of the tone arm, it may be necessary to replace this part (Fig. III, Item 58) (as pointed out above, binding may also be due to rubbing of the counter-balance spring).

## A. MINIMUM CIRCLE DIAMETER TRIP

After the tone arm has played in far enough so that the distance of the needle from the center spindle is approximately 1-7/8",

the record changer will trip regardless of whether or not there is a cutoff or eccentric groove on the record. This type of trip is known as "a minimum diameter circle trip." The diameter of this minimum circle is set at the factory to be approximately 3-3/4". Variations in adjustment or readjustment of this operation can be obtained by moving the position of the trip shoe (see Fig. II, Item 29) slightly. The trip shoe is locked in position by means of a screw when the adjustment has been satisfactorily completed. This screw must be adjusted thru a hole cut in the main drive gear, when the machine is not in a change cycle. (See point e, Fig. I.)

#### B. ECCENTRIC GROOVE TRIP

In order to make the trip action of the changer mechanism operate under various conditions, a second tripping device has been included which operates due to any outward movement of the tone arm after it has played to within approximately 2-1/2" of the center spindle. This trip is actuated by a small dog and ratchet combination (see Fig. II, Item 44) and is adjusted at the factory.

#### A. BOOSTER SPRING SETTING

The function of the booster spring (Fig. II, Item 30) is to move the needle from the margin of the record into the first groove automatically. Most present day records have what is known as a "lead-in groove" which automatically carries the needle from the margin of the record into the record grooves. In the case of the older type records, and particularly those of the mechanically recorded type which have no lead-in grooves, the booster spring supplies just enough pressure to move the needle across the margin to the record grooves. This booster spring is built into the tone arm locator lever (see Fig. II, Item 31) and consists of a single piece of light spring wire (see Fig. II, Item 30). The side pressure exerted by this spring should be just sufficient so that the needle will move across the margin of a record which contains no lead-in groove. After any adjustment of this booster spring, check its operation on both 10" and 12" records to make sure that it functions properly. Do not increase the operating pressure of the booster spring to such a point that it tends to make the needle slide across the first few record grooves. Access to the booster spring can be obtained when the tone arm is in the "Rest" position, with the switch knob turned off, by moving the tone arm locator lever assembly out toward the edge of the changer sub-panel with the finger. Adjustment of the spring tension

should be made with a pair of light pliers or with the fingers. The tension, measured at the point of contact between the booster spring (Fig. II, Item 30) and the tone arm lever (Fig. II, Item 25) is set at the factory to values between seven and fifteen grams depending upon the type of needle and cartridge used (cartridges requiring extremely light needle pressure also require a light booster spring tension.) CAUTION: The Shielded Pickup Lead Wire (Fig. II, Item 22) must have sufficient slack between the tone arm and the point where the tone arm lead enters the sub-panel to permit free sidewise movement of the tone arm; otherwise the action of the booster spring may be overcome or overemphasized. This lead must be checked before attempting any booster spring adjustments.

#### B. TONE ARM RETARD LEVER ADJUSTMENTS

The function of the Tone Arm Retard Lever (Fig. II, Item 49) is to provide a smooth motion of the tone arm as it moves from the outer edge of the panel in towards the edge of the record to be played, during an automatic change cycle.

An additional function of the tone arm retard lever is to prevent action of the booster spring (Fig. II, Item 30) until the needle has lowered onto the outer edge of the record to be played. Insufficient tension of the Tone Arm Retard Lever Spring (Fig. II, Item 47) will permit action of the booster spring before the needle comes to rest on the record, giving the effect of incorrect tone arm indexing. Excessive pressure of the tone arm retard lever spring will cause rough, jerky action of the tone arm as it moves from the outer edge of the changer panel.

#### "SELECTOR ARM" ADJUSTMENTS

Under all ordinary conditions it should not be necessary to make any adjustment of the selector blades themselves. Should such an adjustment become necessary it can best be accomplished by using a standard make of record of the proper diameter and of average thickness for gauging the selector blades (Fig. III, Items 54 and 55). The setting of these blades can be accomplished by means of a pair of long nosed pliers and is correct when the blades lift slightly upon engaging a record of average thickness.

The position of the selector arm (Fig. III, Item 54) controls the tone arm indexing for 10" or 12" records through its engagement with the 12" set rod at point "k" (Fig. III). Motion of the 12" set rod is transmitted

through the changer base panel to the 12" reset lever (Fig. II, Item 37). Sufficient tension is provided through the spring (Fig. II, Item 38) to maintain a hooking action between two levers (Fig. II, Item 31 and 37) at point "p". This is to prevent the tone arm locator lever and also the tone arm from sweeping toward the center should the 12" setting of the selector arm be changed while the tone arm is playing on the outside of a 12" record.

A. "FEEDBACK" OR "HOWL" OR "MICROPHONISM"

1. Inspect the under side of the panel to make sure that the changer does not come into contact with any part of the cabinet at any point other than at the four corners where it rests on the mounting springs. Also check to be sure that the studs (Fig. I, Item 14) do not rub against the side of the holes of the cabinet panel.
2. A tendency toward microphonism may be due to any one or all of the four mounting springs being drawn down too tightly; loosening these mounting springs will reduce any tendency toward feedback.

It should be remembered that there is no disadvantage in any phonograph equipment which tends to become microphonic at volume control settings above those in the usable range. That is, if the set does not feed-back up to the volume control settings at which distortion appears when playing an average record, it will operate satisfactorily.

B. "RUMBLE"

1. Remove the turntable and inspect the rubber rimmed motor idler pulley (Fig. IV, Item 66) for flat or worn spots which would tend to jar the turntable.
2. With the turntable removed, rotate the turntable spindle to be sure that it turns smoothly.

"WOW" OR "SPEED VARIATION"

1. Remove the turntable and rotate the turntable spindle (Fig. II, Item 40) with the fingers to determine whether it tends to bind. High friction at this point may be sufficient to cause the motor to slow down instantaneously. Apply ONLY a drop or two of light oil to the two spindle bearings. If the turntable shaft is bent to such an extent that replacement is necessary, it is recommended that the entire

Spindle and Pinion Gear Assembly (Fig. II, Item 39, Also Fig. V) be replaced instead of replacing only the spindle assembly. This Spindle and Pinion Gear Assembly (see Fig. V) is fitted with precision machines at the factory, thus insuring proper clearances and smooth operation.

D. REPEATED TRIPPING

1. Turn off the changer during a change cycle so that the clutch engagement lever (Fig. II, Item 41) may be moved up and down with the finger. This clutch engagement lever should lock into the up position due to its engagement with the trip lever (Fig. II, Item 44) at the point "m". If this engagement is not positive, inspect the bearing point of the trip lever (Fig. II, Item 44) for evidences of dirt or binding. A more positive engagement may be obtained by strengthening the spring (Fig. II, Item 50). CAUTION: This spring tension must be JUST SUFFICIENT to lock the clutch engagement lever in the up position. Excessive tension of the spring will result in failure to trip.

2. Repeated tripping may also be due to the fact that the switch knob does not return to the "Automatic" position when released. This condition can result from binding of the roller lever (Fig. I, Item 6) on its bearing, insufficient tension in spring (Fig. I, Item 9), or excessive friction or binding in the motion of the control lever (Fig. II, Item 36).

E. FAILURE TO TRIP

1. Turn off the changer during a change cycle so that the clutch engagement lever (Fig. II, Item 41) may be actuated with the finger while the trip lever is being held away, so that the engagement lever does not lock in the "up" position. The clutch engagement lever must not stick in the up position due to binding at any point. CAUTION: It is not advisable to use any lubricant at the bearing point of the clutch engagement lever (Fig. II, Item 51); this bearing is intended to be a loose fit, run dry, and operate due to gravity.

2. Excessive pressure on spring (Fig. II, Item 50) would tend to make the needle jump out of the cut-off groove of the record (see paragraph D-1 above) and prevent tripping.
3. The Shielded Pickup Lead Wire (Fig. II, Item 22) must have sufficient slack between the tone arm and the point where the tone arm lead enters the sub-panel to permit free sidewise movement of the tone arm. The Shielded Lead should be so positioned that it loosely rests near the tone arm post immediately below the point at which it leaves the tone arm bracket. Under no circumstances should the Shielded Wire be fastened in place, pulled taut, or restrict free tone arm movement. This is particularly important in machines which use extremely light pressure pickup cartridges.

F. INSUFFICIENT POWER TO COMPLETE A CHANGE CYCLE

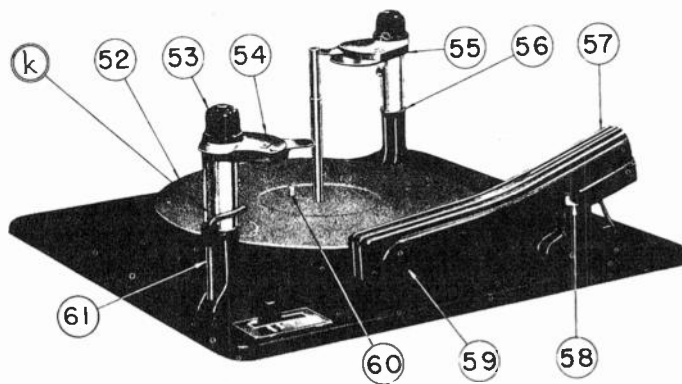
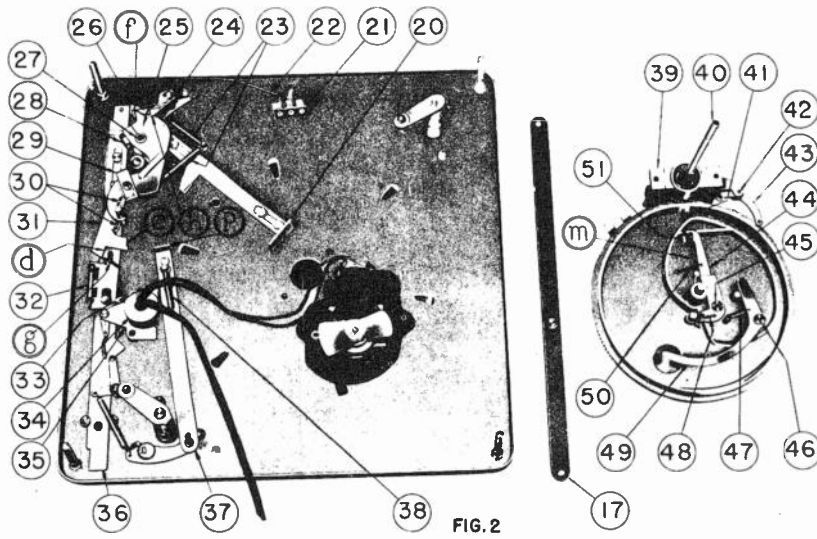
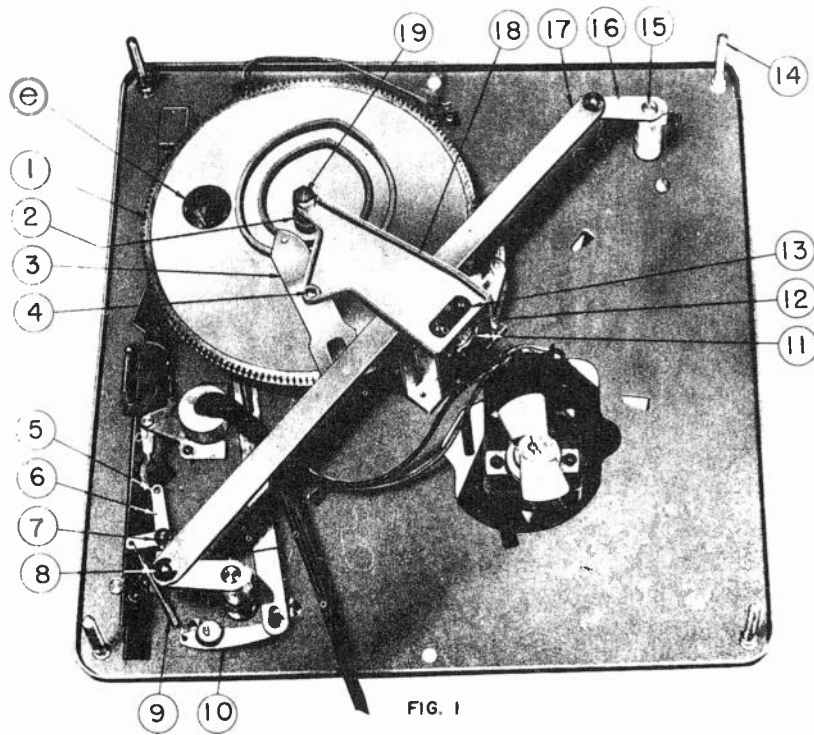
1. Inspect the bearing of the main drive gear (Fig. I, Item 1) for excessive friction or binding.
2. Inspect the selector arm bearings for excessive friction or binding.

