DX News

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VOLUME 36 AUGUST 23, 1969 NUMBER 34

In This Issue

(No IDXD Monitor Reports this issue as copy not here by deadline time - GPN)

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September 3rd WUNR-1600 Boston, Mass.; ex-WBOS. Test 0200-0230 EDT; will feature "easy listening music"; reports in care of Sheldon Swartz, who arranged this test for RLA.

September 8th WCVR-1320 Randolph, VERMONT. Will test 0000-0100 for RLA; MOR n mx, 1 kc TT and plenty of ID's; reports to WCVR, Box 1250, Randolph, Vt. 05060. Arranged by Swartz for RLA.

September 22nd Repeat of above test.

A letter to HQ from Robert J. Paine, CE of KUAT-1550, Tucson, Arizona, informs that they will begin an extended period of equipment testing after 0300 EST, starting August 28th. Power is 50 kw and they welcome reports from DX'ers; no return postage necessary. Address is University of Arizona, Tucson, Arizona. 85721

CONGRATULATIONS

Are in order for César Ojeda and Mike Northam who've both recently gotten married; congratulations!

NEXT ISSUE in 4 weeks - dated September 13th; schedule for Volume 37 will appear there.

New Members!

Andre Beaulieu, 5287 Boyer, Montreal, P.Q.
John P. Plunkney, 2901 School St., Alexandria, Va. 22303

If you happen to live near one of our new members, get in contact and welcome them to the NRC!

-GPN

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This list is fairly complete, but I apologize for any inadvertent ommissions in advance. ak

Special Award Report

By phone comes word to ANARC Executive Secretary Gray Scrimgeour that Gordon Nelson has been selected as ANARC's "Man of the Year" for 1969. As Gordon has not only been an outstanding DXer but also a very hard worker for DX, especially in the publication of the DX News, he is a fine choice for this award. The National Radio Club extends its congratulations to the Admiral.

MUSINGS of the Members

Ernest R. Cooper
438 East 21st. Brooklyn, N.Y. 11226

August 23, 1969

LEN KRUSE - 1675 Glen Oak Street - Dubuque, Iowa - 52001

As for my DX since the last issue of DX NEWS, I have logged but four new stations. However, all four were logged on RS, and all four were from the State of Wisconsin. On 6/8 the brand new WWDA-990 Wisconsin Dells, was logged from 6-7am w/a Gospel mx program; although throughout the day they are c/w mx exclusively. That evening I logged Station WOKL-1050 Eau Claire, ex-WECL, w/its final 15 minutes of programming, 8:45-9pm. Station WKAU-1050, Kaukauna, Wis. was heard w/its RS on 6/9 from 8:30-8:45pm for the very first time. Then on 7/5 I heard the new Voice of Radio Station WAGO -690,Oshkosh, from 9am till noon, & well on top of this frequency at this den. The latest verifications received included these: WVOV, who sent a note on my reception report & returned same; KTUF-TEST v/q, WWDA, WOKL & WRYT-TEST of 12/28/66. I am looking forward to seeing many of my fellow NRC members at the Convention in St. LOUIS o/the Labor Day weekend. KLWW*1450 Cedar Rapids, Iowa is NOT on AN; but remains on till 2am CDT seven nights a week; s/on is 5am CDT weekdays, & 6am SMs, CDT. (Same as EST).

JEFF KADET - 8047 Park Overlook Drive - Bethesda, Maryland - 20034

Veries: KFSC KNUJ WCAS WCAL WAFI KTUF WAHT WMOO CKWW. I spent two weeks in the Buffalo area & enjoyed meeting NRCers Ken Lyon, Fred Osterman, & the one & only Ralphie. Also I spent a week in Boston but was unable to call any DXers as I had to leave suddenly at the last moment. Anyhow, it's been a couple of years since introducing myself so here's an update for the newer members. I'm 22, single, & attend the U. of Maryland. Interest in DX dates back to at least 1955 when I filled up a roll of film w/pictures of TV antennas w/a new camera I received for my 8th birthday; hi. I lived in Needham, Mass. before moving to Bethesda in 8/65 and accumulated a BCB total of 540/335. A fire in 1967, however, destroyed virtuallt all of these veries & records. I have also been a ham for almost ten years (this October) and have worked/QSLed 27 countries. My call is W3CRH. I'm also very interested in TV DXing. Current Md. totals are 1,623/68. Domestics in 49/49 states & 10/10 provinces, plus 347/13 foreigners. I consider my best BCB catches to be 25kw. KKAR-1220 Cal. & KBBA-1240 Texas, both on Specials, & 2NA-1510 on RS. Equipment is a Hallicrafters SX-100 (14 tubes) and half of a 15/20 meter dipole. Other interests are collecting old magazines & comic books, the recording industry, & meeting other DXers. So that'll about do it. 73 for now.

