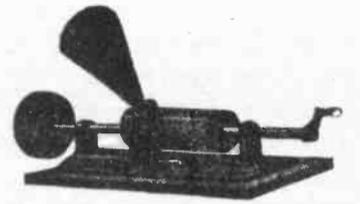


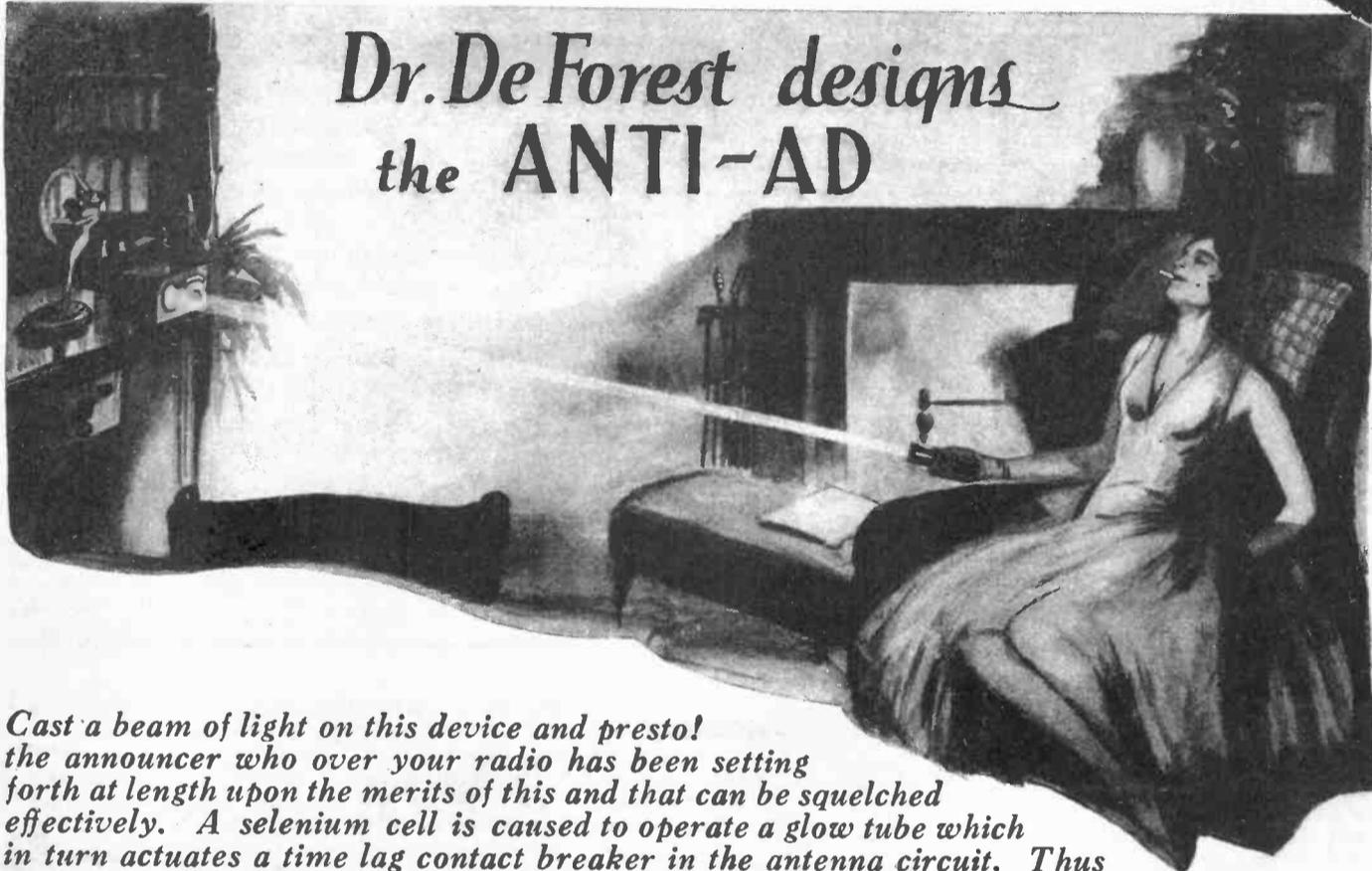
THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

THE HORN SPEAKER



PHONOGRAPH CENTENNIAL
1877 - 1977

RADIO NEWS FOR SEPTEMBER, 1930



*Dr. DeForest designs
the ANTI-AD*

Cast a beam of light on this device and presto! the announcer who over your radio has been setting forth at length upon the merits of this and that can be squelched effectively. A selenium cell is caused to operate a glow tube which in turn actuates a time lag contact breaker in the antenna circuit. Thus nauseating advertising blurbs are painlessly deleted from your enjoyment of otherwise fine programs

By Dr. Lee DeForest

THE tendency of the present radio broadcast programs to degenerate more and more into crass commercialism and to devote a steadily increasing proportion of the time to exploiting the merits of every conceivable commodity from tooth-paste and cigarettes to household furniture and diamond rings is steadily diminishing the number of radio users or the hours for which the radio sets are turned on. One tires of continually getting up from his easy-chair every little while and going over to the dial, shutting off the set, or tuning it to another station as soon as the music of a program ceases and the blatant advertiser begins to announce his wares. So many of the best musical programs are nowadays more and more interrupted by these utterly uninteresting selling blurbs that although the radio listener realizes that in a few minutes, if he can endure the nuisance, the enjoyable part of the program will be resumed, he tires of continually running from his seat across the room to the radio set, and finally in disgust turns off the set altogether.

The remote control sets which are now coming into the market are enjoying ever increasing popularity, for which the advertising nuisance is largely responsible, offer one solution to the difficulty. But the nuisance of having a cable stretched across the room from the set to the easy-chair and the reading lamp, over which the missus and the children invariably trip, is a distinct disadvantage.

What the long-suffering radio user needs is a simple wireless device whereby he can instantly assassinate the advertising announcer and

allow the set to resume its musical outpourings when the story of the tooth-paste or furniture salesman is terminated.

The "Anti-Ad" device perfectly solves this problem. It consists of a small metal box approximately 6" square and 4" high which can be placed on top of the radio receiver or anywhere near it and is connected to the latter by a short flexible conductor cable. The "Anti-Ad" contains a selenium cell and a "grid glow" relay tube and simple relay. The selenium cell is set in the small end of a funnel-shaped shadow box so that it is not affected by daylight or the ordinary diffused lamp-light in a room. The current for energizing the selenium cell, the "grid-glow" tube and the relay is all supplied from the radio set through the two-conductor

cord which is connected to a two-contact disc which is fitted over the plugs of the detector tube, and the tube is then plugged back into its socket. The antenna is taken direct to a binding-post on the back of the Anti-Ad and a lead from the second binding post on the same leads to the antenna binding post on the radio set. The relay acts to break the contact in the aerial, thus cutting off all incoming energy from the radio set.

All that the discriminating and ad-exhausted radio listener needs to have at hand in order to operate the Anti-Ad is a small flashlight, which can be had in very ornamental form, located within easy reach on the table or chair where he or she is seated. When the musical program ends and the advertising agony begins, she merely picks up this flashlight, presses the button, aims this

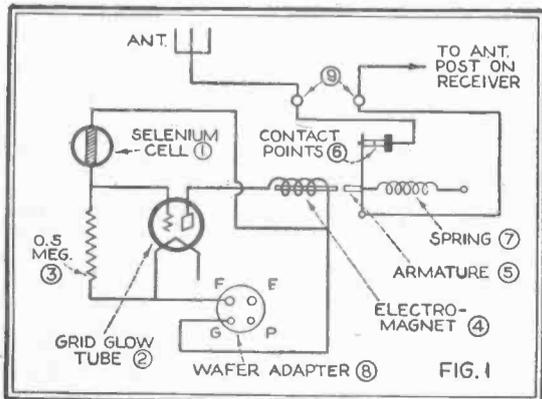
spot at the shadow-box on the Anti-Ad and presto! the relay operates, the antenna is cut off and our friend Mr. Radio Advertiser is talking into empty space, as he should be.

It is not necessary to hold the spotlight focused on the selenium cell throughout the desired period of interruption of radio set because attached to the relay is a time lag device which permits the relay to return to contact only after a definite period of delay. The duration of this period of delay is adjustable by means of the knob and dial on top of the Anti-Ad which is calibrated in seconds. Thus for example, if the radio listener knows that the "Third Strike Cigarette" announcer invariably talks for 20 or 30 or 45 seconds before permitting his excellent orchestra to resume their work, she can at the opening of the "Third Strike" program set the dial to say 40 seconds. Then when the announcer begins to tell the health benefits of his cigarette she gives one quick flash of her spotlight onto the Anti-Ad and can resume her reading in peace of mind, knowing that at the end of the 40 seconds the relay device will be released and the program will go on. It is possible that she may miss a few bars of the selection or possibly, if the advertiser is unusually windy, she may catch a few final words of his speech, but the peace of mind of

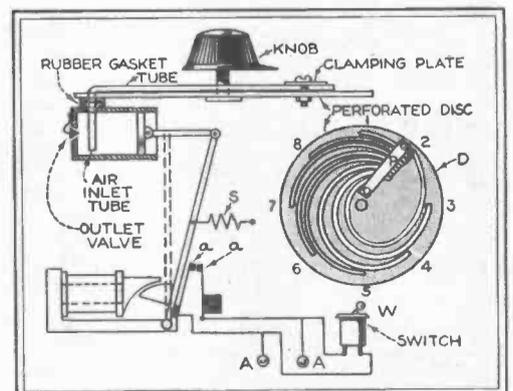
the radio listener will be immeasurably conserved.

In using the Anti-Ad one experiences a new joy not unlike that which one would experience in shooting a noisy tom-cat on the top of a back fence on a moonlight night and thus terminating the awful cat-erwaul. It is infinitely more satisfactory to recline in your easy-chair and kill the announcer with the simple flash of light than it is to get up, walk across the room and throw the radio switch.

The Anti-Ad adds to real radio enjoyment and greatly extends the number of hours throughout the month when the radio set is in operation. It should therefore be received with open arms by the entire radio industry.



This is the circuit of Dr. DeForest's Anti-Ad. When the beam of light strikes the selenium cell (1); its resistance is lowered causing a voltage drop across the grid leak (3); and current to flow across the grid glow tube (2); operating the magnet (4); and breaking the antenna contacts (6).



obtaining the time lag operation by means of various length pieces of tubing

LETTERS

Dear Jim:

Trading, selling, and buying even all correspondence makes a lot of dissatisfied people, not only in our hobby but in other enterprises. This involves the time lag in sending and receiving services. After trying to improve all problems that exist in providing services, especially in our hobby where one of the most important things is relax and be patient...anything that relates to the antique field is no place for an impatient person. Sometimes as impatient as we can be, we are not to blame..let me illustrate: On my wall hangs an 1861 PONY EXPRESS Poster, do you know in 1861 it took 7 days for them to deliver a letter from New York to San Francisco? Today is the same; it takes our U.S. Postal System 7 days to deliver by First Class - This is the major problem in our hobby, not only for those like myself that provide services, but the collectors who do the same thing on an individual basis. Many collectors have the right to be mad, they blame the Party or sender. If your magazine, order or hobby publications doesn't arrive on time you blame again the Publisher, when 90% of the time it is NOW the Postal system you can get after. Collectors who order books and send no

extra postage are not aware it takes 3 to 4 weeks by book rate to be delivered by the Post Office... after one week they write and wonder where their order is?...some will write three different times even after you notify them...if First Class postage is sent...many do the same thing... not realizing it takes 10 days to process and deliver to the post office. Due to the volume of mail we receive the problem is multiplied many times by the number of correspondence from different individuals...soon many are discouraged, think they are being ripped off, and the negative attitude starts rubbing off on all...who suffers? All of us who provide these services and NOT the post office.