G. JAMMING OF THE MECHANISM

1. Should the changer jam at any time during a change cycle for some reason other than jamming of the selector arms with the records being changed, remove the records and attempt to free the machine by rotating the turntable in a reverse direction through a quarter turn. If the jam is apparently cleared by such action, the machine should be checked by operating it automatically several time, but with no records.
2. If the jam does not clear by rotating the turntable in a reverse direction, inspect the underside of the changer panel for damaged or missing parts.
3. Inspect the meshing of the drive gear (Fig. I,

Item 1) with the pinion gear (Fig. I, Item 11). If the two gears do not mesh (that is, if they are not so timed as to fit together properly) it is probably due to the fact that the clutch engagement lever (Fig. II, Item 41) has been damaged or bent. This clutch engagement lever is intended to so contact one of the lower projections on the pinion gear (Fig. I, Item 11) that the teeth of this pinion gear (Fig. I, Item 11) and the teeth of the main drive gear (Fig. I, Item 1) be timed to fit together properly whenever the mechanism starts a change cycle. If the clutch engagement lever (Fig. II, Item 41) is bent, it may be straightened until, by trial, the two gears mesh properly when the changer is tripped. It is advisable that the changer mechanism be operated by hand so that this timing or meshing between the two gears can be more closely observed during any adjustments or inspections.





SEEBURG (1941 & 1942)

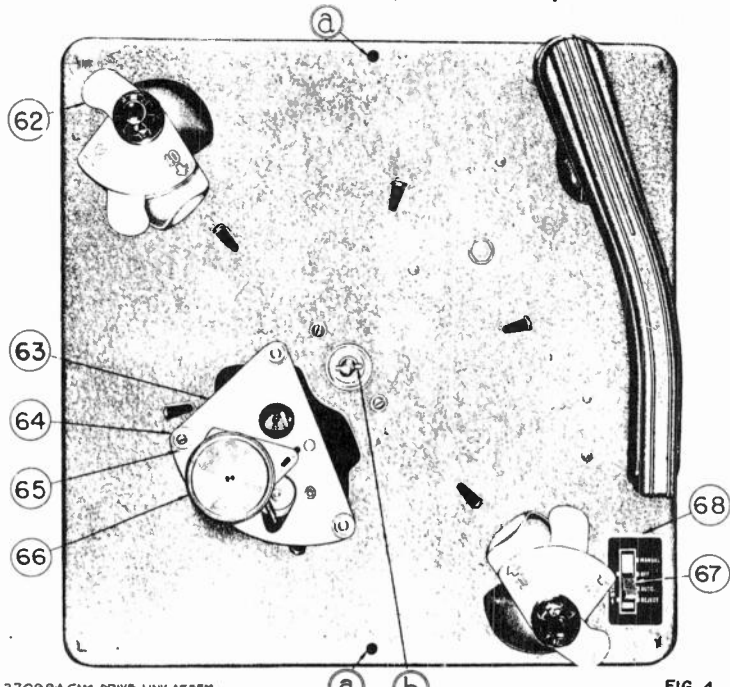
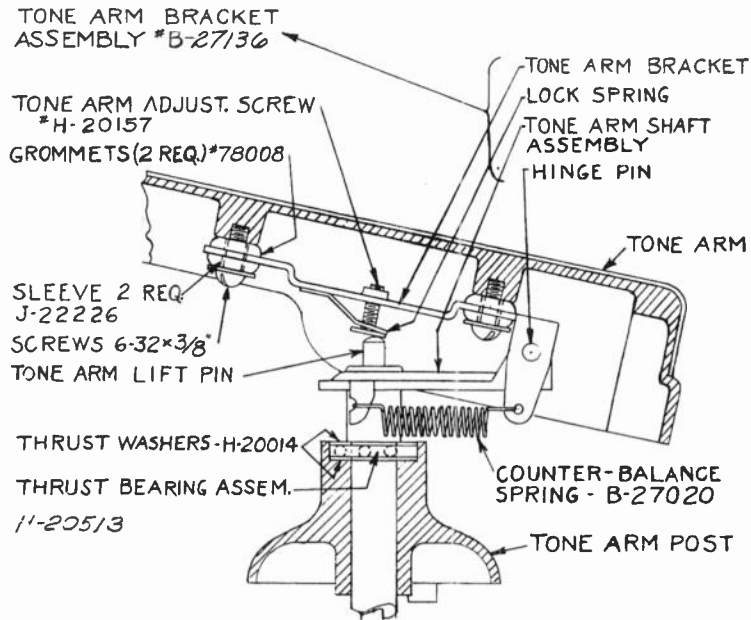
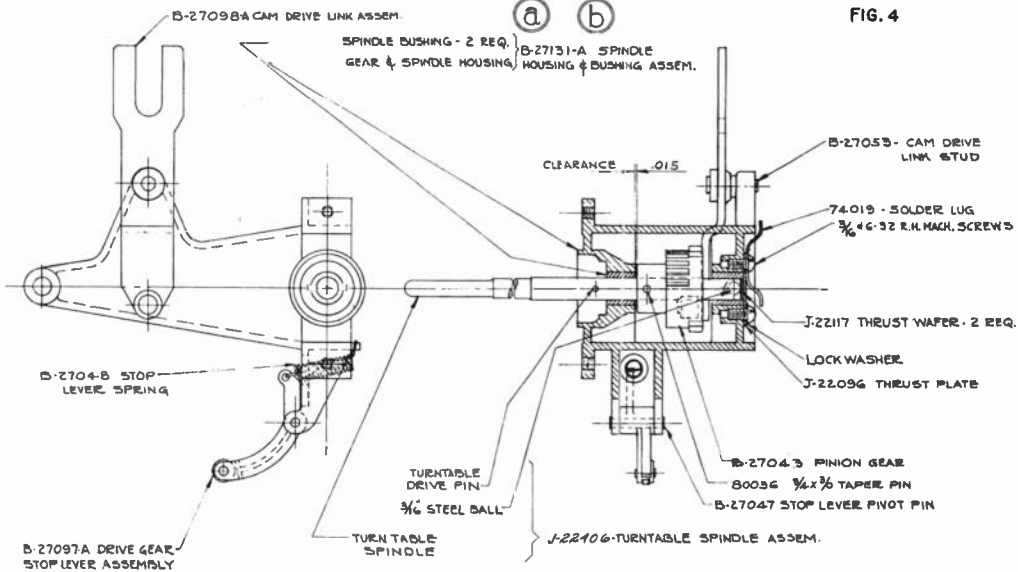


FIG. 4



## SEEBURG RECORD CHANGER PARTS LIST 1941-42

Item No.	Part No.	Description
1	133856	Drive Gear Assy.
2	133857	Fiber Thrust Washer
3	133858	Cam Drive Link Assy.
4	133859	Cam Drive Link Stud
5	133860	Roller
6	133861	Roller Lever Assy.
7	133862	1/8" Snap Washer
8	133863	3/16" Snap Washer
9	133864	Roller Lever & 12" Set Arm Spring
10	133865	12" Reset Arm Assy.
11	133866	Pinion Gear
12	133867	Stop Lever Spring
13	130659	Thrust Plate
14	133868	Panel Mounting Stud
15	133869	Selector Shaft Assy.
16	133870	Drive Crank Assy.
17	133871	Drive Link Assy.
18	133872	Spindle Housing & Bushing Assy.
19	133873	Drive Gear Shaft
20	133874	Manual & Reject Lever
21	133875	Terminal Strip
22	130683	Shielded Wire
23	130674	Tone Arm Locator & Latch Spring
24	133876	Tone Arm Latch Lever
25	133877	Tone Arm Lever Assy.
26	133878	Connecting Link
27	133879	Tone Arm Lift Pin
28	133880	Cap Screw 1/4"-20
29	133881	Trip Shoe
30	130671	Booster Spring
31	133882	Tone Arm Locator Assy.
32	133883	Upper Slide Spring
33	133884	Lower Slide Spring
34	133885	A.C. Switch
35	133886	Switch Plate Assy.
36	133887	Control Lever Assy.
37	133888	12" Reset Lever
38	130669	12" Reset Lever Spring
39	133889	Spindle & Pinion Gear Assy.
40	133890	Turntable Spindle Assy.
41	133891	Clutch Engagement Lever
42	133892	Stop Lever Pivot Pin
43	133893	Drive Gear Stop Lever Assy.
44	133894	Trip Lever Assy.
45	133895	Trip Lever Shoulder Screw
46	133896	Retard Lever Shoulder Screw
47	133897	Retard Lever Spring
48	133898	Trip Dog Spring
49	133899	Tone Arm Retard Lever
50	133900	Trip Lever Spring
51	133901	Clutch Engagement Lever Pin
52	133902	Turntable
53	133903	Control Knob
54	133904	Selector Arm & Blade Assy. #1
55	133905	Selector Arm & Blade Assy. #2
56	130722	Thrust Washer
57	133906	Tone Arm
58	133907	Tone Arm Mounting Assy.
59	132738	Crystal Cartridge
60	133909	Retractable Pin
61	130718	12" Set Rod
62	130738	12" Selector Blade
63	133910	Motor Assy.
64	133911	Motor Mounting Bushings
65	133912	Motor Grommet
66	133913	Motor Idler Pulley
67	133914	Switch Control Knob
68	133915	Control Escutcheon
	133916	Steel Ball
	133917	Solder Lug
	133918	Taper Pin
	133919	Turntable Drive Pin
	130659	Thrust Plate
	130721	Thrust Wafer
	130729	Turntable Spindle
	133866	Pinion Gear
	133892	Stop Lever Pivot Pin
	133867	Spring
	133859	Cam Drive Link Stud
	133893	Drive Gear Stop Lever Assy.
	133858	Cam Drive Link Assy.
	133872	Spindle Housing & Bushing Assy.
	133922	Grommet
	130722	Thrust Washer
	130719	Tone Arm Adjusting Screw
	130723	Thrust Bearing Assy.
	133923	Sleeve
	133920	Counter Balance Spring
	133921	Tone Arm Bracket Assy.
	134021	Upper Mounting Spring
	131237	Lower Mounting Spring
	131238	Special Clamp Nut
	134123 - 132968	25 Cycle 110 volt Motor

## NEW PRODUCTS

### OPERATION

Index letters are alphabetically arranged to facilitate rapid locating of parts. Prefix letters are in illustration as follows: A in photo of top of record changer, B & C in photo of the bottom.

The capacity of the instrument is ten 12" or twelve 10" records.

To load, turn the storage shaft AF so that the bent portion points towards the front of the instrument. Then slip a selected stack of records onto the shaft, turn the shaft to point to the rear, and allow the pack of records to rest on the notch in the shaft and also on the ejector.