CESAR OBJIO - Calle Hostos 38 (407) Santo Domingo, Dominican Republic

Hello DXers. By the time you read this I will be in Miami where I intend to meet all Miami Area DXers. My first plan was to attend the NT. DXIII Convention, but due to money trouble I won't be able to be there. With this in mind I asked at the place I work my holidays to start on 9/16 with time enough, perhaps, to attend also the IRCA Convention in Chicago but there have been other plans. In this trip I intend to stop in Kingston, Jamaica, to say hello to Silvera. As I will get married on 9/16 I have to live in another place, so my new address will be Calle Enrique F. Rojas 46, Apto. 5, 3er. piso, Santo Domingo, Dominican Republic, where I request all my friends to mail letters after 9/1. I will keep the above address for some time after this date as I don't want to lose letters). This new place is two miles West from my actual room on a quiet neighborhood & out of the business district. I hope this place is good for DXing as this won't change with my marriage, in fact it will be much more improved as I intend to bring my Lafayette HE-30 to this place as well as my tape recorder, loop, Q Multiplier & everything I have so that I can have a real shack on hand. I am only waiting for the mechanical filter, already ordered to HQ in order to have everything ready for improved DXing. Although CX are much better at Rani I have to stop in calling [illegible] ten as much as I can in this new place; you'll see that in Section Reports. I am sorry won't see you in STL, LOdIS; perhaps next year. In the meantime I'll drink a toast to your health. 73s. (A very very happy marriage, Cesar! Congratulations! ak)

JOHN SAMPSON - 4148 Wycliff Drive - Winston-Salem, North Carolina - 27106

Long time no report, so here are my meager loggings since 5/5- *WFLB-1490 Fayetteville, N.C. on MM AN show. 6/23- *WBIU-1480 Salem, Va. on RS @ 6:30pm; WKSC-1300 Kershaw, S.C. @ 7:30 s/off; *WKGK-1080 Lenoir. N.C. @ 7:45 s/off; *WCEF-1050 Parkersburg, W.Va. @ 8 s/off. 6/25- WFHG-980 Bristol, Va. dominating the frequency@ 9pm. 6/26- *WCPM-1280, Cumberland, Ky. 4:59½am s/on, beating the other PSA s/ons by enough to enable a brief log; WLIK-1270* Newport, Tenn. on night pattern at 7:45 per v/s. (I was surprised to find them operating at night); WENR-1090 Englewood, Tenn. @ 7:59 s/off & immediately after chey left, I caught the tail end of *WMWM's s/off. 7/14- *WNRG-940 Grundy, Va. @ 7:45 s/off, very strong. S, 7/20- *WKVO-1330 Havelock, N.C. @ 5am s/on for a recent call chenge from WUSM; *WDNT-1280 Dayton, Tenn. s/on @ about 5:01 & at 5:30, *WSJW-1510 Woodruff, S.C. all alone @ s/on & for at least 20 minutes afterwards. SM 7/27- WINT-1270 C 5am s/on & WGAT-1050, Gate City, Va. @ 5:15 s/on. (* - verified). Other interesting veries received for last Winter's reception include WEGO-1410 Concord, N.C.; WAGR-580 Lumberton N.C.; WODY-900, Bassett, Va.; WOAY-860 Oak Hill, W.Va.; WIVK-850 Knoxville, Tenn.; WMYN-1420 Mayodan-N.C.; WFNC-940 Fayetteville, N.C.; WTOY-910 Roanoke, Va.; WADA-1390 Shelby, N.C.; WNRJ-1130 Gainesville, Ga. for noon-time reception; & WLOS-1380 Asheville, N.C. All but WLOS are audible in the day-time here, although WNRJ was undoubtedly a freak reception & WAGR is usually way u/ WCHS/WGAC to the point of inaudibility. I wish we could make it to ST. LOUIS this year, but no go. Have a good time, all. 73.