I have seen all types of dealers and collectors in our hobby, generally most are first class people and very honest, therefore next time be patient and we will pass the mail order hints on to you...it will really help both parties: First if you want the fastest service on large valuable packages ...SEE IF THEY USE UPS IN YOUR AREA, most of us who provide these Services are individual run and use the U. S. MAILS. If so, on BOOK RATE ADD enough Special Handling. It goes the same as FIRST CLASS. We have tested this and had it verified by the Post Office... the Employees are instructed NOT TO TELL THE CUSTOMER this...many believe

this means from the counter to the Bag behind the clerk. When mailing a package...it is the duty of the Postal Clerk to weigh it and tell you the BEST AND CHEAPEST WAY TO SHIP...the average does NOT? Like any other government services...there are many many benefits customers are not aware of ASK! Shipping to a foreign Country there are cheaper, faster ways than they specific, if your lucky enough to live in a large city where there are numerous Post Offices, check around

BACK ISSUES

The Horn Speaker

- All 10 back issues for 1973...\$8.00 Single issues...\$1.00 each
 - All 10 back issues for 1974...\$6.00 Single issues...\$.75 each
 - All 10 back issues for 1975...\$5.00 Single issues...\$.75 each
 - All 10 back issues for 1976...\$5.00 Single issue...\$.75 each
 - Any single issue of 1977...\$.75 each
- Later, we should have complete volumes for 1972, first year.

The Horn Speaker

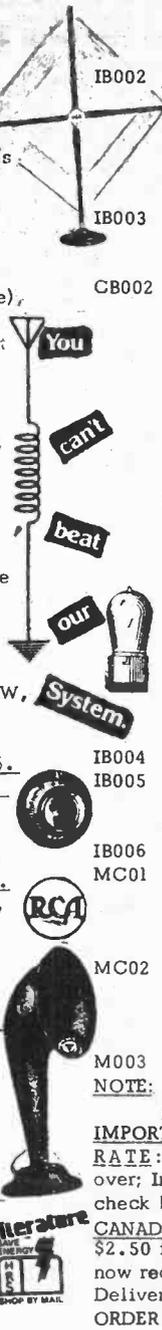
Box 12 Kleberg, Texas 75145

NOW AVAILABLE!! NEW REPRINTS OF THE RAREST LITERATURE

We bet there are alot of unknown collector items laying around in the junk boxes, incomplete...just waiting for this rare literature...our reprint services are the largest in the world...most of the original were taken from our collection...now the GREAT Silent Radio Collectors have come out of the woodwork and made available their originals so we all can benefit and share...we have many more to offer, but selected these only because of opinions from experts and our correspondence...the process is slow and we need your support...much of the following literature does not appear in anytype publications today...this literature is required for historical significance, restoration, reconstruction projects, appraising, and judging...now you can have all by ordering using the following designations: SB (service bulletin) IB (instruction book), B (brochure), CB (catalog book), M (miscellaneous).

The following AMRAD Service Bulletins are very rare..educational, we have made attempt to list the details...most all contain original part and prices, wiring diagrams etc.

- CB001 1921 AMRAD CRYSTAL SET: Rare, very First catalog-type-bulletin issued by the American Radio and Research Corp., to promote and sell to the general public this crystal set and their other products, simplified in detail..4p....\$2.95.
- SP001 1921-Feb-Bulletin-V: AMRAD Receiving UNITS, all units made in the first year, Each unit assigned name: LDL Variometer, SW-coupler, Crystal Receiver, Variable Condenser, VT-Detector, 2-stage-amplifier, B-Box, each unit can be combined to form 15 different combinations..example 2-Units coupled together Named "The Twinplex", 8-Units connected "The Pounders". All internal views interconnecting wiring and RARE wiring diagrams of each unit..if you have these in your possession...find out the names, if you don't have any you can use this rare literature to rebuild them..all with dimensions .8pages....\$4.95.
- SB002 1921-March-Bulletin-P3: Induction Coil Receiving Sets, 100W system with Murdock Oscillation transformers and condensers-Bunnell Key..2p....\$0.95.
- SB003 1921-March-Bulletin-Q: Quenched Gaps-Types G-1-1KW, G-2-1-2KW, G-3-1-3KW, and the assigned A-2 systems first used in the U.S. Navy..4p....\$1.95.
- SB004 1921-April-Bulletin-W-2: E-Type Wavemeter very rare..first unit to be used as as four functions such as WM, Variometer, Interference, & Preventer..2p \$0.95.
- SB005 1921-April-Bulletin-R: All standard parts catalog-type...4 pages.....\$1.95.
- SB006 1921-August-Bulletin-Z6: RARE Part listing and Prices of all AMRAD items made this year all with dimensions of each item where applicable..2p...\$0.95.
- SB007 1921-Sept.-Bulletin-L: Amrad receiving sets No. 2596, No. 2634, Detector-2-Stage Amplifier, well illustrated, contains all tech. information..4pages \$1.95.
- SB008 1921-Sept-Bulletin-N: Ampliformer No. 2620 Vernier, Variometer No. 245 parts, rheostats, dials, condensers, tube bases, Grid Leak, etc., 4p....\$1.95.-
- SB009 1921-Sept-Bulletin-O: New Variometer No. 2602, 2607, Variocouplers No. 11-No.14..like all others very RARE today and well illustrated..2p....\$0.95.
- SB010 1921-Sept.-Bulletin-T: Twin-Syn-motor No. 2551 included in the system along with the U. S. NAVY MODEL L 1/2 KW 500 cycle Transmitter(1250.00)..2p.\$0.95
- SB011 1921-Oct.-Bulletin-X: Rare long wave tuner-type 2492 Type-F, also listed; ARCSETS No. 2492, 2309, 2227...profusely illustrated...2p....\$0.95.
- SB012 1921 AMRAD SERVICE BULLETINS BOOKLET: Save us some time by ordering CB001, PLUS SB001 through SB011 all in one package for ONLY.....\$9.95.



For those who want to learn...

- IB002 1925 FREED-EISEMANN RADIO INSTRUCTION BOOK: by Joseph D. R. Freed President and Chief Engineer, Complete Installation and Operations data for all models made in 1925..Antennas, reception-all types-remedies, batteries, tubes, New and Old, Loud Speakers, list of Broadcasting station-world-wide building these radios, memorandums PLUS Rare history of this company photos, illustrations varies..rare...32 pages.....ONLY.....\$4.95
 - IB003 1925 FREED-EISEMANN MODEL NR7 Neutrodyne Instruction Book, photos, we have added the schematics to this..plus you get a F-E-Radio-Log...this material will display well with radio..6p..\$2.95, With IB002 Both \$5.95
 - CB002 1925 ELECTRIC SUPPLY AND EQUIPMENT COMPANY CATALOG NO. 14: This is Rarest and best illustrated RADIO catalog we have ever seen..Radio was New, the ES & EC were distributors (6 major locations Eastern) to dealers..this is the first catalog book published, therefore we will go into detail its contents, note each page will be suitable for framing if you want to pull it apart, here it is: Musicmaster-Ware models: 50,60,100,140,175,215,250,300,400, 460-(each page for each model) Speakers: V, VIII, XI, XII, XIII, 14" & 21" Horn Speakers, Weston Parts; Kolster Models: 6-A,6-B,8-B,8-C, BRANDES: Speakers: HORN types-Table Talker, "H", H-type in cabinet, Cone, Superior Headsets, Navy-types; Eagle models; Neutrodyne D, F, Cl, C2, C3, Mohawk Models: VA, Masterdine: M-50, Tower Products: Headsets-S-T- Horn Spks: 8 1/2", 13", 14", Meistersinger, Midget Horn, Gold Star Radio Sets: 51, Crystal, C111-1 tubes, C112-2-tuber, C113-3-tuber, ERLA Models: De Luxe, Standard, all major parts Loop Antennas, RCA TUBES: WDL plus 11 others, Philco: Parts, Batteries, chargers, Bakrite: Chargers, There are many other major manufacturers and their products listed: From clips to test equipment; Jewell, Universal, Na-ald, Allen-Bradley, Mar-Co, H&H, Dubilier, Keystone, Premier-Ensemble Kit Radios, Karas, Py/RADIOlin, (Dupont), Raco, Bassett, Hafner, Effarsee and Eveready..75 8 1/2 x 11 pages..very educational, ONLY \$9.95.
 - IB004 1928 CROSLY SHOWBOX MODEL 706 Instruction Booklet..4page..\$1.95.
 - IB005 L924 RADIOLA INSTRUCTION BROCHURE: Models: Radiola III, III Amp, III-A & Super-Hetrodyne (second Harmonic) same as VIII only was the first semi-portable from original fold-out with all wiring and tube hook-up. Supplement 6p..\$1.95.
 - IB006 1921 Q-R-S Redtop-Radio-Tube Sales Brochure w/ all Technical Specs...\$0.95.
 - MC01 RCA COLOR LABEL REPRINTS: These are reprinted in color from the original labels: Model 100-A, 103 Loudspeaker base, and Radiola 64 Super-Heterodyne Labels.. Now you can cut out these labels and glue to the bases of their respective speaker, the 64 to cabinet (bonus) can't tell from original all 3 on same artwork...\$2.00.
 - MC02 MAGNAVOX CALL LETTER COLOR SHEETS 2 sheets-brown-yellow of 1776 radio station call letters from CBA-WEAS-WEU-toYNKW reprinted from original sheets, cut out the desired station and add them above the early-push-button radios, each is 1/4" x 1/2" will fit most any radio..a must for complete restoration...\$2.00.
 - M003 DIAL CORD STRING AND BELT GUIDE FOR any 1938-1947 Radio: \$1 +.13¢ Stamp
- NOTE: Need a copy of the new 1977 Radio Antiquers Directory and Collector's GUIDE SERVICES..always changing..everything from A to Z \$5.00 COLOR \$9.95
- IMPORTANT: UNLESS OTHERWISE SPECIFIED ALL BOOKS SHIPPED BOOK RATE: For First Class ADD \$3 per book, Special Handling to 2lbs .50¢, some weigh over; Insurance extra 40¢, 80¢ to \$100, Calif. Residents 6% Tax, if in doubt leave your check Blank, We Fill-IN and/or REFUND Excess, PLEASE any INQUIRY, YOU send Postage.
- CANADIANS: Same as USA, NO Insurance on Air, Payable in US FUNDS, NO STAMPS, ADD \$2.50 for your P. Check exchange rate, SAME FOR OTHER COUNTRIES: US Postal Service now requires a week for F/C, BK RATE 3-4 weeks, WE require 10 days to Process and Deliver. ORDERS OVER \$30 FREE Bonus, Money-back-Guarantee on all items-15 days, ORDER ALL: Historical Radio Services, Box 15370 Dept.HSI Long Beach, Ca. 90815, USA

for those who want to remember...

for a better deal...like buying a car ...even though the RATES are the same ...the CLERKS ARE DIFFERENT. Always add Insurance. It is best NOT to buy the 0-15 plan for 4.0¢...because although your package is insured there is no signature to be signed by the receiver and the package is harder to track down in the system...if you have an item worth \$3..put insurance of at least 60¢, \$15-50...You get a signed receipt on both ends of the transaction and it is easy to trace through the system.

Many of you perhaps know these helpful hints, if you do fine, but before you get impatient, mad at us collectors/dealers who provide these services, or stop ordering or subscribing to our hobby Publications, write to your congressman about improving the Slow Time or Services the P. O. is forcing on us...this way we all will have a better relationship. We never covered many problems that happen and hoped we have not bored you with a lot of communications not directly involved with Antique Radio. We both want to save time and money and keep our hobby booming.

If these postal rates are confusing and you are sending a personal check...leave it Blank, the receiving party can fill in and or refund excess...if still in doubt above the dollar sign..Write not over XXXX Dollars. Last but not least...when corresponding with anybody seeking information on an old Radio you will get faster service by sending a LARGE SELF-ADDRESSED-STAMPED-ENVELOPE No. 10 Business size...most large lists or answer requires this type, Don't send a very small SASE like an invitation notice, they easily get lost anyway.

73s
Brent Dingman
Box 1537, Dept. HS-1
Long Beach CA 90815 U.S.A.

were mailed to the club's post office box and nineteen were hand delivered. One ballot was declared void because eight candidates had been indicated.

The ballots were counted by Rob Glass and Dan Haeefe. Dick Palmer and Raidy tabulated the results while Sue Crawford oversaw the entire process.

In accordance with the rules set by the election committee, the ballots will be kept for six months, then destroyed. They are in the possession of Dan Haeefe and are available for inspection by any member upon request.

Following the March membership meeting, the new board met to elect a president for the 1977-78 term. Joe Crawford was chosen to replace Jim Coontz in the secret ballot election.

An address for SPERDVAC is:
3146 E. Orangethorpe Ave. #B
Anaheim, California 92806.