To start the instrument, turn on the switch AP, which will rotate the turntable. Then press down on the tone arm, AL momentarily and release at once. This depresses the reject button AD on top of the tone arm rest post, and starts the cycle, which will automatically repeat until the entire stack of records has been played.

To change records anytime while the record is playing, merely press down on the reject button AD on top of the tone arm rest post.

To play records one by one, remove storage shaft by lifting straight up. On models having a manual position indicated, turn the button on top of the tone arm rest post to the right. This locks the cycling mechanism during manual operation. Do not turn the button on models not having this feature clearly marked. To return to automatic operation, merely turn the button to the left (counter clockwise) approximately one-quarter turn.

### DESCRIPTION OF CYCLE

To start the cycle on models with a switch on the base plate or on the radio control panel, turn on the switch and press down on the tone arm. This depresses the reject button AD on top of the rest post, which in turn through trip link CE engages the follower CA, starting the cycle.

When follower CA engages in worm BC, follower arm CB is pivoted at CG lifting crank CR which raises tone arm AL. Crank CR is fastened to the lift pin. As this rises and strikes the incline at the angular upper end of the index plate CP, it causes a rotation of the crank CR which in turn contacts the crank pin CT fastened to the tone arm shaft and swings the tone arm AL inward until the crank CR strikes index plate CP. Then as the follower CA returns to its starting position, the crank CR drops, setting the tone arm AL on the record.

The set down position for 10" or 12" records is automatically controlled when the ejector is positioned so that the edge of the 10" or 12" records rest on the support bracket. The record ejector AC can be set in the 10" or 12" position by merely slightly lifting it and pulling or pushing it in or out until the 10" or 12" numbers show at the edge of the opening in the housing.

### ADJUSTMENTS

To adjust the set down position of the tone arm, trip the reject button AD, turn the turntable AH by hand until the crank CR strikes the index plate CP, loosen the clamp screw slightly, move the tone arm AL over until it is directly above the first groove in a record of the size indicated on the ejector slide AC. Then retighten the clamp screw, and carry the mechanism through the remainder of the cycle.

To adjust the center trip loosen the nut on the trip adjustment screw CK, move the tone arm in toward the center to a point  $1\frac{1}{8}$  inches from center, adjust CK until it barely touches the trip cam CH, and tighten the nut to lock the screw in position.

Should the trip cam CH come loose from the trip link CE, the fish hook end of CE should be held away from the worm BC against the edge of the hole in the follower CA, and with the trip cam CH just touching the end of the reject pin CM tighten the trip cam set screw.

The ejector arm adjusting screw at BA controls the amount of stroke of the ejector AC, and should be screwed up far enough to just release the bottom record of a stack of ten 12" records in cycle. Then tighten the locknut at BA. The trigger adjustment BL controls the location of the ejector AC and should be screwed up until the ejector AC is approximately  $\frac{1}{8}$ " from the edge of a record. Then tighten the lock nut.

### REPLACING MOTOR

Remove idler wheel AG and the three motor mounting nuts AM. Be sure to save metal bushing spacers, which slip inside of rubber grommets. These prevent rubber from being squeezed out of shape which would prevent proper cushioning of motor. Place motor of proper rating in same position as present motor and replace spacers, washers and screws as before.

### NEEDLE PRESSURE

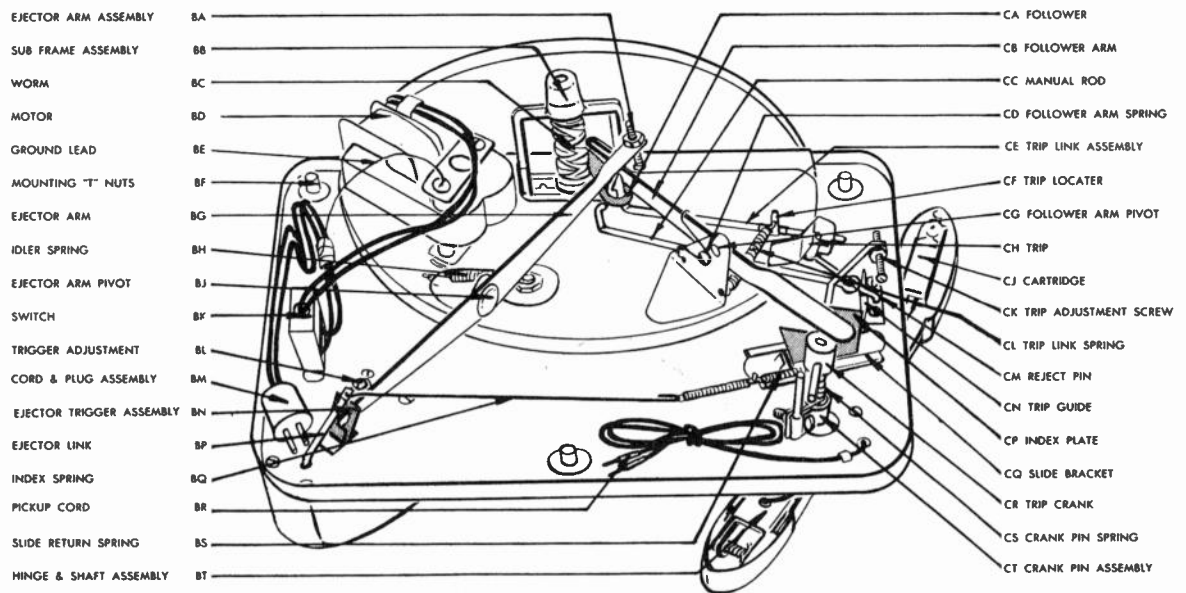
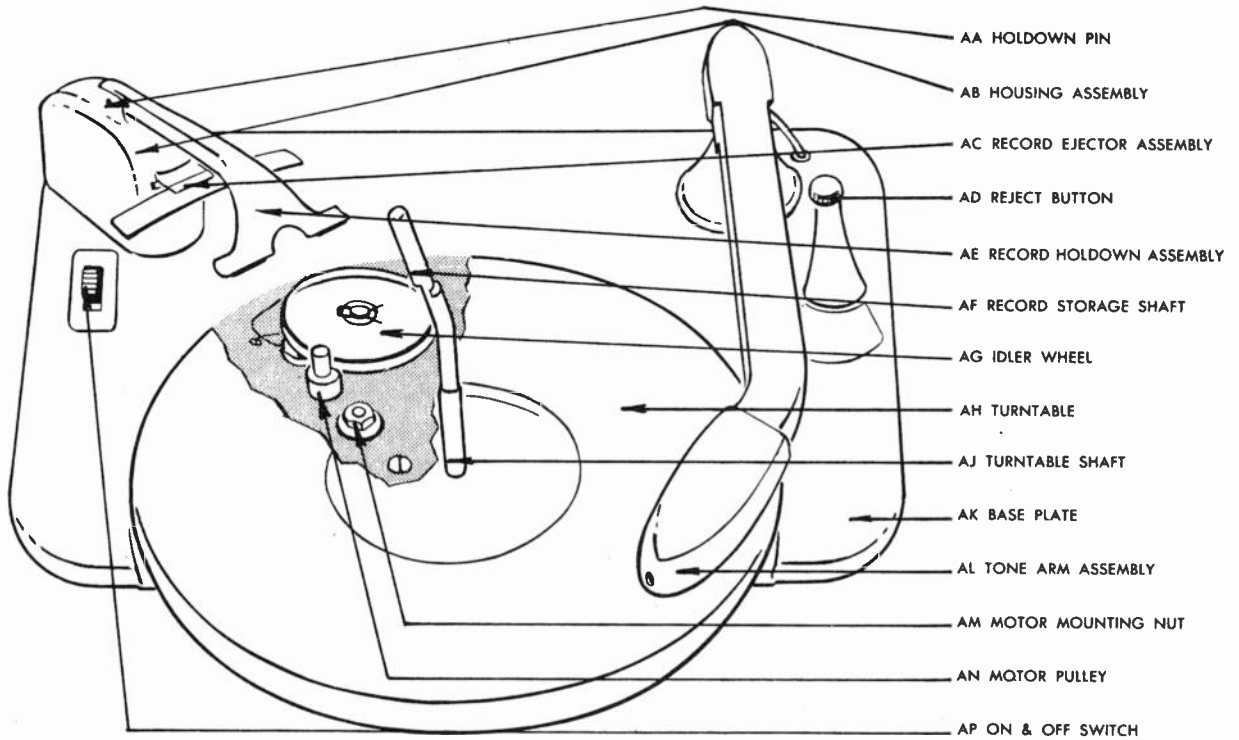
To increase the weight on the needle, should it jump grooves or slide across the grooves too easily, lift the tone arm, and relieve the spring tension by releasing the small sprocket wheel a quarter turn at a time.

Conversely, should the records and needle wear too fast, increase the spring tension with the sprocket to decrease the needle pressure.  $1\frac{1}{2}$  ounces to  $1\frac{3}{4}$  ounces pressure will operate satisfactorily.

### LUBRICATION

No lubrication should be necessary. However, in case of squeaks or stiffness of operation a drop of any good light machine oil on each of the bearings on the spindle worm and at other pivot points should be applied. Also, a light application of grease to the worm itself might help.

# NEW PRODUCTS



## NEW PRODUCTS

1. KEEPS REPEATING ON TOP OF WORM -- Bend trip latch back slightly so trip spring does not exert so great a pressure on worm follower. It may be necessary to first loosen set screw on trip can. If this does not correct trouble, check follower arm to make sure it is straight and bend slightly, if necessary.
2. KEEPS REPEATING ON BOTTOM OF WORM -- Bend follower arm to straighten.
3. NOISE WHILE CYCLING -- This trouble is caused by the follower arm being bent out of position. Straighten arm.
4. FLUTTERING FOLLOWER WHILE PLAYING -- Check to see if follower arm is all the way up to top of worm; if not, bend arm slightly in toward worm to stop binding.
5. LIFT PIN SLIDES OFF FOLLOWER ARM -- Bend follower arm to center it over lift pin.
6. FOLLOWER ARM BINDS -- Bend follower arm away from fulcrum at both sides of rivet.
7. DOES NOT CYCLE WITH REJECT BUTTON -- Check to see if trip latch is releasing follower. If trip latch releases cam follower but it will not center threads of worm, bend follower arm.
8. DOES NOT CYCLE ON CENTER TRIP -- Check adjustment of trip. If follower is being released, bend arm as above. If follower is not being released, readjust trip.
9. FOLLOWER JAMS -- Bend follower arm to straighten.
10. TURNTABLE RUBS -- Loosen set screw on worm with Allen wrench and raise spindle about 1/16".
11. MOTOR SLOWS DOWN DURING CYCLING -- Bend paddle end of follower arm down slightly or set ejector screw back a little.
12. IMPROPER SET DOWN ON RECORD -- Loosen tone-arm crank screw and turn tone-arm slightly in proper direction if arm is 1/8" or more off.
13. CENTER TRIP TOO FAST OR SLOW -- Readjust trip screw.
14. RECORD DROPS ON TONE ARM -- Bend back end of follower arm up slightly. Make sure ejector screw is adjusted properly.
15. WILL NOT DROP RECORDS -- Set ejector arm screw slightly higher. Always check on full stack of 10-12" records. Adjust Screw So Bottom Record Will Just Fall.
16. IMPROPER ADJUSTMENT OF LEDGE -- Adjust position of ledge so it is about 1/16" back of records by means of screw located under ejector housing.
17. SHORT -- Remove switch cover and bend lugs so they do not touch cover.
18. CRANK ARM BENT -- Be sure crank arm is straight or set-down will be off on high stack of records.