DICK TRUAX - 3472 Dixiana Drive - Lexington, Kentucky - 40502

Greetings again from the Bluegrass. DX (somesric-wise) continues at a nice pace considering it's July. 7/21- 10m WKBX-1500 N.C. is not on 1500 tonight, but on 1623 announcing upcoming operation w/10,000w @ 7:30pm. If they keep operating on 1623, they'll nor be operating with 1 watt when the FCC gets 'em. No sign of findamental signal on 1500 so I guess they're just way off frequency! No sign of life from the new station on 1000 in Hopkins, Ky. as of 8/1, but I travel the area once a week so I'll pass the word when it is operational. DX last month (July) yielded only 24 new loggings (ONLY?? -ERC), some of which follow: 6/27- WIFC-1040 Ind. s/on @ 5 02am, KCRG-1600 Iowa w/NBC & c/w @ 8:30pm. 7/5- WFMH-1460 Ala. @ 7:45pm w/c/w & NX, WTRU-1600 Mich. @ 8:00pm w/NBC NX & WX. 7/9- WROA-1390 Minn. s/off @ 8pm. 7/12- WUOK-1270 Md. @ 8:10pm w/c/w & SID. 7/13- WROD-1430 Ga. s/off @ 8pm. I finally logged TIRICA-620 7/11 @ 12:39am after local WLAP-630 was off; I didn't think I'd ever get this carp one. Also I finally caught WMEX-1510 Mass. @ 1:10am after WLAC s/off. Nothing spectacular to be sure, but enough to keep things intereeting during the "off" season. I definitely will be in ST. LOUIS. I hope to meet many of the gang there. The pirate on 1610 from Cincinnati now in operating on WLUV weekends only - good signal down here 60 miles away.

SHELDON MILLER - 840 80 Street - Miami Beach, Florida - 33141

Hi folks. Not much new DX here, but I intend to rejoin NRC in the near future & get DXing again. Locally, WAME-1260 has become WWOK, a c/w station They are AN-6, off MM. WRIZ-1550 has gone ON, w/Progressive rock mx in the afternoon. WRBD-1470 has increased greatly its signal here. They normally were almost inaudible, but are now very listenable. WOCN-1460 is now MOR w/HI. Lately I have been receiving WMEX-1510 well on MMs, as well as frequent reception of WGBB-1240. WGBB is my most distant graveyarder heard on RS. A power blackout here yesterday knocked WQAM WOCN WMBM off the air, while all other stations switched to emergency power. CX here have ranged from spotty to terrible, w/a few freak occurrences like WADO-1280 coming in well while no other NYC station was even audible. The Cuba situation seems about nor mal. I've noticed a CMCA-830 relay on MAO recently. 73.

THIS IS THE LAST ISSUE BEFORE THE BIG N.R.C. ST. LOUIS CONVENTION. WE HOPE THAT BE-FORE YOU READ THE FIRST ISSUE OF VOLUME 17, THAT YOU WILL HAVE BEEN TO THE MOUND CITY AND HAVE ENJOYED THE HEARTY FRUITVITIES THERE!

LON J. BERMAN - 1511 Dieman Lane - East Meadow, New York - 11554

Hi y'all. Despite my rather extended absence from these pages, I am still alive, and well, hi. I've had no time to DX actively this Summer, as I've been working two jobs. Weekdays I'm working as a computer programmer at the State University, and weekends I'm an engineer/announcer for WTHE (c/w, of course). The station has recently been sold, & is undergoing extensive equipment overhauling at the present time. Consequently, we have shortened our broadcast day to 7am - 6 pm until repairs are complete (about three months). And yes, I can verify WTHE for you if you send a current reception report. I hope to see many of you at the big Labor Day weekend thing in ST. LOUIS. $$$ willing, I'll be there (and things look very good at the moment). Till then, 73s & good DX.