FIND OF THE MONTH

I was on a service call in the Northwestern part of the state recently and stopped in a little "Junque" shop. The owner had a couple of big Zenith consoles he wanted 65 dollars for, so I started to leave, when I saw a 1928 Philco AC console (floor model). He told me it was only twenty bucks because it didn't work. I asked him if he had any tubes at all - and he said he had a "box full" he'd throw in if I bought the Philco. In the dark of the shed I couldn't see what was in the large box, but there was an OLA on top so I bought the whole works for \$20. When I got the stuff home I found there were several hundred

TIMES HERALD RADIO CARD

TUESDAY...EARLY WEDNESDAY C—Columbia; N—National; M—Mutual; A—American. Time: Central War Time.

KRLD, 1080 K's.	WFAA-WBAP,820	WRR, 1310	KGKO, 570	KSKY, 660
P. M.				
2:00 Irene Beasley (C)	Women of America (N)	Griffin, News	Best Sellers	News: Can't Lose
2:15 Count of Monte Cristo	Ma Perkins (N)	Swim and Live	Best Sellers	Stars From Sky
2:30 Sing Along Club	Pepper Young (N)	Platter Matinee	Ladies Be Seated	Song Leaders
2:45 Linda's First Love	Happiness Right (N)	Sepia Serenade	Ladies Be Seated	Music Shelf
3:00 House Party (C)	Backstage Wife (N)	Songs for You	Time Views News	News: In the Groove
3:15 House Party: News	Stella Dallas (N)	Hymn Book	Hymns We Love	In the Groove
3:30 Casa Cugat	Lorenzo Jones (N)	Rhythm Romance	Dance Away	In the Groove
3:45 Today in Texas	Widder Brown (N)	Jerry Wright Carr	Dance Away	Men of Rhythm
4:00 Jam Session	Girl Marries (N)	News: Day's Hits	Here's Romance	News: Varsity Drag
4:15 Johnson Family Singers	Portia Faces Life (N)	Who's Who in Radio	Victory Swap	Varsity Drag
4:30 News: Krazy	Plain Bill (N)	Who's Who in Radio	Market Reports	Varsity Drag
4:45 Rhythm by Request	Page 1 Farrell (N)	Who's Who in Radio	Hop Harrigan (A)	Varsity Drag
5:00 Texas Rangers	Young Dr. Malone	Swingtime Serenade	Terry and Pirates	News: Washington
5:15 Ed C. Hill: News (C)	News: Evans	Superman	Dick Tracy	Time Was
5:30 Mender Lowrey: News	All-Star Parade	Mystery House	Jack Armstrong	Man With Band
5:45 World News: J. Harsch	News Report	Tom Mix (M)	Charlie Chan	Musical Cocktails
6:00 Movies on Parade	Supper Club	Fred Morrison	Headline Edition	News: Music
6:15 Big Town (C)	News of World (N)	News: Sports	E. Gram Swain (A)	Musical Bar
6:30 Amer. Melody Hour (C)	News Roundup	Sports: Melody Hired	Westerners	Air Go-Air Show
6:45 Amer. Melody Hour (C)	Headliner Time	Melody Hired	Theater Party	Crosby Records
7:00 Big Town (C)	Ginny Simms (N)	Frank Sinatra (M)	Pic and Pat (A)	News: America Meets
7:15 Big Town (C)	Ginny Simms (N)	New It Can Be Told	Tomorrow's News	Man Behind Music
7:30 Theater of Romance	A Date With Judy (N)	Adventures of Falcon	Alan Young (A)	Sky Serenade
7:45 Theater: Bill Henry	A Date With Judy (N)	Adventures of Falcon	Alan Young (A)	Show Tune Time
8:00 CBS Presents Corwin	Navy Hour (N)	Gabriel Heatter	Gay Lombardo	Five-Star Final
8:15 CBS Presents Corwin	Navy Hour (N)	Real Stories (M)	Gay Lombardo	
8:30 The Doctor Fights (C)	Victor Berge (N)	American Forum (M)	Hospital Band Election	
8:45 The Doctor Fights (C)	Victor Berge (N)	American Forum (M)	Pop Music	
9:00 Service to Front (C)	Man Called "X"	Waltz Time	Let's Discuss It	
9:15 Service to Front (C)	Man Called "X"	Wings Over Memphis	Let's Discuss It	
9:30 Two Cities Quiz	Sigmund Romberg (N)	Jim Alderman: News	County Fair (A)	
9:45 Two Cities Quiz	Sigmund Romberg (N)	Baseball Scores	County Fair (A)	
10:00 World at Large	News Report	Corwin Riddell: News	News: Larry DuPont	
10:15 Wrestling Matches	Music For You	Bobby Walker Orch.	Milt North Trio	
10:30 Wrestling Matches	Everything for the Boys	Charles Arnow Orch.	Meet the Maestro	
10:45 Wrestling Matches	Everything for the Boys	Art Kassel's Orch.	Music: News	
11:00 Wrestling Matches	News: Baxter Quartet	Benny Strong Orch.	Oddities: Orch.	
11:15 Buffalo Presents (C)	Baxter Quartet	Benny Strong Orch.	Gay Claridge Orch.	
11:30 Frankie Masters Orch.	Dream Nocturne	Harry Jennings Orch.	Euss Morgan: News	
11:45 Orch.: News	Nocturne: News (N)	Patti Orch.: News	Orch.: News	

WEDNESDAY'S EARLY PROGRAMS

A. M.				
5:00	Musical Revue			
5:15	Radio Revival			
5:30	Texas Roundup			
6:00	Texas Roundup	Texas Farm and Home	Blue Ridge Ballads	News: Richard Bill
6:15	News: Farm Edition	What Happened	Markets: Ballads	Richard Bill's Texas
6:30	Lester's Stamp Gilt	Farm Editor	Music for Remembrance	Bright Spot
6:45	Hillbilly Extra	Checkerboard Funfest	News: Music	Rev. Hawkins
7:00	News Roundup (C)	Morning News	Wake Up and Sing	News: Saddle Songs
7:15	Jack Birch Show	Early Birds	Morning Parade	Sky Patrol
7:30	News: Ves Box	Early Birds	News Reports	Sky Patrol
7:45	Ten-Two-Four Time	Today's News	Money Market	Sky Patrol: Headlines
8:00	Morning News (C)	Date at 8	News: Camp Meeting	Breakfast Club (A)
8:15	Edward McHugh	Early Birds	Camp Meeting	Breakfast Club (A)
8:30	Texas Rangers	Lean Back and Listen	Morning in Dallas	Breakfast Club (A)
8:45	News: Color in News	Melody Souvenirs	Know Everything	Breakfast Club (A)
9:00	Vallant Lady (C)	Road of Life	News: Memories	My True Story
9:15	Light of the World (C)	Lora Lawton (N)	Uncle Lee	Really Happened (A)
9:30	Strange Romance	News: Markets	News: Theater Review	Hymns of All Churches
9:45	Bachelor's Children	Joyce Jordan (N)	Bill Boyd	Listening Post
10:00	Modern Romances	Fred Waring	Bill Boyd	Tom Brennenman (A)
10:15	News: Post Parade	Fred Waring (N)	Take It Easy	Tom Brennenman (A)
10:30	A Woman's Life	Barry Cameron (N)	What's Your Idea? (M)	News: Martya
10:45	Aunt Jenny Stories	David Harum (N)		Ted Malone
11:00	Kate Smith Speaks (C)	Life Beautiful	News (M)	Glamour Manor
11:15	Big Sister (C)	News: Religion: Notes	Merton Downey (M)	Glamour Manor
11:30	Helen Trent Romance	Hollywood Preview	News: Varieties	Homespinners
11:45	Our Gal Sunday	Servess Program	Noonday Varieties	Ted Graves
12:00	Stamps Quartet	Noonday News	News: Harris	News Reports
12:15	Midday News	Smile Program	Harassed by Harris	Chuck Warren Gang
12:30	Aunt Mary	Norton McGiffin: News	Lopez Luncheon	Coffee Grinders
12:45	Crazy Gang	Red Hawk	Tuneful Topics: News	Star Reporter
1:00	Two on a Clue (C)	Juniper Junction	Cedric Foster: News	William Nichols (A)
1:15	This Life Is Mine (C)	Today's Children (N)	News: Music	Ethel and Albert
1:30	Editor's Daughter	Woman in White (N)	Queen for Today	New Freedom Home
1:45	Tina and Tim (C)	Judy and Jane	Queen for Today	Novellette: News
2:00	Irene Beasley (C)	Women of America (N)	Griffin Reporting	Best Sellers
2:15	Count of Monte Cristo	Ma Perkins (N)	Platter Matinee	Best Sellers
2:30	Sing Along Club	Pepper Young (N)	Melodic Moments	Ladies Be Seated
2:45	Linda's First Love (C)	Happiness Right (N)	Sepia Serenade	Ladies Be Seated
3:00	House Party (C)	Backstage Wife (N)	Songs for You	Time Views News
3:15	House Party: News	Stella Dallas (N)	Hymn Book	Hymns We Love
3:30	Casa Cugat	Lorenzo Jones (N)	Rhythm Romance	Dance Away
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4:00	Jam Session	A Girl Marries (N)	News: Day's Hits	Here's Romance
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4:30	News: Krazy	Plain Bill (N)	Who's Who in Radio	Markets
4:45	Rhythm by Request	Page 1 Farrell (N)	Who's Who in Radio	Hop Harrigan
5:00	Texas Rangers	Young Dr. Malone	Swingtime Serenade	Terry and Pirates
5:15	Jimmy Carroll Sings	Vincent News	Superman	Dick Tracy
5:30	News: Mender Lowrey	All-Star Parade	Mystery House	Jack Armstrong
5:45	World News: J. Harsch	News Report	Tom Mix (M)	Charlie Chan
6:00	Sen. J. C. O'Mahoney	Supper Club	Fred Morrison	Headline Edition
6:15	Danny O'Neil	News Roundup	Wind News	E. Gram Swain (A)
6:30	Friendly Music	News Roundup	Sports: Melody Hired	Long Ranger (A)
6:45	Stars: Post Parade	Headliners	Melody Hired	Long Ranger (A)

Gentlemen:
I would appreciate your advising me of the address of the New Jersey Historical Radio Society and the name of one or more of its officers. Thanking you for your attention to the above, I am
Very truly yours,
AMAZON EXPLORERS
Richard G. Brill
Route 9
Parlin N.J. 08859
EDITOR...Does anyone know about this Society?

Club News

Four new members were added to the SPERDVAC Board of Directors during the March 12 election. The new directors are Pat McGee, Bobb Lynes, Joe Crawford and Carl Schoffstall. Jim Coontz, Tom Elkins and Steve Jelf were re-elected.

Only about one third of the membership voted. Forty-eight ballots

tubes, 01A's, 99's, 26's, 27's, 19's, 71A's, etc., plus a couple brass base tubes and several Arcturus blues! All tubes but a half-dozen tested good!

The Philco operates beautifully after replacing the output amp.

Keep up the fine work on Horn Speaker, and I'll be looking forward to the next issue.

Best regards,
Steve Danielson
5633 Emerson Ave. S
Minneapolis MN 55419

Has anyone ever heard of a "McMillon Electric"? I found one! It is a radio in a drawer with 5 Kellogg 401 tubes, a 171 output and 80 (213) power tube, copper plated chassis, clear enclosed tuning capacitors (3). I finally got it to work...very unusual. I collect Kellogg, McCullough 401, and Marathon A 608 tube sets. I would be happy to hear from anyone regarding schematics, literature, radios, etc.

Regards,
Mel Rosenthal
507 S. Maryland Ave.
Wilmington, Delaware 19804
Phone: 999 0633

Club News

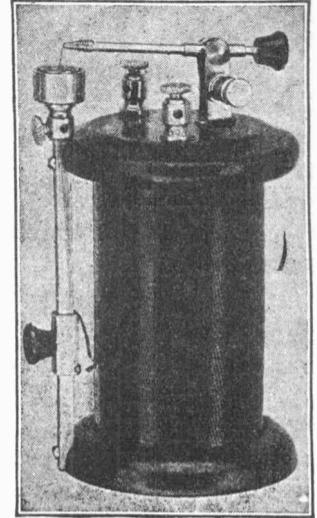
SOUTHWEST VINTAGE RADIO AND PHONOGRAPH SOCIETY

In spite of a drenching rain the SVRPS auction was a success. Especially, it was an exposition of strange pricing. A Crosley 51, a cute bookshelf battery set of the early 20s, was sold for only \$37.00 while a Radiola 48, a beautiful console of the early 30s, captured a price of \$230.00.