### PARTS LIST

Part No.	Description	Part No.	Description
133819	Fibre Washers	133838	No. 8 Lock Wash. External
133821	Clip Rivet	133839	Screw 10-32
134442	A.C. Cord Plug	133840	Nut 10-32
134441	A.C. Cord Plug Cover	133841	Type Z Screw
133822	Motor Cord Clamp	134345	Reject Button
W-134375	Pickup Crank Spring	134443	Service Manual
W-134456	Counterbalance Sleeve	W134387	Hold Down Pin
W-134457	Pressure Adj. Wheel	W-133524-1	1/2-20 x 1 5/8" Stud
W-29614-2	Wing Nut	133846	Trigger Assy.
W-134376	Slide Spring	133847	Ejector Slide Assy.
W-134458	Housing Spring	W-134469	Index Slide Assy.
W-134459	Trip Screw 8-40	133848	Sub Frame Assy.
W-134460	Nut 8-40	W-134470	Turntable Shaft Assy.
W-133525-1	Mounting Washer	133849	Storage Shaft Support Shaft
W-134461	Motor Assy.	133851	Reject Post Assy.
W-134377	Pickup Cord	W-134471	Hinge & Shaft Assy.
133824	Pickup Wire Clip	W-134472	Clamp Assy.
W-134378	Switch	133852	Clamp & Pin Assy.
W-134379	Turntable	W-134473	Indexing Assy.
W-134380	Wheel	W-134474	Hinge Assy.
W-134381	Idler Spring	133855	Housing Assy.
133825	Screw 8 x 1/2 Type Z	W-134475	Trigger & Spring Assy.
W-134382	Nut	134439	Reject Shaft
W-134462	Needle Set Screw	W-134393	Trip Link Assy.
133845	Motor, Pulley, & Screw	134425	Crank
W-134463	Cartridge Screw	W-134389	Trip Guide
133844	60 Cy. Pulley & Set Screw	W-134477	Lead Weight
W-134383	50 Cy. Pulley & Set Screw	133427	Counterbalance Spring
133843	Type NI-5 Cartridge	W-134476	Crank Assy.
W-134464	Slide Bracket	W-134390	Trip
133826	Follower Arm	133426	Lift Pin
W-134465	Shaft Clamp	W-134478	Crank & Pin Assy.
133827	Ejector Arm	W-134394	Hold Down Assy.
W-134466	Pickup Hinge	W-134479	Ejector Arm
W-134467	Index Slide	W-134391	Screw & Nut
W-134384	Worm	W-134392	Index Spring
133828	Pickup Post	W-134480	Follower Arm Assy.
133829	Follower	134032	Changer with Needle Has 12-3/4
133830	Follower Arm Spring		Inch Shielded Connecting Leads
133831	Crank Spring	134420	Changer with Needle Has 21-1/2
134440	Reject Spring		Inch Shielded Connecting Leads
W-134468	Bearing	133542-1	Same as 134032
W-133523-1	Mounting Spring	133542-3	Same as 134420
W-134385	Ejector Link	134538	Follower Guide Spring
133835	Rivet	134539	Fulcrum
133837	Screw #6 Type Z		

Please note that there are three types of follower arms, and they are not interchangeable.

1. W-133827-- R667 Follower Arm, which is the original and does not have a bushing at the fulcrum.
2. W-134480-- R898 Follower Arm, which is second type having a die cast bushing at fulcrum.
3. W-134535-- R899 Follower Arm, which is straight throughout its length and the fulcrum point is somewhat shorter than the other two.

## CAPEHART (USED ON MODEL 639 M)

This record changer is mounted on a heavy metal base which is rubber mounted to the cabinet. The turntable is rim driven and in turn drives the automatic changing mechanism. Each changer is thoroughly tested before it leaves the factory and should not need any further adjustments. It is possible that due to wide variations in types of records used, minor adjustments in settings may have to be made. Under the following headings are listed effects, possible cause and method of correcting.

A word of caution when checking for quality.

1. Make sure that all the packing has been removed, around motor, turntable, etc.

2. See that the changer unit does not touch the cabinet, it must float on the four rubber mountings. The four screws which mount base to cabinet should be removed (AFTER RECEIVER IS IN POSITION).

3. ALWAYS USE A GOOD NEEDLE AND SEE THAT IT IS SEATED AND THAT THE NEEDLE SCREW IS TIGHT.

### 1. Motor Will Not Start.

1. Plug not in receptacle, house fuse blown, defective outlet.

2. Defective switch (Phono-Radio), open motor winding or leads.

3. Motor stopped in an overload position, i. e., record drop cam and cam roller at point where roller is just about to LOWER shelf. Turn the turntable (clockwise) two or three revolutions by hand.

NOTE: The turntable screws down on the record spindle. To remove, turn in clockwise direction by hand until the curve on the spindle is toward the loading rack, then lock small drive pinion in that position. Spindle must NOT turn. Unscrew turntable (counter clockwise).

4. Friction drive pulley stuck, friction drive pulley not touching turntable rim or bushing on motor shaft not touching friction drive pulley. Oil on friction drive pulley.

5. Center pinion shaft stuck or tight. Free and oil. When replacing be very careful so as not to bend or spring the friction drive pulley which will have to be pushed under the edge while screwing the turntable in position.

### 2. Tone Arm Does Not Drop In Correct Position.

1. 10 inch or 12 inch lever not in correct position for record being played. Check setting of lever.

2. Tone arm drop not set correctly to meet record variations. Records may vary as much as  $\frac{1}{2}$ -inch in diameter. Adjust for average conditions.

To adjust tone arm drop, place gauge on turntable, large hole (A) over spindle, place needle in tone arm and then place tone arm so the needle sets in small hole marked "NEEDLE SET FOR 10". Throw 10" record lever in correct position. The tone arm adjusting lever, see Fig. 7, must have its stud in contact with the tone arm travel lever, this lever must be in contact with die cast cam and gear. Loosen screw in adjusting lever and adjust lever, then tighten. Check operation and repeat until tone arm drops in correct position.

To adjust for 12-inch records, throw lever to left for 12-inch records. With gauge in place on turntable place tone arm in position marked "NEEDLE SET FOR 12". Loosen lock nut on tone arm travel lever and adjust screw to stop. Tighten lock nut and check. Repeat until needle drops in correct position.

For the above adjustments use a small cotter pin instead of a needle. This prevents any scratching or marring of records or turntable surface.

### 3. Trips Before Record Is Finished.

This condition invariably is caused by the clutch being too tight. This clutch is the friction type and when the pickup moves at an increased speed toward the center of the record, sufficient torque is developed to cause the tripping arm to act. To remedy it is necessary to have a No. 6 Bristol wrench to loosen the

special set screw in the collar nearest the base of changer, see Fig. 1. Loosen set screw and turn collar a fraction of an inch to the left (counter clockwise) tighten set screw. Check and repeat until record plays to end.

### 4. Does Not Trip After Record Is Finished.

1. Center groove on record does not have sufficient pitch to develop enough torque to actuate clutch. This may result from improperly cut trip groove in record or loose clutch setting.

2. It may be possible that the trip arm may have jumped to the wrong side of the rocker bar trip arm see Fig. 7. It should be on the same side as reject arm.

3. To check the trip action adjustment, place the gauge (hole marked B) on the lower spindle and set needle or cotter pin in hole marked TONE ARM TRIP ( $1\frac{1}{8}$ " centers). When in this position the cam on the center pinion shaft should be pointing toward tone arm. With cam as stated, the starting lever should be touching cam when cam and starting lever are in this position. The tone arm tripping lever should be in contact with the starting lever. Likewise the rocker bar (Fig. 3) (bar which engages pin in pinion gear shaft causing large cam gear to engage pinion gear) must be in contact (beneath) the end of the starting lever (Fig. 3) The end of starting lever may be bent sufficiently to make contact. The end of starting lever must not be bent any more than that which is necessary to center the other end of the rocker bar between the cam and the pin on the small pinion gear (Fig. 3) (running position).

After the above has been checked and adjusted the trip arm (while unit is running) should come in contact with the starting lever when the needle is about  $3\frac{1}{2}$  inches from the center line of the spindle. This may be adjusted by loosening the Bristol set screw in tripping lever stop collar (Fig. 1) and turning collar a fraction of an inch to the left. Check operation after tightening set screw.

4. The clutch may be too loose, thereby not developing sufficient torque. To adjust loosen Bristol set screw in clutch collar, rotate collar (Fig. 1) to the right a fraction of an inch. Tighten set screw. Check operation.

### 5. Records Do Not Drop.

1. Record hole tight or record warped.

2. Shelf height not correct. To adjust see Fig. 4, for correct height; adjust for 10" records first.

3. Spindles may not be in correct relation. See Fig. 4, for correct alignment. Top spindle adjustable.

4. Record drop cam roller out of adjustment. Set correct shelf height (10" shelf) by loosening lock nut and turning screw; tighten locknut.

### 6. Drops More Than One Record.

1. Warped record.

2. Spindle alignment and etc. Same procedure as listed under 5.

### 7. Tone Arm Drags On Record.

1. Too many records on the turntable.

2. Records may be thicker than average or warped.

3. Needle too long or not properly seated.

4. Tone arm lift adjusting screw loose or out of adjustment.

To check the tone arm for correct lift, rotate turntable (clockwise) by hand and push reject button in order to actuate trip. Turn slowly until tone arm reaches maximum height and starts to travel toward tone arm rest, then stop when the arm is approximately one inch from edge of turntable. Check the height of the tone arm from the surface of the turntable as indicated in Figure 5. From the lower edge of the tone arm to the top of the turntable the distance should be between  $1\frac{7}{16}$ " and  $1\frac{17}{32}$ ". To adjust the tone arm lift screw (Fig. 2-A) loosen locknut and adjust screw until arm is within above tolerance, then tighten locknut.

# CAPEHART

FIGURE 1

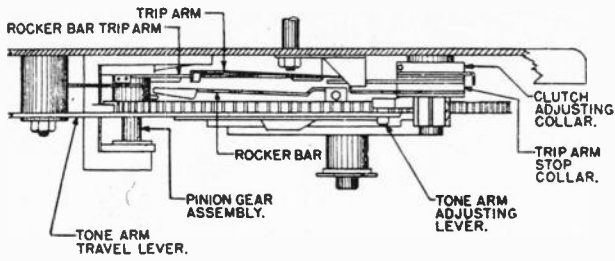


FIGURE 4.