SD/4 R. L. RUSSELL - 018-369109 - Co. C - 26th Engr Bn. - A.P.O., San Francisco 96217

Well, greetings from (to the best of my knowledge) one of the only two NRCers in this Tropical Paradise! Not too much in the way of DX. But who would have any interest in DXing, particularly when you can't understand Vietnamese, Thai, Chinese, or Malasian, hi! (I guess I must be a domestic DXer at heart!) The only DX of any interest occured on 31.6 mg/s, our company's present frequency. Would you believe 5x9 reception between a station 40 miles S of Chu Lai, R.V.N. & 30 miles N of Seoul, Korea w/only 35w of power from each station? What makes this more unreal is that I received the Korean w/only a three-foot whip antenna! How about a line from P.E. Crocker? I must close, as the bunker line is rather active tonight, as are the Arty units at our location. As they say in "Nam", getting SHORT! 129 days & I'll be back at the dials w/a renewed interest after a year of forced absence! As they say over here, 73s, 13s, & PEACE (?). (What's "13s"?? -erc) (Best of luck, Dick! -erc)

G. DAVID PALL - 71 Hurlbutt Street - Wilton, Connecticut - 06897

DX has been rolling in since last time, friends & neighbors, so here goes: 5/30- I logged WFIF-1500 w/NX @ 1:12pm & WLNG-1600 L.I. @ 2pm, both semi-local but hard to copy until new LW was put into action. Later on that evening, WEOK-1390 s/off caught @ 7:15, WJAR-920 caught w/ID @ 7:34 & MoR mx; WEMI-690 "News Radio 69" @ 8. 6/1 PM- CKEC-1320 w/rr & phone requests @ 10, ID @ 10:34, CJRC-1150 w/rr-FF (Super Hit Deux, hi) and ad for Suzuki cycles. Friends, you've never heard anything till you've heard an ad for motorcycles done in FF, WWRL-type reverbs & all, hi. All this plus ID @ 11pm. 6/3- WTYM-1600 s/off @ 7pm, WHKN-620 w/minor league BB, ID @ 8:34; WIBX-950 w/NX @ 10, WX @ 10:20pm. 6/5- WKNE-1290 ID floated in whilst logging WNBF @ 9:30pm; WKBR-1250 w/NX @ 10 o/WTAE. DX halted after 6/5 due to many factors (one being that the Mets were in second place, as I fainted & did not awake until 7/14). Speaking of 7/14, CFRB-1010 in L&C w/WNEW-type mx, WINS off, 12:32am, WCBM-680 s/off 11:10p 7/13 (Sorry about that, ERC), CKFC-1360 w/NX @ midnight. Also CKFH-1430 L&C w/Bill Drake type rr, 12:10. WING-1410 & CKCY-920 both noted on top @ 1. 7/15 AM, WLAN-1390 u/WFBL/WEAM w/NX & ID @ 12:30am. WHLO-640 w/fantastic signal right upto s/off @ 10, was actually listenable for 45 minutes. S/off announcement included "with a THOUSAND watt power of 1,000 watts". I've heard of loyalty to your employer, but gee . . . 7/16 CJET battling w/CKAR on 630, CKAR was on top until s/off @ 11. Question: I am now listening to WOR-710 w/rr & 20/20 NX a la WING u/them, WHB? Varies: CJET CKAR WCBM. Pse bye - the frequency of WLIX minus 467 2 U. Keep pushing for them METS!

ROSS E. HANSCH - Ilikai Hotel - Honolulu, Hawaii - 96815

I'm having a pleasant stay on Oahu but not accomplishing much on the BCB; our room on the 24th floor only has exposure in a southerly direction so [illegible] Cal. makes it in here, & the Honolulu stations are close & loud. I did hear CKDA-1340 nicely at the Jr. Op's home (KH6HCB) in Kailua on the transistor [illegible] I can imagine what a 180 & 4' loop would do. I had a real nice visit w/Norm Magyire in his apartment overlooking Waikiki Beach, but did not hear from Richard Wood, Information had no telephone number for him. WAGO-690 Oshkosh is putting a strong signal around Wis. 2 Sept. s/off is 7:15. KCCN-1420 "The Hawaiian Music Station" has quite a gimmick, they have a studio in a tree at the front of the International Market Place, the 10 to 2 shift is "Lima", a lady who talks just like I do but on the air uses a native dialect entirely - she's good! Till back in Wisconsin, Aloha.