A Royal phonograph carried a price of \$280.00 while an English Victor was sold on the block at a bid of \$375.00. An Atwater Kent 20, big box, in fair condition sold for \$37.50 and a Radiola III in good condition would not bring a minimum bid of \$70.00. A Freed Eisemann NR-9 did not even carry \$40.00. And a AK 33 that looked good and working could not fetch a price of \$55.00. But an Atwater Kent 20 with an AK horn speaker carried a ringing price of \$120.00.

Horn speakers and AC radio sets were the stars of the auction.

Crystal Receiving Set \$2.50



This is the Ritter Grand Crystal Set in mahogany finished wood. It has a variable tuning capacity of 150 to 600 meters.

Tested and approved by the POPULAR RADIO LABORATORY; also guaranteed to receive concerts 25 miles under normal conditions.

The Ritter Grand Crystal Set is 6 inches in height, with neat mahogany polished base and top, and has a tuning capacity of 150 to 600 meters.

"SPECIAL OFFER"

Ritter Grand Crystal Set with full aerial equipment and single guaranteed phone with head band. All neatly boxed. Price, \$5.00.

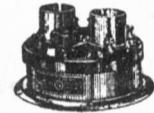
We also invite dealers' inquiries.

RITTER RADIO CORPORATION
232 Canal Street New York City

1923 ad

ATWATER KENT

RADIO



2-stage Amplifier

You can be sure that you will get the best results in radio performance, if it's ATWATER KENT Equipment.

Every unit is of the same accuracy—the same high quality which has characterized ATWATER KENT Products for more than 25 years.

Send for the illustrated folder

ATWATER KENT MFG. COMPANY
4933 Stenton Ave. Radio Dept. Philadelphia

Makers of
THE WORLD'S HIGHEST GRADE IGNITION
STARTING AND LIGHTING

1923 ad



This auction held by the Southwest Vintage Radio and Phonograph Society gave collectors a good measure of fun and sets which they carried home.

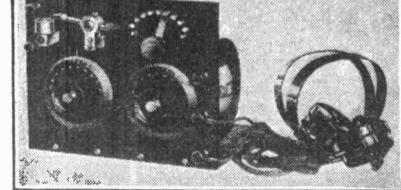
1923 ad

Type CV Crystal Receiving Set - \$25.00

Beyond doubt the most advanced type of crystal set on the market for the clear and efficient reception of radio speech and music and telephone reception. Wave length range, 700 meters.

We caution the public unfamiliar with radio to be careful about the cheap, inefficient and poorly constructed crystal sets that are beginning to flood the market. We are the oldest dealers in America selling complete everything in radio. Established 1908.

In tests with this set the radio telephone station at Detroit (60 miles distant) was heard in Toledo with the greatest clearness and sweetness. Ideal set for persons residing within range of powerful radio stations in New York City, Springfield, Mass.; Pittsburgh, Chicago and Detroit, where wonderful concerts are broadcast every evening.



Exclusive features of these sets

Tuning extremely selective. With type CV we use Duck's superselective Variometer and high-class panel condenser. With type C we use Duck's superselective Variocoupler and panel condenser. Each type has its adherents. Same type of tuner and condenser as on our \$100.00 sets.

Another exclusive feature is the binding post for adding vacuum tube detector and amplifiers, thereby greatly increasing the range and avoiding discarding the set if these instruments are desired.

Grained formica panel 8x6 1/4 inches. 3-inch dials. Crystal detector our best type. Murdock 2000-ohm receivers supplied as standard. Holzer-Cabot \$8.00 receivers, \$3.75 extra.

Complete instructions for setting up and operating. Any child can operate them. No battery or power necessary. Everything complete except antenna material.

Type CV crystal receiving set as described, hinged cabinet	\$25.00	Renewal crystal mounted	\$.75
Type CV crystal receiving set as described, hinged cabinet	30.00	If Holzer-Cabot \$8.00 head sets desired, add	3.75
Type C crystal receiving set as described, hinged cabinet	28.50	Material for a 50-foot 2-wire antenna	5.00
Type C crystal receiving set as described, hinged cabinet	31.50	Material for a 50-foot 4-wire antenna	6.00

THE WILLIAM B. DUCK COMPANY
230-232 SUPERIOR STREET - - - TOLEDO, OHIO

1923 ad

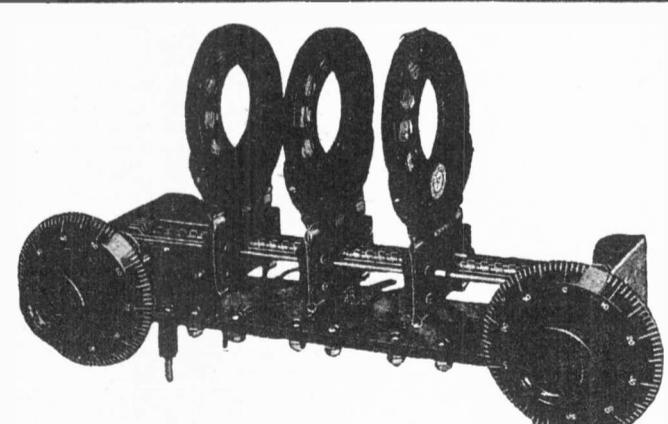
Don't just ask for a Head Set - Say:

DICTOGRAPH

Choice of experts

Sold by all Responsible Dealers & Department Stores

DICTOGRAPH PRODUCTS CORP.
220 W. 42nd St., New York



CURKOIDS

THE SUPREME INDUCTANCE

The Curkoid of a year ago was the best inductance known. We now present our improved Curkoid after months of research and test. It is found in the same form—a Curtate Epitrochoid—but has proportions which result in 25% increased effectiveness.

Curkoids are not affected by any "exterior influence" or "body capacity" whatever. They have very low distributed capacity, high inductance, extremely low high frequency resistance—and this resistance "does not rise with the increase of frequency as rapidly as with other types of inductance" (unso- licited comment). All these make our resonance curve very acute and of greater height.

Our new model Dual and Triple No. 3 Couplers are the only accurate scientific method of coupling interchangeable inductances. They produce perfect threading of the magnetic flux fields. They have micro- meter movement of 1/400 inch to one graduation on the dial.

Essentially our products are improvements that make radio worth while.

Our booklet giving tried and approved hook-ups, general authentic information, radio data, etc., Price 10c.

RIEGER RESEARCH CORPORATION
112 WEST 44TH ST. NEW YORK CITY

Movie-Radio Guide VISITS:

Bob Hawk's "Take It or Leave It"



ALWAYS GOOD for a laugh is Bob Hawk's warm-up gag for studio audience, which goes like this: "Are you disappointed in my appearance?" and without waiting for their answer—"What do you expect for \$64? Tyrone Power?"



ABOVE: Freddy Martin, whose band was playing at the Ambassador Hotel in Los Angeles when Bob staged his broadcast there, picks first number in drawing to select lucky contestants who will go on the air. Producer Bruce Dodge holds the bowl



LEFT: With two thousand kibitzer-guests on hand in the Fiesta Room to advise her, laughing contestant decides whether she'll "take it or leave it." If she's like ninety percent of contestants, she'll take it. Note money on the table—hers if she's lucky

A TYPICAL American fondness for taking a chance is exploited to the full by short, hale-and-bearty Bob Hawk on his Sunday (CBS) quiz, "Take It or Leave It." The Hawk show dares contestants to double their winnings with each new question answered correctly, gives them alternative of risking entire winnings on the next question or of dropping out, satisfied with what they have. Maximum prize, \$64; minimum, \$1. While New Yorkers have enjoyed going to "Take It or Leave It" broadcasts for a year, recently other cities got a crack at prize money when Bob went on tour. MOVIE-RADIO GUIDE's photographer caught the show in Los Angeles, where demand for tickets necessitated a repeat performance in the Ambassador Hotel's Fiesta Room before an audience of two thousand. "Take It or Leave It" is back in New York now, but wherever it's staged the striking feature is Mr. Hawk's amazing ability to make contestants happy, win or lose. He gags ad-lib, joshes the audience, consoles losers, congratulates winners with the sure touch of the showman listeners discovered some years ago in Chicago when Bob invited them to his locally broadcast recorded-music program. The same showmanship put him on MBS with his first quiz, "Name Three," and now on CBS with his current success—presented here—"Take It or Leave It."

Next Week:
"Battle of the Sexes"



JUST BEFORE AIRTIME a hush falls over audience as Bob cautions against too audible enthusiasm, which may spoil show for listeners. Ken Niles (right), pinch-hitting on West Coast for regular "Take It or Leave It" announcer David Ross, and producer Dodge stand by. On the air, Bob explains game



UNUSUAL BREAK for contestants on this show is the chance to choose subject of their questions from those listed on blackboard. They can choose here from a list of nineteen subjects, ranging from Central and South American capitals to horses and slang. Only one subject to a contestant!

—Gene Lester Photograph—

GOOD NEWS FOR YOU!

WE HAVE SEARCHED FAR AND WIDE— AND FOUND OFFERINGS YOU'LL LIKE!



VINTAGE RADIO HAS GREAT BOOKS FOR YOU!

1927 RADIO ENCYCLOPEDIA



Own this authentic reproduction of Gernsback's classic. Browse through radio's heroes (who's Marconi?) and hardware (what's a coherer?) of the old days. 175 fascinating pages. Our hard-cover version is a serialized limited edition, an ideal gift.

DELUXE HARD-COVER \$14.95

A FLICK OF THE SWITCH 1930-1950

Here's your time trip through the great days of radio broadcasting and the dawn of television. Revisit the Lone Ranger, Philco "cathedral" radios, old "Ham" days and many more. You'll revel in 312 pages of story, old ads and over 1,000 pictures.

HARD-COVER \$10.95, HANDBOOK \$8.95



FROM TIN FOIL TO STEREO

Here's your second edition of the 1877-1959 phono classic, now extended to 1976.

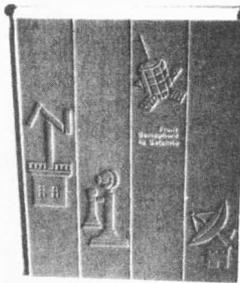
Discover the story of recorded music in 30 fascinating chapters. Enjoy photos of exotic music machines from early cylinder phonographs to stereo. Own THE reference for phonograph enthusiasts. 550 pages.

HARD COVER \$19.95
HANDBOOK \$9.95

FROM SEMAPHORE TO SATELLITE

Here is a great, big, beautiful book covering the history of worldwide wired and wireless communications in 343 pages. Printed in Europe in 1965, on the 100th anniversary of the International Telecommunications Union. Richly illustrated, with deeply embossed hard cover. Only 17 copies available in the U.S., but we found 100 copies in Europe.

A REAL SHOWPIECE FOR \$19.75



J.W.F. PUETT'S SILVER GHOSTS



E.H. Scott and his immortal radios have been recaptured in 72 pages of pure Scott. Includes circuit diagrams of all the truly classic models, along with old ads, articles and the story of E.H. Scott's creative life. If you have a pre-1946 Scott radio, or hope to own one some day, you've got to have this book.

BE A SCOTT EXPERT FOR ~~\$10.00~~ ^{now only \$7.95}

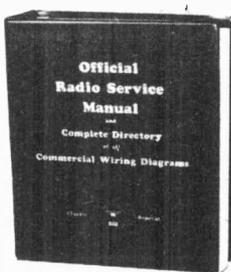
VINTAGE RADIO 1887-1929



You'll enjoy this fascinating pictorial story of pioneer days in wireless and radio. Relive the days of Marconi, old spark transmitters, and the struggles of early radio broadcasting. It's the radio collector's reference, with over 1,000 pictures on 263 pages.

HARD-COVER \$10.95
HANDBOOK \$8.95

GERNSBACK'S 1931 SERVICE MANUAL



Hugo Gernsback's 550-page manual of over 1500 pre-1932 radio diagrams is still available. We make periodic reprintings of this valuable book, to customer order. The Manual includes over 300 radio models not in Rider's manuals. Bound in a large, handsome post-type cover for easy reference.