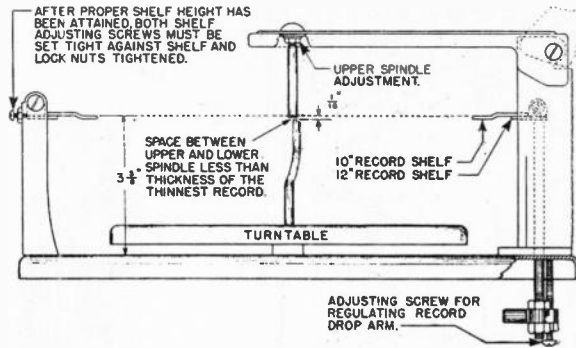


FIGURE 2-A

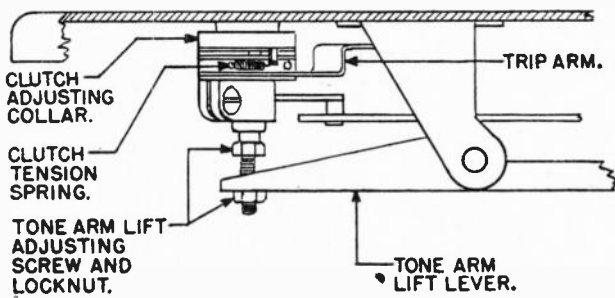


FIGURE 5

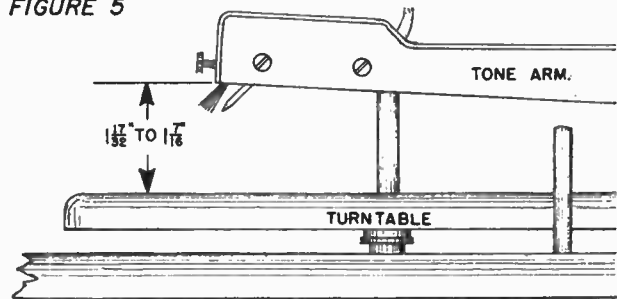


FIGURE 3

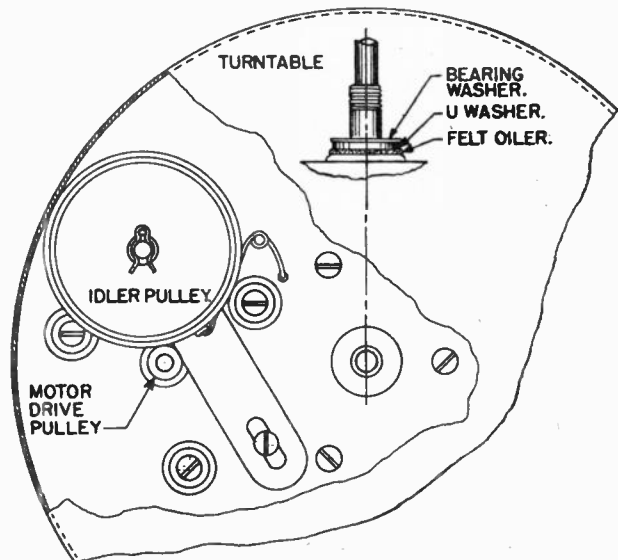
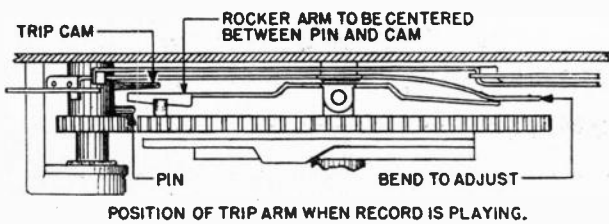


FIGURE 6



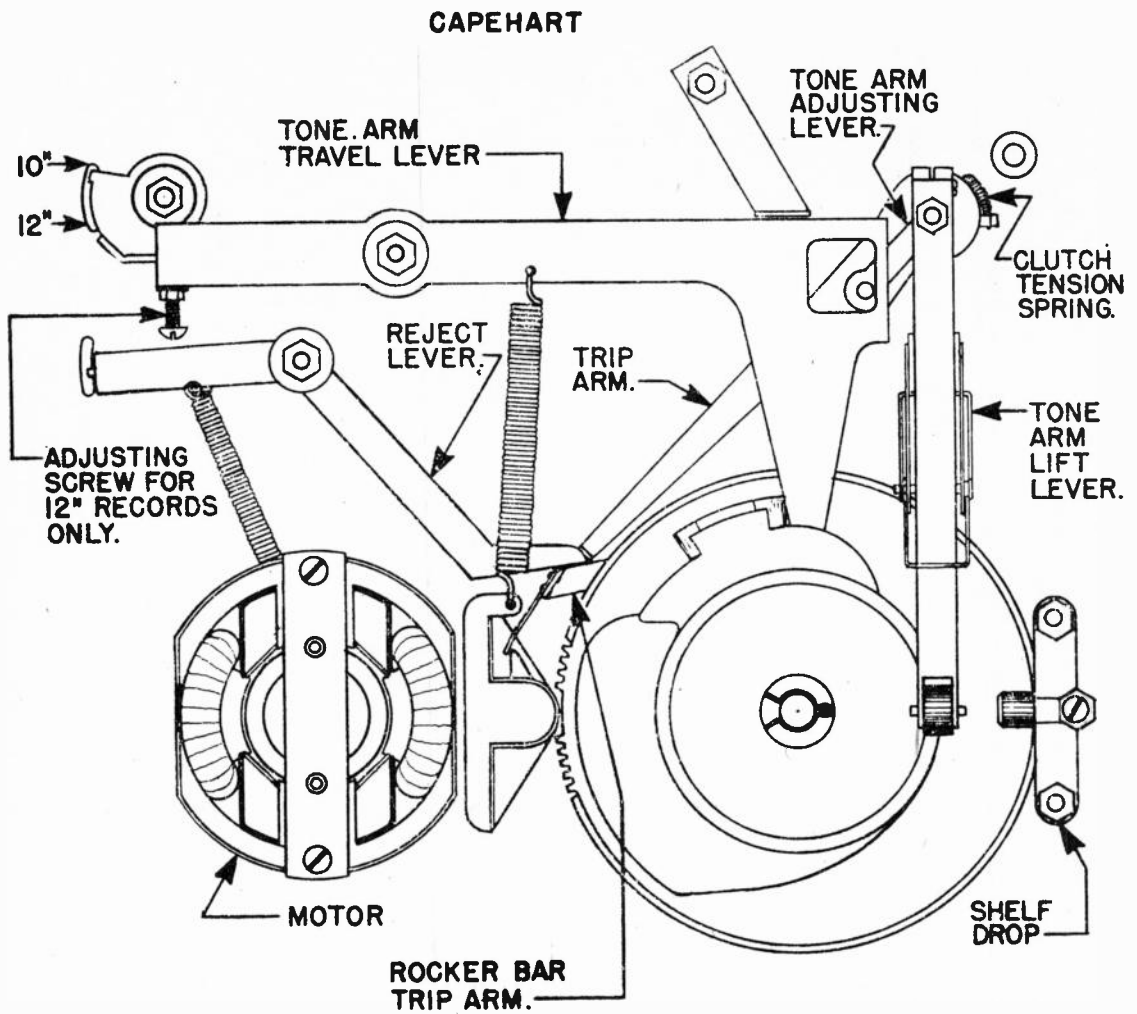
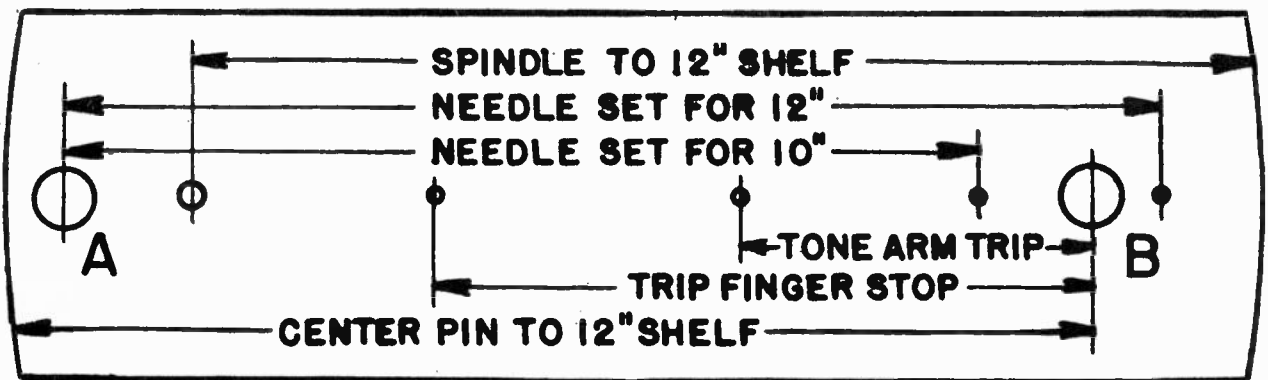


FIGURE 7



ADJUSTING GAUGE TEMPLATE  
610

CAPEHARD RECORD CHANGER AS USED WITH MODEL 639M

Part No.	Description
49744	Rocker Bar
49745	Trip Arm
49746	Pinion Gear Assy.
49747	Tone Arm Adjusting Lever
49748	Clutch Adjusting Collar (Upper)
49749	Trip Arm Stop Collar
49750	Tone Arm Lift Lever
49751	Shelf Drop Spring
49752	Travel Lever Spring
49753	Reject Lever
49754	Reject Lever Spring
49755	Upper Spindle Adj. Nut.
49756	Clutch Flat Spring
49757	Clutch Drive Cork
49758	Reject Knob
49759	10"-12" Record Knob
130041	Tone Arm Lift Rod
130975	Rocker Bar Trip Arm
131567	Tone Arm Pivot Grommet
48548	Idler Pulley
49103	Rubber Band for Idler Pulley
48537	Motor Drive Pulley (60 cy)
48536	Motor Drive Pulley (50 cy)
48544	Turntable
48543	Tone Arm Assy.
49573	Upper Spindle
132059	Lower Spindle
49629	Clutch Spring
48542	Crystal Unit
48549	Record Brush
48550	Needle Screw
48545	Motor (60 cy)
48546	Motor (50 cy)
49530	Wrench for #6 Bristol
48453-A	Record Changer (110 v. 60 cy)
48531	Record Changer (220 v. 50 cy)

## RADIO PRODUCTS SERVICE NOTES

### IF CHANGING CYCLE FAILS TO STOP

With the center post (3) out remove the large nut (2) in the center of the turntable (1) and lift off the turntable. Loosen the two screws (23) this will free the large cast gear (35). Push these screws to the point where the small gear (21B) is free in the blank part of the teeth in the large gear (35), but as far as possible from the starting teeth of the large gear when it is in the locked or stopped position. Tighten the screws (23) in the slots firmly and re-assemble the turntable and nut. Check and see if the starting lever (30) on the underside of the large gear (35) is cocked by trigger bracket (35F) when the large gear makes a complete revolution. If not, check springs (35A) and (35B). Spring (35A) pushes lever (30) to the engaging position when released by trigger bracket (35F) held against lever (30) by spring (35B).

### PICKUP ARM ADJUSTMENTS

#### VERTICAL MOVEMENT

To adjust the height of the pickup arm (9) turn the knurled screw (91) on the underside of the pickup arm (9) directly above the pickup arm lift shaft (60). Turn the screw (91) counter-clockwise to raise the pickup arm, and clockwise to lower the pickup arm.

#### HORIZONTAL MOVEMENT

If the pickup arm (9) does not come down on the record so the needle first touches the record about  $\frac{1}{8}$  inch from the edge, an adjustment is required. The inside part of the large gear (35) has two tracks, the inner one for ten inch records and the outer one for twelve inch records. It is only necessary to set the pickup (9) for one size, either the ten, or twelve inch. Turn the large gear (35) around until the roller pin in the mover arm (54) is just about to leave one of the tracks. If the pin of the mover arm (54) is in the inside track a ten inch record must be on the turntable and if in the outside track a twelve inch record is required. Now loosen the two screws (57 and 59) that secure the pickup arm shaft (9D) to the mover arm (54) and turn pickup arm (9) to correct point. Tighten screw through the slot first (59) and then the set screw (57).

The pickup arm shaft (9D) has a small spring (58) fastened to it underneath the changer to push the needle over into the first groove on records without a starting groove. The force the spring (58) exerts is adjusted by moving the hook in the end of the spring (58) to another hole in the hook plate (62). Facing the underside of the changer with the plate (62) in the upper left hand corner, moving the hook in the spring (58) to a hole to the left will increase the tension, to the right will decrease the tension. If the needle jumps several grooves when pushed over the spring tension is too light, while if the arm does not move all the way over to the first groove more spring tension is required.

#### TRIP ADJUSTMENTS

The position trip adjustment is a screw (55) located near the end of the mover arm (54) underneath the changer. To trip earlier turn the screw (55) clockwise, to trip later turn the screw counter-clockwise. Lock adjustment with nut (56).

### RECORD HOLDER POST ADJUSTMENTS

With the changer properly loaded the bottom record on the stack should rest for about  $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch on each side of the top (4B) of the record holder post (4), if not adjust as follows: With the center post (3) out remove the large nut (2) in the center of the turntable (1) and lift off the turntable. Loosen the two screws (18) in the slots in line with the record holder post and the center. Push the screw heads (18) the required amount toward, or away from the record holder post (4) and tighten the two screws (18).