ORDER YOURS NOW AT \$40.00

1921-1932 RADIO COLLECTOR'S GUIDE



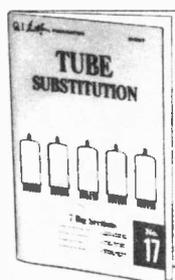
This book makes you an "instant expert" as you go prospecting for those fine old radios. It eliminates guesswork in determining a set's age and "pedigree." There are 264 pages loaded with over 50,000 facts on 9,000 radio models made by 1,100 manufacturers.

HANDBOOK \$6.95

Sam's TUBE SUBSTITUTION HANDBOOK

Here's your great helper to bring those old sets back to life. Lists over 13,000 substitutes, including American-American, American-Foreign, and Foreign-American. Use it to find substitutes, and to find out if that "odd" tube was just stuck in to fill the socket. Two-book bargain; shelf reference plus handy pocketbook, 96 pages each.

TWIN-PAK BARGAIN \$2.95

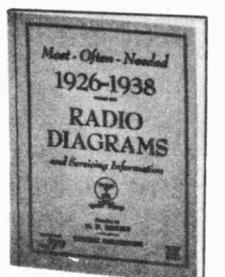


MOST-OFTEN-NEEDED 1926-1938 DIAGRAMS

This reprint of Morris Beitman's Supreme Publications book shows circuit diagrams for 600 radio models. Its 240 pages are valuable for historical circuit information, and are great aids in restoring those old sets. Made from Supreme's original artwork, it is clear and readable.

HANDBOOK \$7.00

Also 1941, 1942, 1948 and 1950 Editions \$4.00 each.



ADD TO YOUR SHELF OF FASCINATING BOOKS!

DISCOVER THE EXCITING RADIO COLLECTOR'S HOBBY!



VINTAGE RADIO NEWS NOTES Winter-Spring 1977

OUR NEW OFFERINGS on the front page of this flyer are the result of lots of research and poking around for new things that our friends will like. We are pleased to offer the new, enlarged FROM TIN FOIL TO STEREO, which has just been produced by Howard W. Sams. We have also been chasing FROM SEMAPHORE TO SATELLITE for some time, but found only 17 available copies in the U.S. We finally found 100 copies in Europe, and may get still more copies of this beautiful book. We couldn't pass up J.W.F. Puett's superb SILVER GHOSTS, and he had a special reprint job made for us. We're offering the Howard W. Sams TUBE SUBSTITUTION HANDBOOK because we use ours all the time, and figure you might need it, too. The speaker cord idea has been brewing for some time. We'll do headset cords later, if enough of our friends say they want them. Do you?

FEDERAL RADIO fans will want the Schamberger reproductions of instruction booklets for models 8, 9, 55/56, 57, 58, 59, 61, 102, 110, 135, 140 and Federal Junior. All these pamphlets, a total of more than 120 pages, are in an attractive Federal folder reproduction. The set is yours for the bargain price (for Federal fans, that is) of \$35.00.

Free VINTAGE RADIO IRON-ONS are our latest giveaway. Here's the greatest way to get people to come to you with old radio sets. It's the Vintage Radio symbol with the message "Old Radios Turn Me On." Great for tee-shirts on you, your kids or your grandkids. We'll send one with each order.

Alan Douglas' book on radio restoration is ready to go, except for available cash. Anyone want to take a plunge in publishing?

We are pleased if our books helped you pass the wintertime away in pleasant recreation. We are also pleased to keep our offerings coming to you. Our prices are the lowest we can offer and still bring good things to you.

Very best regards,
The McMahons
Morgan and Gladie McMahon

NO MORE STAMP PRINTS WHEN THESE ARE GONE!

CIRCUIT DIAGRAMS



We will research any pre-1951 radio model and send you the circuit diagram and any other available repair information. We'll also tell you the year in which that model was introduced. Your money back if we don't come up with at least a circuit diagram!

We now have Canadian diagrams, too!

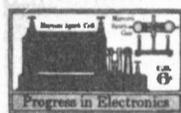
ANY RADIO MODEL \$3.50

SPEAKER CORD SPECIAL



Each mailing, we try to come up with something unusual and useful. This time it's a 2-conductor speaker cord, made of traditional materials with the old-fashioned overbraid. Dark brown, with phone tips at one end and spade lugs on the other. Turn those beautiful old speakers into showpieces you can use, display or trade. Specially made; allow several weeks for delivery.

YOURS FOR \$10.00,
3 FOR \$27.50



MAGNIFICENT COLOR PRINTS FROM ORIGINAL ART

These fine "Progress in Electronics" prints are the most striking artwork we've seen in years. Made from the original painting, each print is 8" x 10" with its own coordinated matte background. Prints are on beautiful heavy stock with high-quality inks. It takes nine passes through the printing press to make each of these four masterpieces!

You have a choice of prints for framing, or plaques ready to hang on your wall. Originally conceived as executive gifts by Hall-Mark Electronics, these fine pictures are made by special arrangement with the U.S. Postal Service. Now a limited edition, by Government decree. Here's the ideal gift for you, your relatives and friends!

FOUR BEAUTIFUL PRINTS FOR FRAMING, \$7.50. READY-TO-HANG PLAQUE SET, \$18.50

GET PEDIGREES FOR YOUR PET RADIOS!

Circuit diagrams are our fastest-growing service. Some of our friends want them immediately (or sooner) to get their fine old sets playing again. Others want diagrams to add to the interest value of their collections. We will locate and send you the circuit diagram and other available information on your pre-1951 set for a paltry \$3.50. Send tube layout if you can't find a model number.

MANUFACTURER

MODEL

_____	_____
_____	_____
_____	_____

WE WILL BUY OR SWAP for manuals and circuit books that help us help you. Please write us about what you have, with price or swap propositions.

WE WELCOME IDEAS ON HOW WE CAN SERVE YOU BETTER.

DON'T WAIT; ORDER NOW FOR QUICK DELIVERY!

Send check or money order to Vintage Radio, Dep't D, Box 2045, Palos Verdes Pnsln., CA 90274
TEN-DAY GUARANTEE. WE PAY POSTAGE. CALIFORNIANS ADD 6% SALES TAX.

_____	\$ _____	_____	\$ _____
_____	\$ _____	_____	\$ _____
_____	\$ _____	_____	\$ _____
_____	\$ _____	_____	\$ _____

PLEASE PRINT CLEARLY!

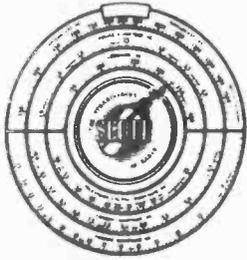
Total \$ _____

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____

FREE! VINTAGE RADIO IRON-ON EMBLEM FREE!

PRICES EFFECTIVE UNTIL JULY 1, 1977.





PUETT ELECTRONICS

PRESENTS

P.O. BOX 28572 DALLAS TEXAS 75228

THE CLASSIC RADIO NEWSLETTER

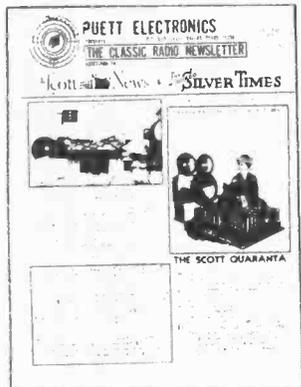
SUCCESSOR TO

The Scott News & The McMurdo Silver Times

send first class postage stamp for newsletter sample

JAN. FEB. 1976

THE SCOTT QUARANTA
1935 - \$2,500.00
forty tubes -----
FEATURED IN THIS
ISSUE

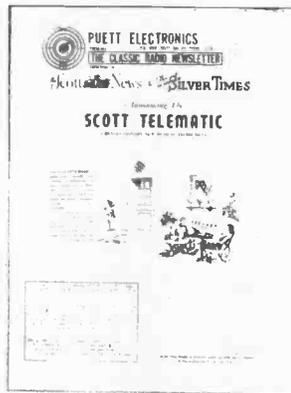


THE McMURDO SILVER
MASTERPIECE VI
1937 twenty tubes
FEATURED IN THIS
ISSUE



MAR. APR. 1976

MAY - JUNE 1976



RCA VICTOR
BERKSHIRE "CONTEMPORARY"
RADIO PHONOGRAPH
PROJECTION TV
1947 sixty-nine tubes
\$10,000.00 ?
FEATURED IN THIS
ISSUE

SUBSCRIPTION RATE

\$5.00 for one year

SIX ISSUES - FOUR OR MORE
PAGES PER ISSUE

BACK ISSUES 91¢ EACH

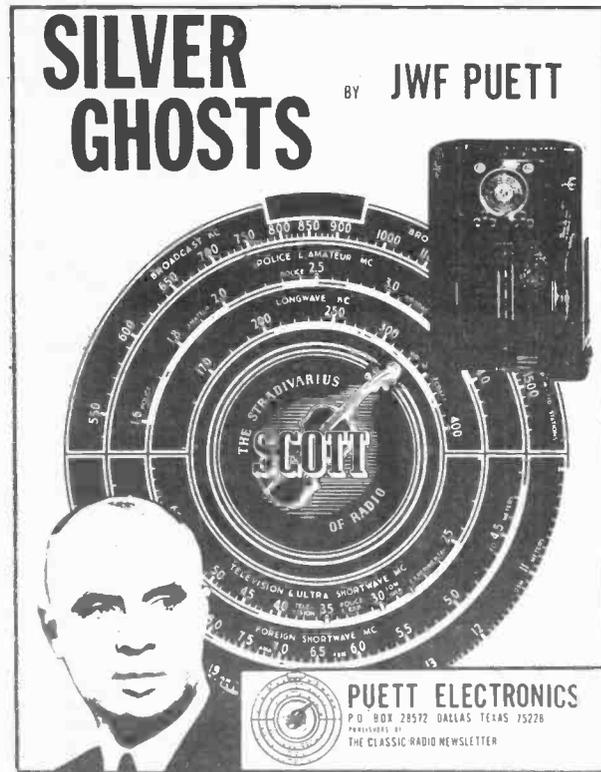


JUL. AUG. 1976

THE SCOTT PHANTOM
DELUXE
1939 twenty tubes
FEATURED IN THIS
ISSUE



ANTIQUE RADIO POSTER by J. W. F. Puett
11 X 14 standard photo size fits available frames, printed
on antique buff poster stock, madcap nostalgia \$1. postpaid



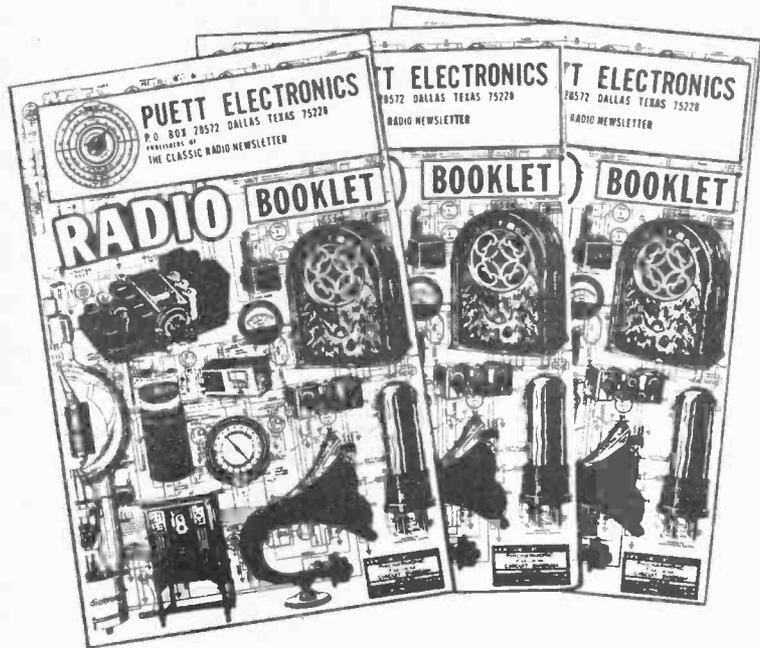
NOW
ONLY

\$7.95 POSTPAID

SECOND PRINTING

SCHEMATIC DIAGRAMS PHOTOGRAPHS STORIES
NEARLY EVERY MODEL MANUFACTURED BY THE E. H. SCOTT
RADIO LABORATORIES FEATURED IN THIS 72 PAGE BOOK

Servicing Your Radio



radio ideas



BE A RADIO EXPERT



FIX ANY RADIO



Use the radio to dance to? At my party?

"But of course, my dear - I just received my PUETT ELECTRONICS booklets and technical data this morning!" "I'll have that old breadboard working as good as new by party time tonight!"

\$2.00 EACH POSTPAID

Radio Ideas

Simplified Radio Servicing

- (1) THE ACQUISITION OF ANTIQUE RADIOS by J. W. F. Puett
- (2) THE COMPLETE RESTORATION OF BATTERY POWERED ANTIQUE RADIOS by J. W. F. Puett
- (3) THE COMPLETE RESTORATION OF AC POWERED ANTIQUE RADIOS by J. W. F. Puett
- (4) WHEN WAS THAT OLD TUBE MADE? by James R. Wilkins

OTHER PUETT ELECTRONICS BOOKLETS WILL SOON BE PUBLISHED - SEE OUR NEW ACQUISITIONS LIST



IN THE AIR OR ON THE AIR

SUBSCRIBE TODAY!!!

RARE TUBES --- 01A -- 99 -- WD-11, etc. OLD RADIO BOOKS, RIDER & SAMS PUBLICATIONS, RADIO RECEIVERS, RADIO TEST & SERVICING EQUIPMENT, TUBES FOR TUBE COLLECTORS, OTHER HARD TO GET ITEMS WHICH ARE NOT LISTED IN OUR PRICE LISTS OR IN OUR CATALOG BECAUSE WE SELL OUT OF THESE ITEMS QUICKLY.

NEW ACQUISITIONS LIST

subscription rate - \$2.00 per year - 4 to 6 issues

THE PUETT ELECTRONICS SUPER ANTENNA - GROUND SYSTEM

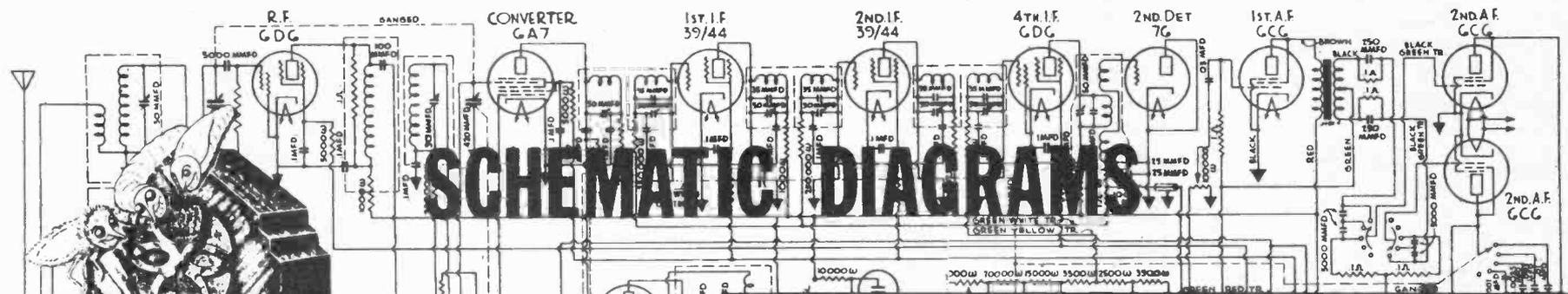
RADIO ANTENNA

EXTREMELY HIGH GAIN, ALLWAVE, HIGH IMPEDANCE, OMNI-DIRECTIONAL, EASY TO CONSTRUCT, TAKES UP VERY LITTLE SPACE, IDEAL FOR ANTIQUE RADIO RECEIVERS, SHORT-WAVE AND BROADCAST LISTENERS, PLANS \$2. POSTPAID.

RADIO

LISTS - DATA

- (1) LIST OF ANTIQUE RADIO SERVICES --- Sources to obtain tubes, books, periodicals, parts, radio receivers, antique radio service and restoration, radio shows on tape, speaker re-coning, tube adapters, schematics and technical data, directory of radio collectors, antique TV, telegraph keys, tube cartons, battery set power supplies, bakelite panel engraving, antique radio clubs, --- others etc. \$2.00 postpaid.
- (2) LIST OF MILITARY (VT) TUBE TYPE NUMBERS VERSUS COMMERCIAL TUBE TYPE NUMBERS -- \$1.00 postpaid.
- (3) CLASSIC RADIO LISTS - Directory of Classic Radio Collectors - 50¢, List of Classic Radio Serial Numbers - 50¢, List of Classic Radio Literature - \$1.00 all postpaid.
- (4) TUBE DATA -- We will furnish data on any tube - research fee \$1.00 postpaid.
- (5) List of Military Radio Equipment Manuals which we have for sale - send first class postage stamp.



SCHEMATIC DIAGRAMS

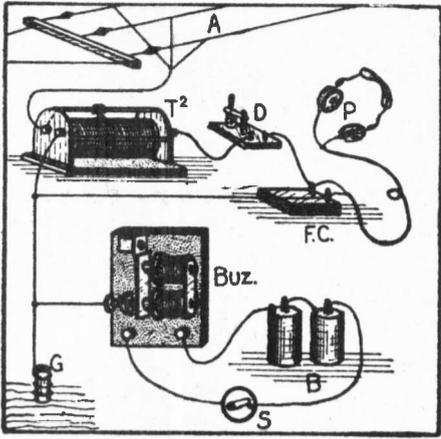
FIX ANY RADIO

WE CAN FURNISH SCHEMATIC DIAGRAMS ON ALMOST ANY RADIO MANUFACTURED BETWEEN 1920 AND 1954 - \$1.50 POSTPAID. WE MUST HAVE THE NAME OF THE MANUFACTURER AND THE MODEL NUMBER. ----- IF THE MODEL NUMBER IS NOT PRINTED ON THE CHASSIS OR ON A LABEL IN THE CABINET, SEND US THE TYPE NUMBER OF ALL TUBES AND THE QUANTITY OF EACH TYPE USED IN THE RECEIVER. A DIAGRAM (DRAWING BY HAND) OF THE TOP VIEW OF THE CHASSIS SHOWING THE LOCATION OF ALL TUBES AND OTHER COMPONENTS WOULD BE HELPFUL. WE CAN OFTEN IDENTIFY A SET WITH THIS INFORMATION. A FEE OF \$3.00 IS REQUIRED FOR THIS RESEARCH - NO CHARGE IF WE CAN NOT FIND A SCHEMATIC DIAGRAM OF A SET WITH THE SAME TUBE LINE-UP.

Receiving Troubles

(1) Jack Pomret, of New York City, asks:

Q. 1. I have a double slide tuning coil, a crystal detector, a fixed condenser and a



A Hook-Up of a Double Slide Tuning Coil, Crystal Detector, Fixed Condenser and Phones, is Shown Above. The Method of Connecting a Buzzer for Testing Crystal Detector is Also Illustrated. A-Aerial, T²-Two Slide Tuner, D-Detector, F. C.-Fixed Condenser, P-Phones, Buz-Buzzer, G-Ground, B-Battery, S-Switch.

pair of 2000 ohm 'phones. I have never heard the Westinghouse Station. My aerial is a single wire about 70 feet long and 50 feet from the ground, strung out from a wash-pole. Only on rare occasions have I been able to receive telegraphic messages.

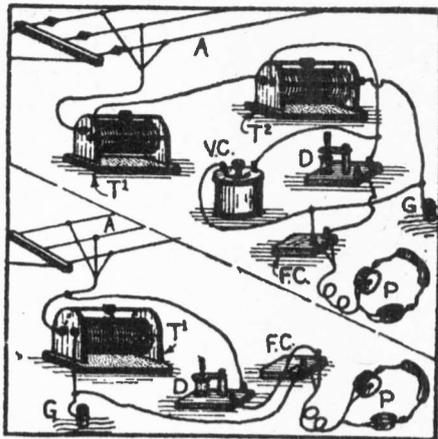
A. 1. Your 'phones are of the regulation type and have been employed by many amateurs very successfully. The reason you are probably not getting the proper results is that you are not adjusting your detector to its point of maximum sensitivity and you are not tuning sharply enough. We would advise that you change your hook-up to conform with the circuit here shown and employ a buzzer test as often as you think necessary.

Miles and Wave Length

(2) Burton Hays, Philadelphia, Pa., asks:

Q. 1. Arlington Station is rated at 2500 meters. How many miles is that?

A. 1. This "rating" which you speak of does not refer to distances in receiving ranges. It is a unit of measurement used to denote the length between the peaks of two adjacent undulations of the same wave



Two Hook-Ups, the First, a Single Slide Tuning Coil, Detector, Condenser and Phones. The Second, in Addition to the Above Apparatus, a Two-Slide Tuner and a Variable Condenser. A-Aerial, G-Ground, T¹-Single Slide Tuning Coil, T²-Double Slide Tuning Coil, D-Detector, F. C.-Fixed Condenser, V.C.-Variable Condenser, P-Phones.

and even tho a station may be rated at 2500 meters it does not necessarily imply that you will be able to hear that station even ten miles away unless your apparatus is so arranged that it can tune up to that wave length.

Q. 2. Please give the hook-up of a single slide tuning coil, a detector, a fixed condenser, and a pair of 'phones.

A. 2. The hook-up is given herewith.

Q. 3. Also furnish the hook-up of a two-slide tuning coil, a variable condenser, and the other apparatus mentioned above.

A. 3. Assuming that you intend to use in addition to the single slide tuning coil a two-slide tuning coil, the hook-up is here shown with the single slide tuner used as a loading inductance.

Buzzer Test for Crystal Detector

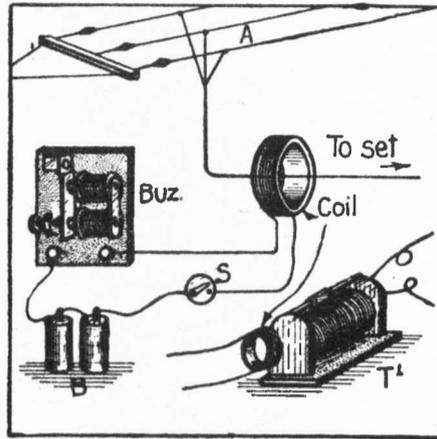
(4) John Hay, of Kansas City, asks:

Q. 1. I have heard that there are other methods of employing a buzzer for testing a crystal for sensitivity besides connecting

the wire directly to the ground lead. Can you give me a circuit diagram for this method?

A. 1. There are several methods of doing this depending upon induced currents.

One way is to wind several turns of wire around the aerial lead before connecting this to the buzzer; another method is to wind several turns of wire around a cardboard tube 2 or 3 inches in diameter and



In Case of Objections to the Use of the Buzzer for Testing a Crystal as Shown in Question No. 1, the System Indicated Above May Be Employed. Buz-Buzzer, T¹-Single Slide Tuner, S-Switch, B-Battery, A-Aerial.

then pass the aerial lead either thru or around the cardboard tube or else permit this coil to approach the loose coupler or tuner so as to react upon it. The buzzer is placed in series with this coil.

Q. 2. Are there any advantages in using these methods?

A. 2. The advantages are slight, but users of this system claim that the sensitive spots so found on crystals are not apt to be lost or burnt and that more sensitive spots are generally found.

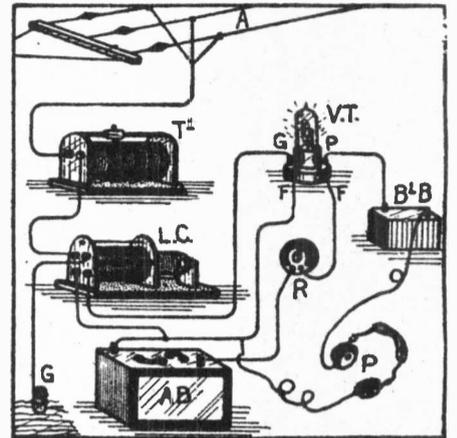
Hook-Up

(5) R. M. Gross, Maybell, Colo., requests a hook-up of a loose coupler, loading coil, variable condenser, 'phones and an audion detector for reception of undamped

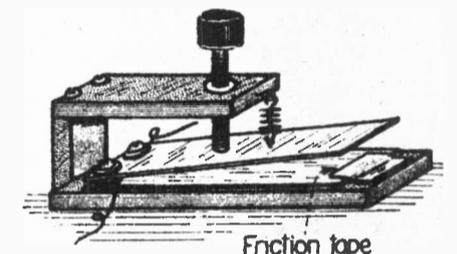
wave signals, and asks:

Q. 1. Will I be able to hear Arlington on this set.

A. 1. You may have considerable difficulty in receiving Arlington time signals on the west side of the Rocky Mountain range, but there are plenty of government stations transmitting time signals nearer your immediate vicinity than Arlington, which would come within your range. Hook-up is given herewith.