The top of the record holder post (4) is fastened by the shaft on (4A) inside the post to the size cam (4D) underneath, which has two rectangular holes into which snaps a spring arm (44). The pressure this arm

(44) exerts on the above size cam (40) may be adjusted by the screw (45) which presses against the arm (44). The arm (44) should press firmly against the size cam (40) so it will snap tightly into either of the two holes. When the spring arm (44) is in the rectangular hole farthest from the outside of the size cam (40) the top of the record holder post (4) should be in the ten inch position. If the screw (45) is too tight it will be hard to turn the top of the record holder post (4). The size cam (40) is fastened to the shaft of (4A) inside the record holder post (4) by two hex head set screws (41).

If both sides of the record pusher (4F) on the top of the record holder post (4) do not push against the lower record at the same time, loosen the two hex head screws (41) and turn the top of the record holder post (4) slightly to the proper position. Tighten the screws (41).

### SETTING FOR 10 OR 12 INCH RECORDS

The edge of the size cam (40) pushes against a knurled screw (71) on size change lever (73). This sets a switch (33) on the cam part of main gear (35), for the pickup (9) to drop for either a ten inch or twelve inch record by causing pin in the arm fastened to the mover arm (54) to travel through one of two tracks in the inside of the large cast gear (35). After adjustment is made tighten the lock nut (72) on the knurled screw (71).

### RECORDS FAIL TO DROP

If a record fails to drop during a changing cycle, but the record pusher (4F) on top of the record holder post (4) is operating and the adjustments under "Record Holder Post" are correct, proceed as follows: Set the large gear (35) in the locked position and the top of the record holder post (4) in either the ten inch or twelve inch position. Loosen the single hex head screw (70) which secures a "U" bracket (69) to the inside shaft (4E) of the record holder post (4) underneath the changer. Turn the shaft (4E) slightly until the sides of the record pusher (4F) are about  $\frac{1}{4}$  of an inch back of the edge from where the records drop. The hex head screw (70) should now be firmly tightened.

While the large gear (35) makes one complete revolution, during a changing cycle, the pusher arm (4F) should extend past the edge from where the records drop, and return.

### NOTE I

#### 50 CYCLE OPERATION

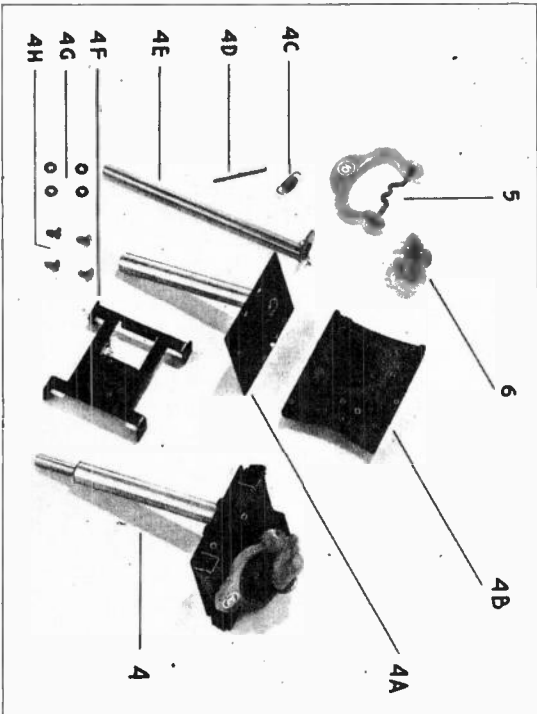
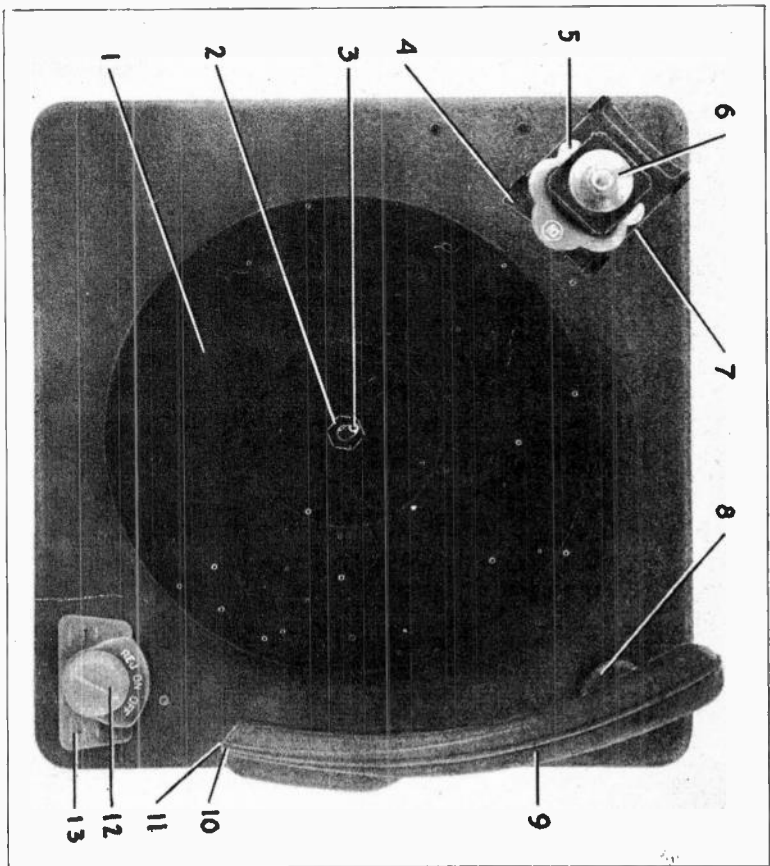
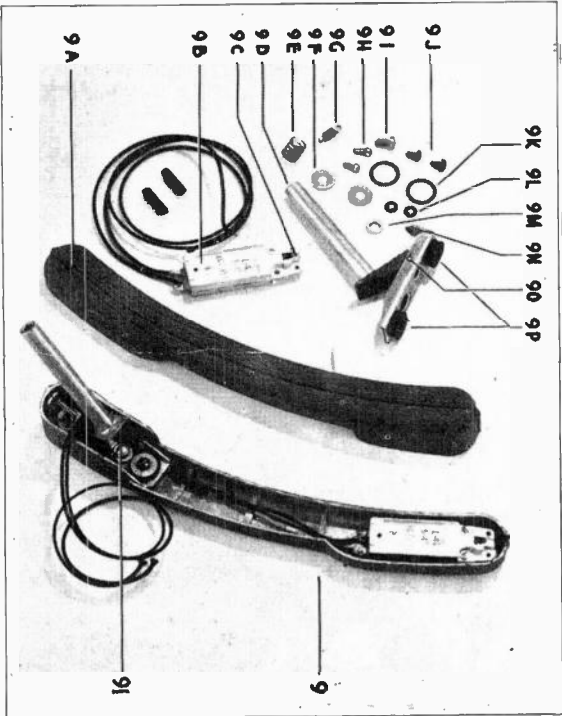
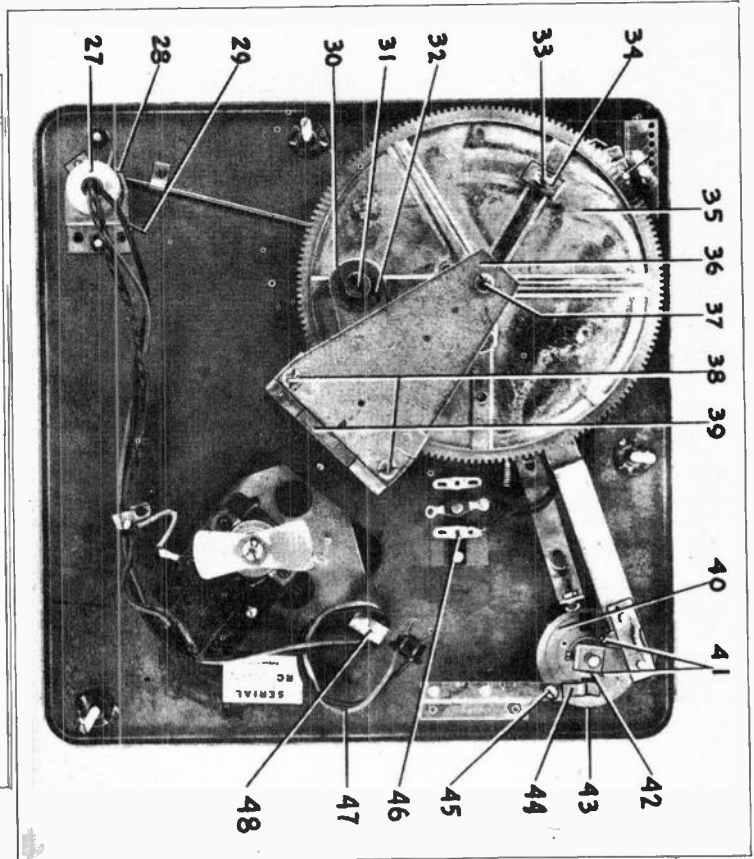
If operation is desired on 50 cycle current, a small spring (15), see parts list, must be added to the motor shaft in the following manner:

With the center post (3) out, remove the large nut (2) in the center of the turntable (1) and lift off the hand. Hold conversion spring (15) in the right hand turntable. Hold motor rotor with fingers of the left with the extension upwards. Hook lower end of spring (15) over edge of rotor shaft drive pulley and with a downward twisting effort in a direction to unwind or enlarge the inside diameter of the conversion spring (15) force down over entire pulley length. The extension which is provided for ease of assembly only, should then be sprung away from the pulley sufficiently to allow it to be snapped off with a pair of diagonals, at the spring surface so no protrusion will remain to impair operation of the drive pulley. The motor shaft pulley thus enlarged will provide proper turntable speed with the motor operating on 50 cycle current.