A Simple Audion Circuit Which Will Receive Damped Waves. T¹-Single Slide Tuner, L.C.-Loose Coupler, V.T.-Vacuum Tube, B.B.-"B" Battery, R.B.-Six Volt Storage Battery, R-Rheostat, P-Phones, A-Aerial, G-Ground.



The Construction of the Variable Condenser is Shown Above. It is Advisable That Every Amateur Construct One or More of These Condensers as They Can Always Be Used.

Science and Invention for April, 1922

TUBES

FOR SALE ENTIRE LOT HIGHEST BID
CONTACT DICK SULLIVAN, 66 HILLOCK ST., ROSLINDALE MA 02131

2--31	1--885	2--4HA7	6--6B05	2--6H4	3--6W4	6--7J7	2--12K8Y	6--14S7	2--50A7
5--33	1--A0L4	2--5AW4	2--6BX7	1--6HZ8	1--6W4GT	1--7L7	5--12Q7	3--14W7	2--50C6
7--34	2--AG7	2--5BC3	1--6EX7GT	1--6J5	1--6W6GT	14--7N7	1--12S8	2--14Y4	4--50X6
2--36	2--ACG7	1--5T4	3--6BY5	2--6J8	1--6W7	5--7Q7	1--12SC7	1--16GY5	1--62X2A
1--37	2--CK6293	2--5V6GT	1--6BY5GA	1--6JM6	1--6Y6	6--7R7	8--12SF5	1--17BE3	10--70L7GT
9--38	5--0A3	1--5W4	1--6C6	1--6JZ8	2--6Y7	1--7S7	8--12SH7	2--17GB5	7--117L/M7
1--42	1--0AL4	1--5Y4G	2--6C7	6--6K5	9--7A5	5--7W7	1--12SJ7GT	2--19AU4	1--117L/M7GT
1--43	6--0B3	1--5Y4FT	1--6C8G	1--6K6	12--7A6	4--7X6	3--12SL7	1--19BG6	1--117P7
3--46	2--0C3	1--5Z4	1--6CA4	1--6L7	6--7A7	1--7X7	10--12SM7	1--21EX6	2--117Z4
6--49	4--0D3	2--6A6	1--6CB5	1--6L8L6	1--7A8	2--7Y4	1--12SN7GT	2--22BH3	
1--53	5--0Y4	3--6AC7	1--6CB5A	1--6LU8	1--7AD7	5--7Z4	3--12SR7	1--22DE4	
2--55	12--IP23	6--6AD5	2--6CD6GA	2--6N6	11--7AF7	1--10E7	1--12SW7	1--25A7	
1--57	4--HY75	5--6AF6	9--6CK4	4--6N7	2--7AG7	1--12A7	1--12SY7	4--25AV5	
1--59	4--SB7	1--6AH4	1--6CQ4	2--6P5	1--7AH7	1--12A8	1--12V6GT	4--25AX4	
1--77	1--XSFM	1--6AH4GT	1--6CU6	1--6Q5	6--7BL4	2--12A11	1--12Z3	1--25BQ7	
6--79	1--1A5	8--6AL7	1--6CX8	18--6Q7	8--7B5	2--12AF3	2--13GB5	4--25AV5	
2--81	4--1AG4	1--6AN5	2--6D10	17--6R7	4--7B6	2--12AH7	8--14A4	1--25EC6	
4--82	1--1AG5	1--6AQ7	2--6DA4	4--6S7	3--7B7	1--12AN7	4--14A5	2--25I6	
3--85	3--1AH4	32--6AU5	1--6DG6GT	10--6S8	9--7B8	4--12AV5	2--14AF7	6--25W4	
1--89	1--1AJ5	7--6AV5	3--6IN7	5--6SF7	11--7C4	1--12AX3	5--14B8	7--25W6	
4--89Y	1--1AK4	1--6B5	1--6E5	14--6S H7	4--7C5	4--12BQ6	2--14C5	15--25Z6	
1--886	4--1LA4	20--6B6	3--6E7	1--6SK7	1--7C6	1--12D4	2--14C7	2--32L7	
2--816	1--1LA6	8--6B7	1--6EU6	5--6S L7	1--7E5	4--12EN6	3--14E6	1--33GT7	
2--884	5--1IC5	2--6B8	1--6EW7	1--6SQ7	11--7E6	2--12F5	2--14E7	5--35A5	
6--1611	9--1ID5	1--6B10	2--6EZ5	4--6SR7	2--7E7	3--12GC6	7--14F8	2--35B5	
4--2050	5--1LE3	5--6BD5	5--6F5	1--6T7	2--7EY6	2--12H6	2--14H7	2--35Z4	
1--5642	9--1T5	2--6BE3	1--6FW5	5--6U6	16--7F7	10--12J7	2--14J7	1--40A1	
2--7027	2--2AX5	3--6BL7	1--6G5	3--6V6	1--7G8	1--12K7GT	1--14N7	5--45Z5	
1--7193	2--3LF4	1--6BL7GTA	5--6G6	1--6V6GT	4--7H7	4--12K8	2--14R7	3--50A5	

The amount in front of each tube represents the number of that particular tube.

Classified ad rate: 6¢ per word.
Photo ads: \$2.00 extra.

Deadline: 20th of the preceding month.

MISC.

"RADIO AGE" a radio magazine devoted to wireless and early broadcast eras. Contains interesting articles written by collectors, articles published in early radio magazines, lots of reprints of famous radio ads, and a classified section for buying or selling radio and electronic items. Subscribe at \$7.50 per year for ten issues. Mail check or money order to Radio Age, 1220 Meigs Street, Augusta, Georgia 30904.

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DID YOU KNOW THAT FOR ONLY \$50.00
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OF SENDING 96 ENVELOPES

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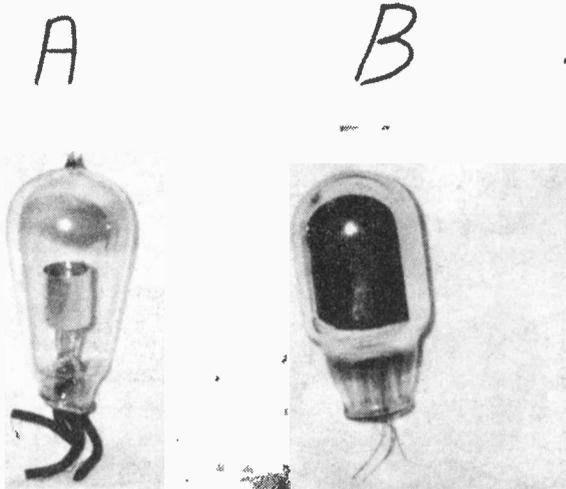
THE HORN SPEAKER
9820 Silver Meadow Dr.
Dallas TX 75217
(214) 286 1673

FOR SALE OR TRADE

FOR SALE: Have quantity of Victor, Columbia, Cheney, Sonora, Edison and others in both table and upright model Victrolas. All in excellent working order. Also have restored early 1930's Radios in both Cathedral and Console models. Some battery radios. Send SASE for list. Will do restoration work for anyone desiring same. Philip Guinan, Route 1, Page Road, Hudson N.H. 03051. Ph: 603 883 8586.

LIST OF RADIOS, PARTS, ETC. will be ready about April 30. Send SASE. If you sent SASE and did not receive March list it is because most everything was sold. Burt Noyes, 4 Pine-wood Dr., Stratham N.H. 03885.

FOR SALE OR TRADE



FOR SALE: Experimental Radio tubes pictured above will be sold to the highest offer. These two tubes were owned by an engineer who worked for Westinghouse in New Jersey. Both tubes are in excellent original condition. Date - early 1920's. Send \$1.00 for Photo. Send offers to Gary Probst, 336 West Church St., Lock Haven PA 17745. Phone (717) 748-2861. Closing date: July 15, 1977.

FOR SALE: OLA tubes, checked good, \$4.50 ea., plus post.

WANTED: Cabinet 9 1/2 X 26 X 7, 2 1/2 meters, Grebe, Western Electric, De-Forest sets and equipment. Radiola I, II, X, Seven E, and Grand. Robert and Helen Corum, 125 Locust Ave., Wallington N.J. 07057. Phone: 201 773-0918.

BLANK BAKELITE PANELS - Cut to size, 1/16" to 3/8" thick. Fabricating and engraving services available. SASE for pricing sheet. Parsons, WBLEVO, 22 Forest St., Branford CT 06405.

WE ARE COMPILING a catalogue of early day radio test equipment. Pictures, catalogues and literature of this early day radio test equipment is needed. Give particulars and price in first correspondence. Wm. L. Poston, 3212 Peach Tree Ct., Bakersfield CA 93301.

FOR SALE: Have 2.5 volt at 10amp filament transformers for repairing early AC radios, each \$5.00 postage paid. G. Schneider, 6848 Commonwealth Blvd., Parma Hgts OH 44130.

WD11 Adaptors, use UX199, 120, VT24. No wiring changes, Radiola III's battery hook-up included \$5.25 pp., 2 for \$9.25. Keith Parry, 17557 Horace St., Granada Hills CA 91344.

HAVE SCARCE OLD RADIO - TV tubes. Also some old radios. SASE for prices. Harold's Radio, 3106 N. 3rd., Harrisburg PA 17110.

FOR SALE: Old transmitter tubes. Send SASE for list. K. Parry, 17557 Horace, Granada Hills CA 91344.

\$1.00 for the newly published booklet, "A Pocket Guide to Antique Radio Collecting." Antique Radio Press, Box 42, Rossville IN 46065.

FOR SALE OR TRADE

WD11 REPLACEMENT TUBES 1940 STYLE.
WD11A...\$15. - New exact replacement.
WD11R...\$10. - Direct replacement substitute uses, 40 to 100ma filament current. K. Hanson, 3403 E. Broadway, Long Beach CA 90803.

FOR SALE: Zenith 3R receiver, #565, 4 tube, with a Music Master Radio Reproducer horn speaker. Tubes and battery clamps. Tom Flanders, 4125 W. 127th Street, Apt. 7-W, Alsip, Illinois 60658.

WANTED

WHO'S got an AK model 19 needing work for sale/trade? Also: AK 20C or 30 cabinet and Grebe Synchrophase? Crocker, Tavern Path, Plymouth MA 02360.

WANTED: Pre-1930 radio test equipment of all kinds, including panel meters & instruction booklets and cards for radio analyzers. Also a cabinet for a Radiola 24, a set of coils for a Grebe CR-18, a diaphragm for a Frost horn speaker or a complete driving unit, a power transformer for a AK type L chassis. Don F. Thompson, Route 1, Box 9C, Samoa, California 95564.

WANTED: Scott, McMurdo Silver, Lincoln, and other classic receivers. Also pre-1930 battery sets, speakers, mikes, etc. J. E. Cunningham, 23W 675 Ardmore, Roselle IL 60172.

WANTED: Any radio fan magazines. Also, any radio magazine with commercial broadcast or star information. Examples, "Radio Guide, Radio Stars, Radio-TV Mirror," etc. Also "Photoplay" magazines. 1 or 100. Fred L. Davis, 5106 Skippy Street, Memphis, Tennessee 38116.

WANTED: Pre-1940 TVs also will pay \$100. for restorable Pilot TV-37. Bill Russell, 6463 1/2 Fulton, Van Nuys CA 91401.

WANTED: Power pack or B-plus transformer for 8P6 Power unit for use with type 81 tubes for Majestic 181 or 180 radio. Gene Altland, 4334 Erie, Navarre OH 44662.

WANTED TO BUY: Test equipment from the 20s and 30s mint condition preferable. Give complete discription, condition and price, prepaid and insured in first correspondence. Picture will be helpful. Wm. L. Poston, 3212 Peach Tree Ct., Bakersfield CA 93302.

WANTED: Electrolas XVI, XVII, XVIII, 8-30, 9-25, 8-60, 10-50, 10-51, 9-16, 9-18, 120, 9-54, 9-56, Edison C-1, C-2, Scott Wellington, Early Capehart. T. Grattelo, 2818 Central, Alameda CA 94501.

WANTED: Still buying early automobile radios and associated items. Marvin Roth, 44500 LaBelle, Oak Park MI 48237. Phone 313-399-5993.