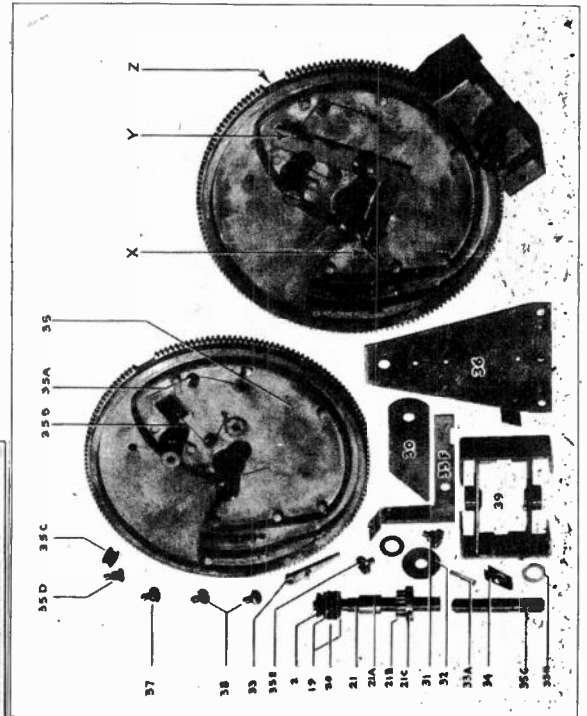
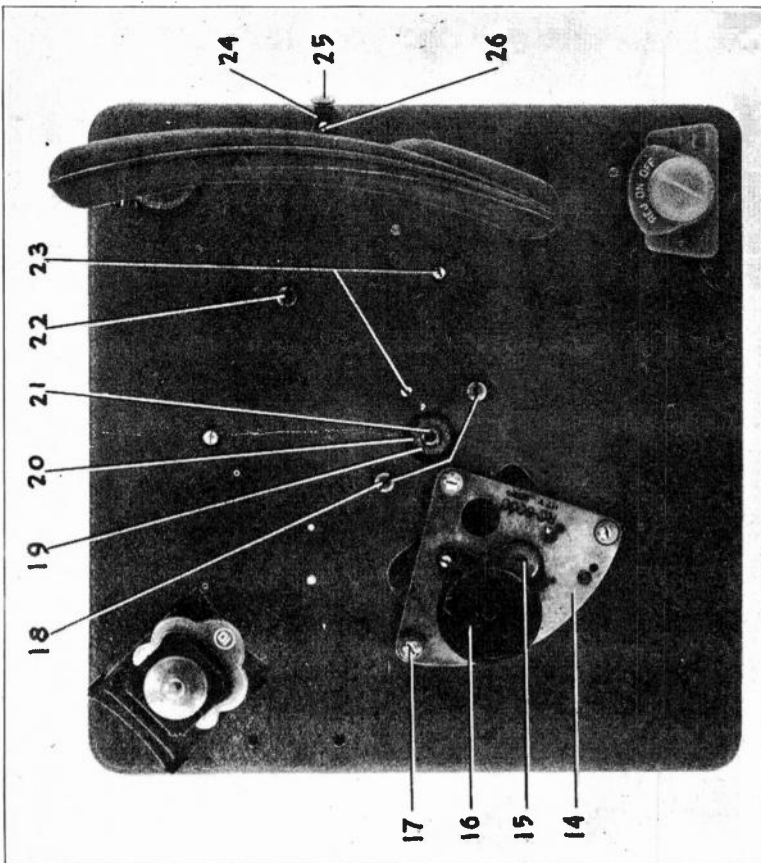
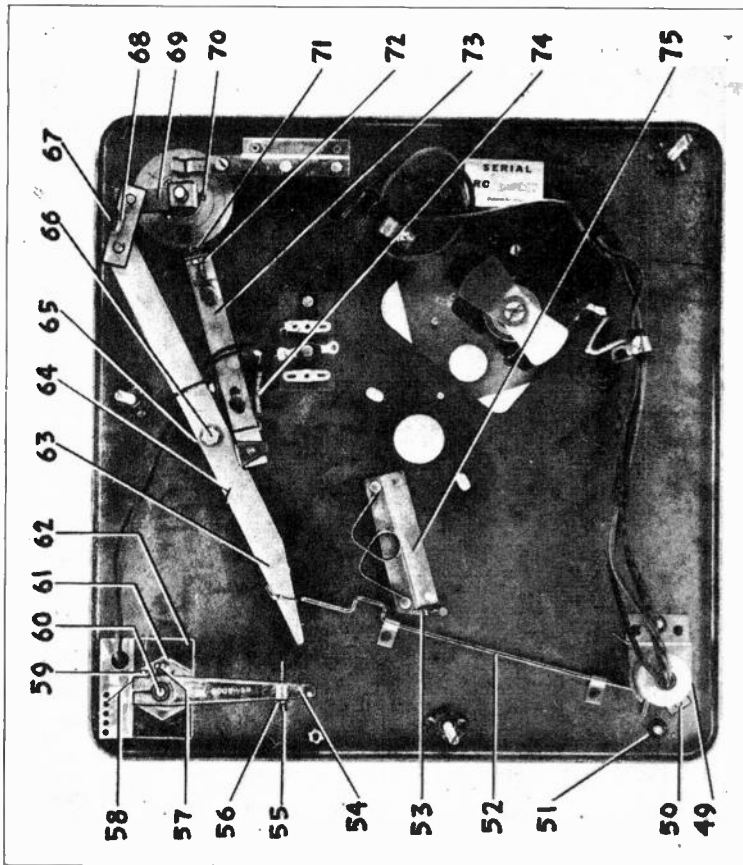
### RUMBLE OR CHATTER

Make certain the pickup arm mounting grommets are not compressed. Needle pressure should be 1 to  $1\frac{1}{2}$  oz. Adjust by changing spring tension of pickup counter balance spring.

# RADIO PRODUCTS



RADIO PRODUCTS



## RADIO PRODUCTS RECORD CHANGER, RC50, 51, 52, 53

Item No.	Part No.	Description	Item No.	Part No.	Description
1	132728	Turntable	31	134007	Stud
2	132729	Turntable Nut	32	134008	Washer
3	132438-1	Off-Set Post	33	134004	Switch & Stud
	134083	Spring Only	34	134005	Spring
4A	133953	Mtg. Shelf Plate & Sleeve	35	134001	Gear & Cam
4B	133952	Changer Shelf	35A	132773	Spring
4C	132745	Clamp Spring	35B	132774	Spring
4D	132746	Pin	35C	134009	Roller
4E	133954	Cam & Shaft	35D	134010	Stud
4F	133955	Record Remover	35E	134012	Stud
4G	133956	Lockwasher	35F	134011	Bracket
4H	133957	Screw 4/36 x 1/4"	35G	134002	Post
5	132744	Clamp (Plastic)	35H	134003	Washer
6	132743	Cap (Plastic)	36	133993	Bracket
7	133958	Support Post	37	133995	Mtg. Screw
8	133947	Pickup Arm Post	38	133994	Mtg. Screw
9A	133651	Casting	39	132770	Bearing
9B	132738	Cartridge (Phillips Hd.)	40	133978	Size Cam Assy.
	133938	Cartridge (Knurled Hd.)	41	133979	Set Screw
9C	132739	Phillips Hd. Screw	42	133980	Spacer
	133939	Knurled Hd. Screw	43	133959	Mtg. Nut
9D	133946	Bracket & Sleeve	44	133981	Spring & Brkt. Assy.
9E	132760	Adjusting Spring	45	133982-83	Screw Locknut
9F	133943	Washer	46	133984	Panel
9G	132526-1	Spring	47	133989	Cable (RC50 & RC51)
9H	132740	Mtg. Screw		133990	Cable (RC52 & RC53)
9I	132734	Adj. Screw	49	132769	Spring Washer
9J	133940	Screw	50	133992	Lever
9K	133949	Bakelite Washer	51	132737	Clamp
9L	133942	Lockwasher	52	133986	Lever
9M	133944	Adj. Washer	53	133987	Spring
9N	133945	Mtg. Bracket	54	133960	Mover Assy.
9O	132762	Pivot Pin	55	133962	Headless Screw
9P	133941	Grommet	56	133963	Nut
11	133937	Needle	57	133964	Set Screw
12	132735	Knob	58	133965	Lead-in Spring
13	132736	Bacutcheon	59	133961	Screw
14	132732	Motor (60 Cy)	60	133950-51	Pin & Washer
15	131032	Bushing (50 Cy)	61	133948	Nut
16	132733	Idler Wheel	62	133966	Hook Plate
	132771	Cork Washer	63	133967	"Z" Bracket Assy.
20	132772	Bearing	64	132763	"Z" Bracket Spring
21	133996	Pinion Shaft	65	133968	"Z" Bracket Stud
21A	133999	Ferrule	66	133969	Screw
21B	133997	Gear		133970	Nut
21C	133998	Set Screw		133971	Lockwasher
24	132741	Arm Rest		133972	Washer
25	132742	Cap	67	133764	Lever Link
26	133934	Screw	68	132764	Spring
	133935	Nut	69	133976	"U" Bracket Assy.
	133936	Washer	70	133977	"U" Bracket Set Screw
27	132767	A.C. Switch	71	133974	Adj. Screw
28	133991	Sw. Mtg. Brkt.	72	133975	Locknut
29	132768	Spring	73	133973	Lever Assy.
30	134006	Bracket Assy.	74	132765	Spring
			75	133988	Spring & Brkt.

## MOST USED FORMULAS

### RESISTANCE

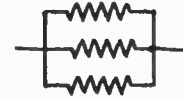
IN SERIES

$$R_t = R_1 + R_2 + R_3 \text{ etc.}$$



IN PARALLEL

$$R_t = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \text{ etc.}}$$



TWO RESISTORS  
IN PARALLEL

$$\frac{R_1 R_2}{R_1 + R_2}$$

### CAPACITANCE

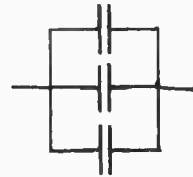
IN PARALLEL

$$C_t = C_1 + C_2 + C_3 \text{ etc.}$$



IN SERIES

$$C_t = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} \text{ etc.}}$$



TWO CAPACITORS  
IN SERIES

$$C_t = \frac{C_1 C_2}{C_1 + C_2}$$

### FREQUENCY FROM WAVELENGTH

$$f = \frac{3 \times 10^5}{\lambda} \text{ (Kilocycles)}$$

Where  $\lambda$  = Wavelength in meters

$$f = \frac{3 \times 10^4}{\lambda} \text{ (Megacycles)}$$

### WAVELENGTH FROM FREQUENCY

$$\lambda = \frac{3 \times 10^5}{f} \text{ (Meters)}$$

Where  $f$  = Frequency in Kilocycles.

$$\lambda = \frac{3 \times 10^4}{f} \text{ (Centimeters)}$$

Where  $f$  = Frequency in Megacycles.

# HOW TO TELL WHAT RESISTOR TO USE

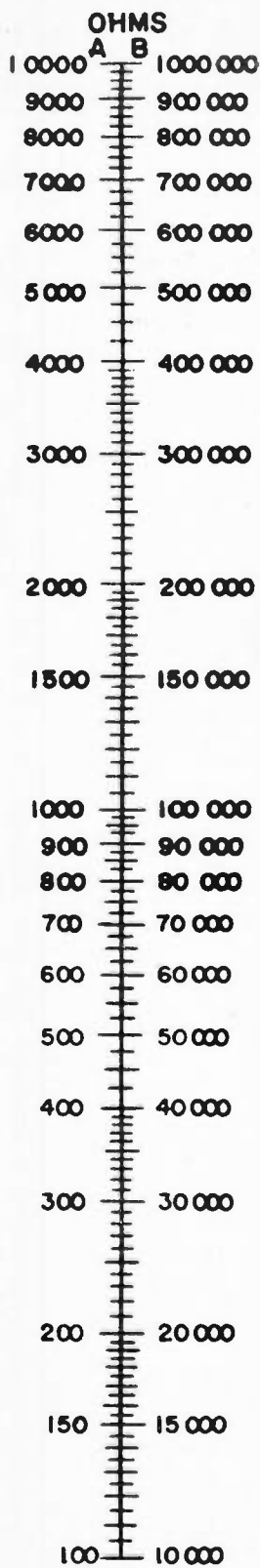
READ FROM LEFT TO RIGHT

## RESISTANCE

## POTENTIAL DROP

## POWER DISSIPATED

## CURRENT



HOW TO USE THIS CHART TO FIND WATTS, OHMS, VOLTS, MILLIAMPERES.

WITH THIS CHART IT IS POSSIBLE TO FIND TWO OF THE FOLLOWING — CURRENT, RESISTANCE, WATTAGE, OR VOLTAGE, IF THE OTHER TWO ARE KNOWN.

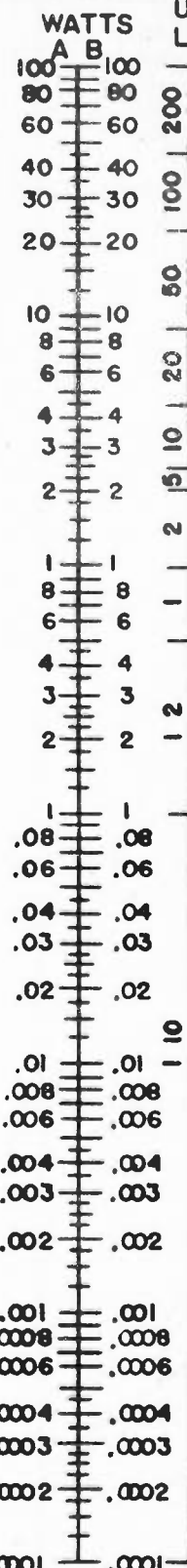
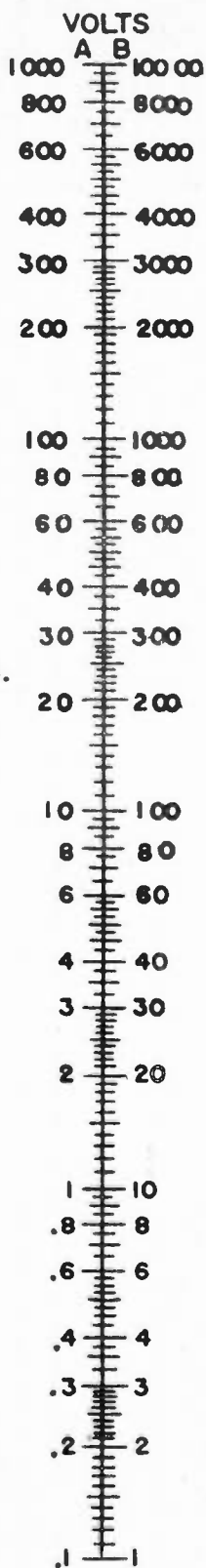
LAY A STRAIGHT EDGE ACROSS CHART SO THAT IT INTERSECTS TWO OF THE SCALES FOR WHICH VALUES ARE KNOWN THE POINTS AT WHICH THE RULER CROSSES THE OTHER TWO SCALES ARE THE DESIRED VALUES.

DO NOT USE SCALE "B" WITH SCALE "A." ALWAYS USE A WITH A, OR B WITH B

### EXAMPLE

ON SCALE "A"

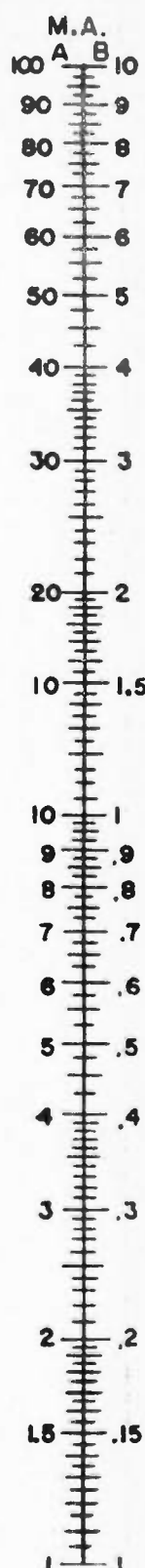
R = 5000  
V = 100  
W = 2  
MA = 20



USE RESISTORS LISTED BELOW

WIRE WOUND

CARBON RESISTOR

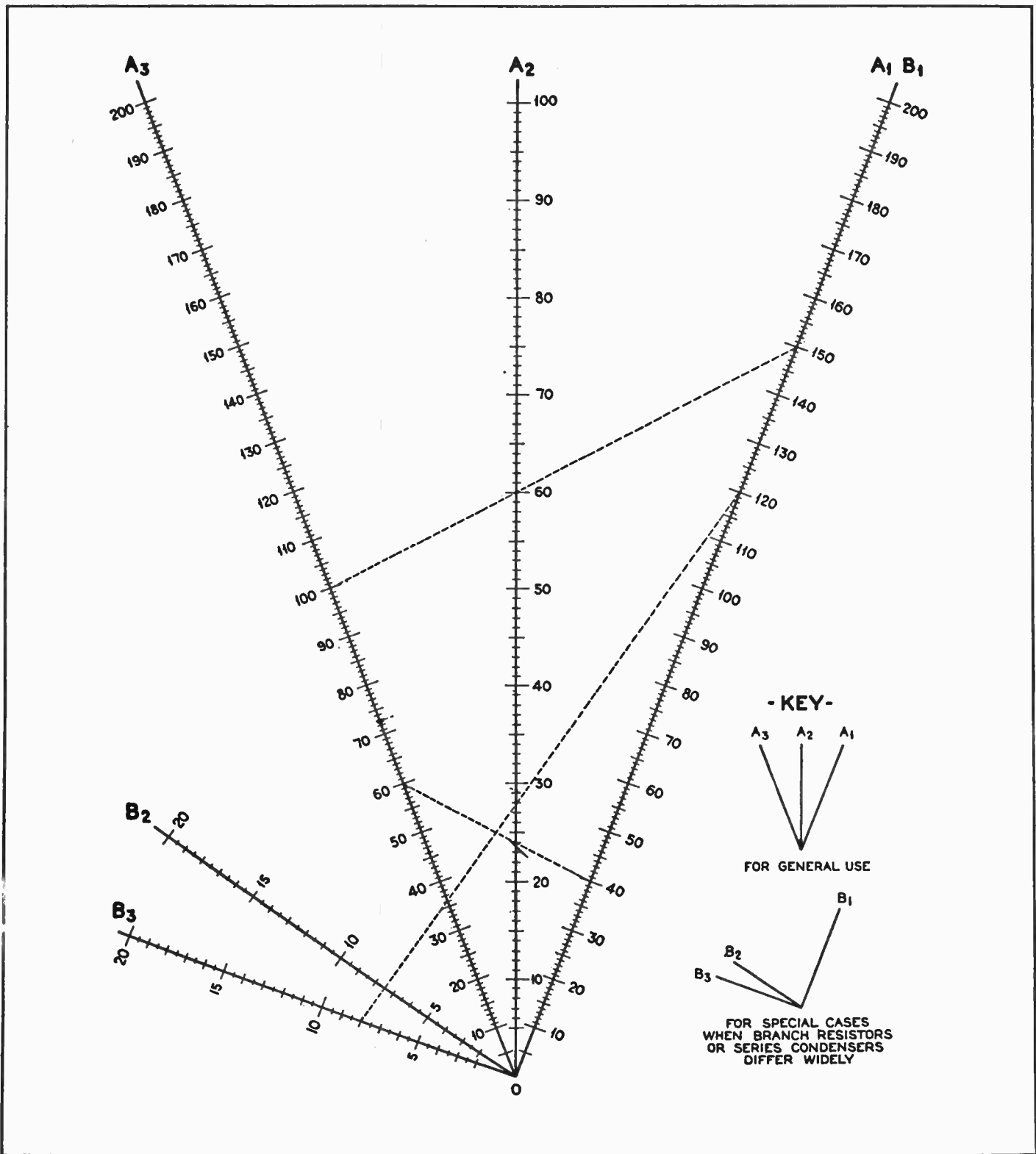




# Series Condenser—Parallel Resistors Chart

This chart enables you to find the equivalent resistance of two resistors in parallel and also the capacity of two condensers in series. Draw a straight line through the divisions on scale  $A_1$  and  $A_2$  representing the resistance in the two branches, and you will find the resultant resistance on scale  $A_3$ . To find the resistance of one branch

when the other branch and the total resistance are known, draw lines through the corresponding points on  $A_1$  and  $A_2$ , and find the answer on  $A_3$ . When the resistance of the two branches is widely different, use the chart consisting of scales  $B_1$ ,  $B_2$ , and  $B_3$ .  $B_1$  and  $B_2$  are for the unequal branches and the result is on  $B_3$ .



# THE MAGIC CIRCLE

A QUICK AND ACCURATE REFERENCE TABLE FOR RADIO MATHEMATICAL FORMULAS.

### EXAMPLES

$$\frac{E^2}{R} = W$$

$$I^2 R = W$$

$$EI = W$$

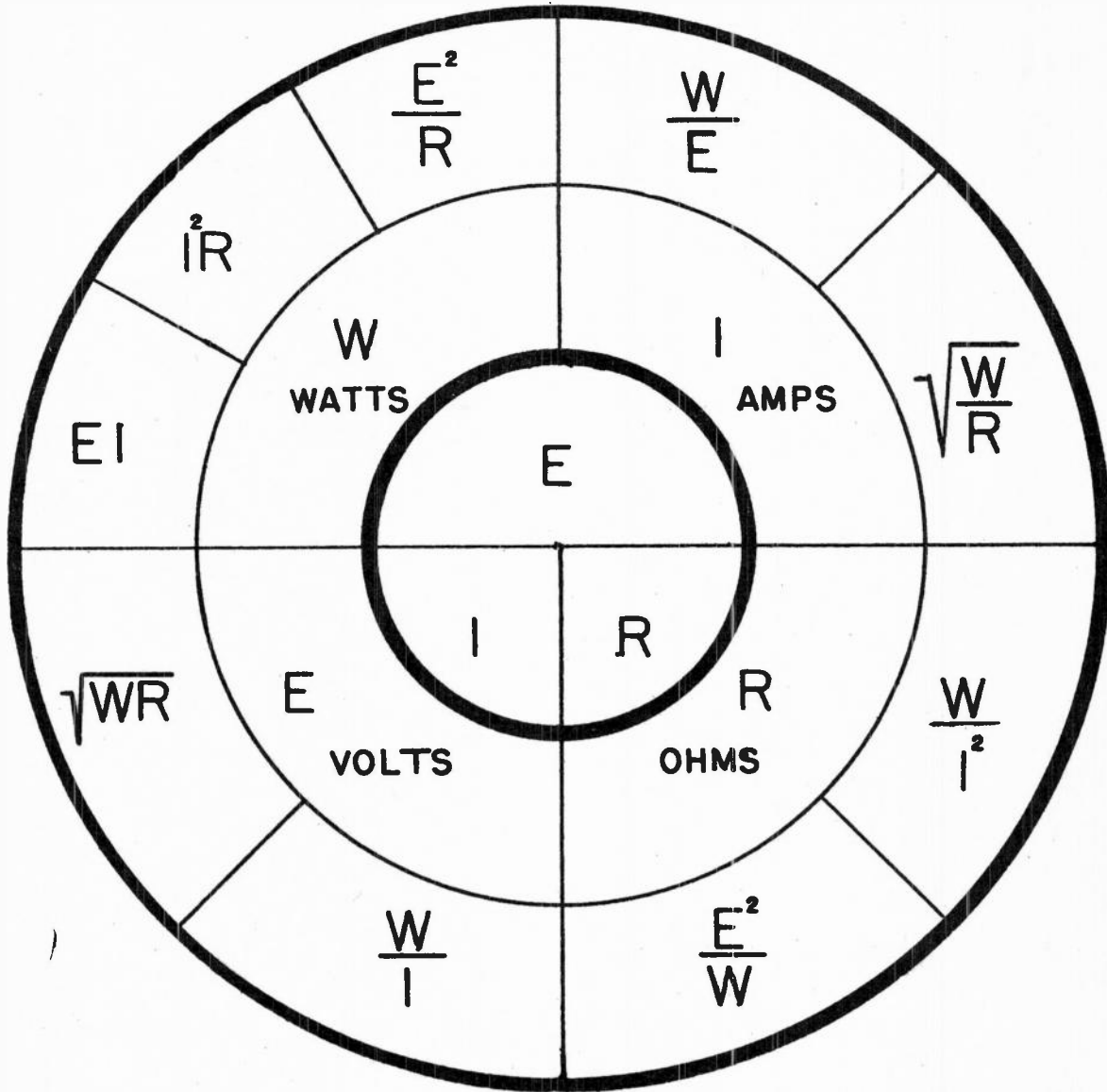
$$\frac{E}{I} = R$$

$$\frac{E}{R} = I$$

$$IR = E$$

$$\frac{W}{E} = I$$

$$\sqrt{\frac{W}{R}} = I$$



$$\sqrt{WR} = E$$

$$\frac{W}{I^2} = R$$

$$\frac{W}{I} = E$$

$$\frac{E^2}{W} = R$$