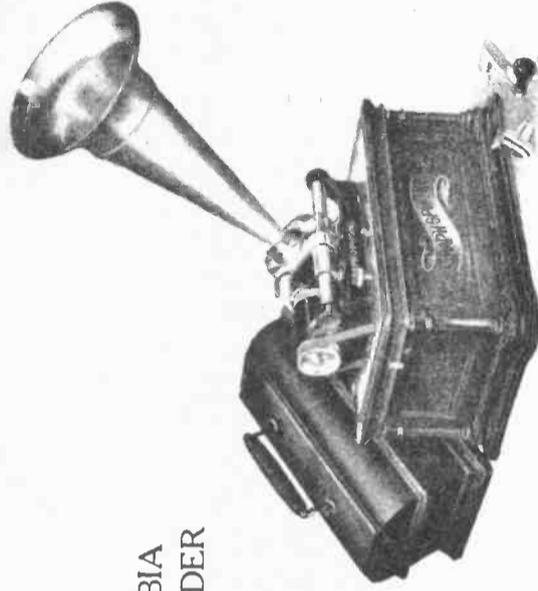
THE HORN SPEAKER



COLUMBIA JEWEL

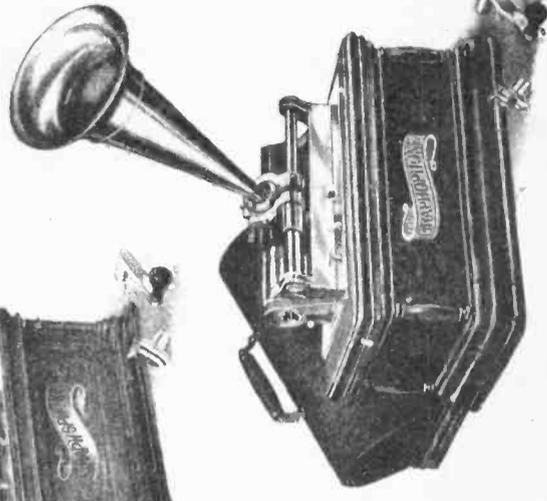
Type BK \$20.00

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Type BG \$50.00

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LIST NO. 16A

(send 13¢ stamp for newsletter sample)

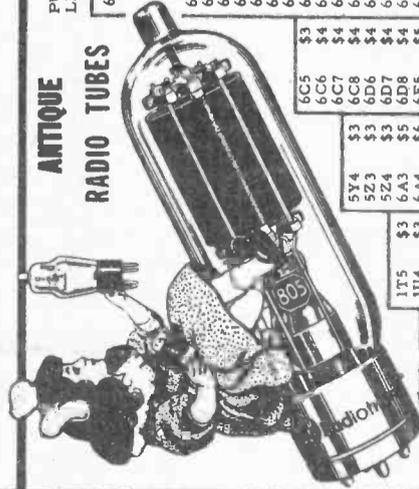
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0D3 \$2	1G4 \$4	1U4 \$3	6C5 \$3	6B7 \$4	12K7 \$3	25AC5 \$3	50C6 \$4	117N7 \$7
0Z4 \$3	1G6 \$4	1U5 \$3	6C6 \$4	6C8 \$4	12K8 \$4	25B6 \$3	50L6 \$3	117P7 \$7
1A1 \$5	1H4 \$5	1V \$5	6A3 \$3	6D6 \$4	12L6 \$4	25C6 \$2	50X6 \$4	117Z4 \$4
1A3 \$4	1H6 \$4	2A3 \$4	6A4 \$3	6D7 \$4	12Q7 \$4	25L6 \$3	50Y7 \$4	117Z6 \$4
1A4 \$4	1H8 \$4	2A4 \$4	6A5 \$4	6E6 \$4	12R7 \$4	25M6 \$4	51 \$5	485 \$5
1A5 \$4	1L6 \$4	2A5 \$4	6A6 \$4	6E7 \$4	12S7 \$4	25N6 \$3	55 \$5	884 \$7
1A6 \$3	1L8 \$4	2A6 \$4	6A7 \$4	6F6 \$4	12T7 \$4	25P6 \$3	56 \$7	950 \$5
1A7 \$4	1L9 \$4	2A7 \$4	6A8 \$4	6F7 \$4	12U7 \$4	25Q6 \$3	57 \$4	951 \$5
1A8 \$4	1L9 \$4	2A8 \$4	6A9 \$4	6F8 \$4	12V6 \$4	25R6 \$3	58 \$4	951 \$5
1A9 \$4	1L9 \$4	2A9 \$4	6A9 \$4	6F9 \$4	12W6 \$4	25S6 \$3	59 \$6	955 \$4
1B4 \$4	1L9 \$4	2B4 \$4	6A9 \$4	6F9 \$4	12X6 \$4	25T6 \$3	60 \$4	955 \$4
1B5 \$4	1L9 \$4	2B5 \$4	6A9 \$4	6F9 \$4	12Y6 \$4	25U6 \$3	61 \$4	955 \$4
1B7 \$4	1L9 \$4	2B7 \$4	6A9 \$4	6F9 \$4	12Z6 \$4	25V6 \$3	62 \$4	955 \$4
1C1 \$4	1L9 \$4	2C1 \$4	6A9 \$4	6F9 \$4	12AA \$4	25W6 \$3	63 \$4	955 \$4
1C2 \$4	1L9 \$4	2C2 \$4	6A9 \$4	6F9 \$4	12AB \$4	25X6 \$3	64 \$4	955 \$4
1C3 \$4	1L9 \$4	2C3 \$4	6A9 \$4	6F9 \$4	12AC \$4	25Y6 \$3	65 \$4	955 \$4
1C4 \$4	1L9 \$4	2C4 \$4	6A9 \$4	6F9 \$4	12AD \$4	25Z6 \$3	66 \$4	955 \$4
1C5 \$4	1L9 \$4	2C5 \$4	6A9 \$4	6F9 \$4	12AE \$4	25AA \$3	67 \$4	955 \$4
1C6 \$4	1L9 \$4	2C6 \$4	6A9 \$4	6F9 \$4	12AF \$4	25AB \$3	68 \$4	955 \$4
1C7 \$4	1L9 \$4	2C7 \$4	6A9 \$4	6F9 \$4	12AG \$4	25AC \$3	69 \$4	955 \$4
1C8 \$4	1L9 \$4	2C8 \$4	6A9 \$4	6F9 \$4	12AH \$4	25AD \$3	70 \$4	955 \$4
1C9 \$4	1L9 \$4	2C9 \$4	6A9 \$4	6F9 \$4	12AI \$4	25AE \$3	71 \$4	955 \$4
1D3 \$5	1L9 \$4	2D3 \$4	6A9 \$4	6F9 \$4	12AJ \$4	25AF \$3	72 \$4	955 \$4
1D5 \$5	1L9 \$4	2D5 \$4	6A9 \$4	6F9 \$4	12AK \$4	25AG \$3	73 \$4	955 \$4
1D7 \$5	1L9 \$4	2D7 \$4	6A9 \$4	6F9 \$4	12AL \$4	25AH \$3	74 \$4	955 \$4
1E7 \$4	1L9 \$4	2E7 \$4	6A9 \$4	6F9 \$4	12AM \$4	25AI \$3	75 \$4	955 \$4
1E8 \$4	1L9 \$4	2E8 \$4	6A9 \$4	6F9 \$4	12AN \$4	25AJ \$3	76 \$4	955 \$4
1E9 \$4	1L9 \$4	2E9 \$4	6A9 \$4	6F9 \$4	12AO \$4	25AK \$3	77 \$4	955 \$4
1F6 \$4	1L9 \$4	2F6 \$4	6A9 \$4	6F9 \$4	12AP \$4	25AL \$3	78 \$4	955 \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AQ \$4	25AM \$3	79 \$4	955 \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AR \$4	25AN \$3	80 \$4	955 \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AS \$4	25AO \$3	81 \$6	9004 \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AT \$4	25AP \$3	82 \$1	9004 \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AU \$4	25AQ \$3	83 \$3	VR-90 \$2
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AV \$4	25AR \$3	84 \$3	VR-105 \$2
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AW \$4	25AS \$3	85 \$4	VR-150 \$2
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AX \$4	25AT \$3	86 \$4	VT-52 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AY \$4	25AU \$3	87 \$4	XXB \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12AZ \$4	25AV \$3	88 \$4	XXL \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BA \$4	25AW \$3	89 \$4	FMI000 \$4
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BB \$4	25AX \$3	90 \$4	117L7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BC \$4	25AY \$3	91 \$4	117M7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BD \$4	25AZ \$3	92 \$4	117N7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BE \$4	25BA \$3	93 \$4	117P7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BF \$4	25BB \$3	94 \$4	117Q7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BG \$4	25BC \$3	95 \$4	117R7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BH \$4	25BD \$3	96 \$4	117S7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BI \$4	25BE \$3	97 \$4	117T7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BJ \$4	25BF \$3	98 \$4	117U7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BK \$4	25BG \$3	99 \$4	117V7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BL \$4	25BH \$3	100 \$4	117W7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BM \$4	25BI \$3	101 \$4	117X7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BN \$4	25BJ \$3	102 \$4	117Y7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BO \$4	25BK \$3	103 \$4	117Z7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BP \$4	25BL \$3	104 \$4	117A7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BQ \$4	25BM \$3	105 \$4	117B7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BR \$4	25BN \$3	106 \$4	117C7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BS \$4	25BO \$3	107 \$4	117D7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BT \$4	25BP \$3	108 \$4	117E7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BU \$4	25BQ \$3	109 \$4	117F7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BV \$4	25BR \$3	110 \$4	117G7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BW \$4	25BS \$3	111 \$4	117H7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BX \$4	25BT \$3	112 \$4	117I7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BY \$4	25BU \$3	113 \$4	117J7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12BZ \$4	25BV \$3	114 \$4	117K7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CA \$4	25BW \$3	115 \$4	117L7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CB \$4	25BX \$3	116 \$4	117M7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CC \$4	25BY \$3	117 \$4	117N7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CD \$4	25CZ \$3	118 \$4	117O7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CE \$4	25DA \$3	119 \$4	117P7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CF \$4	25DB \$3	120 \$4	117Q7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CG \$4	25DC \$3	121 \$4	117R7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CH \$4	25DD \$3	122 \$4	117S7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CI \$4	25DE \$3	123 \$4	117T7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CJ \$4	25DF \$3	124 \$4	117U7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CK \$4	25DG \$3	125 \$4	117V7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CL \$4	25DH \$3	126 \$4	117W7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CM \$4	25DI \$3	127 \$4	117X7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CN \$4	25DJ \$3	128 \$4	117Y7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CO \$4	25DK \$3	129 \$4	117Z7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CP \$4	25DL \$3	130 \$4	117A7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CQ \$4	25DM \$3	131 \$4	117B7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CR \$4	25DN \$3	132 \$4	117C7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CS \$4	25DO \$3	133 \$4	117D7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CT \$4	25DP \$3	134 \$4	117E7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CU \$4	25DQ \$3	135 \$4	117F7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CV \$4	25DR \$3	136 \$4	117G7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CW \$4	25DS \$3	137 \$4	117H7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CX \$4	25DT \$3	138 \$4	117I7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CY \$4	25DU \$3	139 \$4	117J7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12CZ \$4	25DV \$3	140 \$4	117K7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DA \$4	25DW \$3	141 \$4	117L7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DB \$4	25DX \$3	142 \$4	117M7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DC \$4	25DY \$3	143 \$4	117N7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DD \$4	25DZ \$3	144 \$4	117O7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DE \$4	25EA \$3	145 \$4	117P7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DF \$4	25EB \$3	146 \$4	117Q7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DG \$4	25EC \$3	147 \$4	117R7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DH \$4	25ED \$3	148 \$4	117S7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DI \$4	25EE \$3	149 \$4	117T7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DJ \$4	25EF \$3	150 \$4	117U7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DK \$4	25EG \$3	151 \$4	117V7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DL \$4	25EH \$3	152 \$4	117W7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DM \$4	25EI \$3	153 \$4	117X7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DN \$4	25EJ \$3	154 \$4	117Y7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DO \$4	25EK \$3	155 \$4	117Z7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DP \$4	25EL \$3	156 \$4	117A7 \$5
1F7 \$4	1L9 \$4	2F7 \$4	6A9 \$4	6F9 \$4	12DQ \$4	25EM \$3	157 \$4	117B7 \$5
1F7 \$4	1L9 \$4							