FRANK WALDRON - 65 Lakeridge Drive - Matawan, New Jersey - 07747

Recounting two months of Summer DX in 30 lines shouldn't be too hard, especially since the AM dial string decided to break in June, hi. As is, DX: 5/31- WOOD-1300 s/off 12:33 w/SSB, reported. Two SSBs on 1300 @ 1; one was WAVZ, the other unID. 8/1- WAZL-1490 NX to 12:15 s/off. UnID s/off-1380 @ 11:02pm w/WBNX mulled somewhat, no SSB. MM 6/2- Religious program topping 1220, probably CJOC @ 12:15, WILS-1320 noted w/rr @ 1:30 weak u/WVOJ. CJOC IDed @ 2, barely above the SS & static. Combo f/up -new report sent. 6/5- WXIT-1490 ID into NX @ 11:29pm ex-WGKV. WTXL-1490 in/out w/rr @ 11:35. 6/7- CKJL-900 ending FF-Expos game @ 12:38 o/u CHML. 6/8- WEAV-960 noted weakly u/CKWS w/NX after Expos @ 1:02. WNEW showed up on 1550 for the first time @ 1:41, later gone, as there was WKFE P.R. fair to weak w/an AN show @ 3, many mentions of "R. Cafe Musicale." FM, actually MM, CJIC-1050 surprisingly o/u CHUM @ 11:32 w/NX & mx despite a thunderstorm that soon discouraged any further DX activity. 6/9- WVAB-1550 s/off 7:29pm w/some QRM. 6/11- WPNO-1530 s/off 7:29 fairly strong, and alone. A s/off-1550 @ 7:59pm no SSB, mentioning 105.9 FM, presumed WDLR. 6/14- Anyone in the NE should take Page Taylor's tip seriously on CBMM-540, the new LPRT in Senneterre, Que. After XEWA s/off @ 12:02, CBMM was all alone u/WRIC f/c-OC until audio was cut @ 12:07, definitely //CBM, & no sign of CBK. 6/29- New HJAX-1550 o/u CBE @ 11:23pm, not enough for a report. Lately I've been borrowing the use of a Panasonic six transistor, which hooked to my longwires has fair sensitivity but poor selectivity. 7/20- WCSH-970 @ 12:10 w/NX. MM 7/21- CBV-980 AN for Apollo in FF @ 3:10 u/WJRZ slop. Veries are v/q- KTUF-1580 TEST SRS-725 WOOD-1300 KLOU-1580 in eight months WKFE-1550 WHCU-970 in five months. v/l- WCVI-1340 WEBR-970 WXVI-1600 WNMT-1520 WSGO-1440 WVAB-1550 KGMO-1550 in seven months WABR-1440 in seven months CHGB-1310 CKPM-1440 WTXL-1490 WBVM-1550 WENE-1430. v/f- WIXY-1260 WNBF-1290 in only eleven months. v/PP- WWCO-1340 WRFD-880 in 1pt months. Total: 919/572 Many of these were from f/ups. 73.

RICK MARR - 6912 West Park Drive - Hyattsville, Maryland - 20783

Hello there gang. DX in this den has been completely nil lately due heavy Summer static, summer school @ U. of Md., DJing an rr program one night each week on my campus station WMUC-650, & my weekend job in the NX Dept. of NBC/WRC here in Washington. However, I thought I'd add my usual bit of "Summer gab" to the pages of DX NEWS. In looking through the weekly publication, "Variety", I noticed a "count-up" of stations in the USA which I thought you'd be interested in. As of 6/30/69 there were 4,254 AM radio stations, 2,018 FM stations, & 375 educational FM outlets licensed in this country. In addition, there were 106 commercial VHF TV stations on the air & 174 commercial UHFs according to the FCC. In area radio news, action has finally been taken in regard to local WTOP-1500 DC. As most of you know by now, WTOP turned into an AN "ALL NX" format several months ago. When the station picked up this new format in March nearby radio station WAVA-780 in Arlington, Va. previously the only all-NX station in the Washington Metro region, complained to the FTC that WTOP's action was anti-competitive, that it would drive WAVA out of business since WAVA is merely a 1,000w daytimer & that it added to the local news dominance of the WashingtonPost, which owns WTOP, a 50kw giant in these parts. After looking into this situation very closely, the FTC recently closed out its investigation & decided no further action was necessary. The FTC stated its investigation did not produce "any evidence of misuse of alleged monopolistic power possessed by the Washington Post Company." After listening to both stations very frequently, I personally have found WAVA to be much more informative & better programmed than WTOP. And if the ratings game means anything, you might find it interesting to know that since WTOP went ALL NX, WAVA has added 40% to its previous ratings total while WTOP has lost 39% of its previous audience. Time will no doubt tell the story. In any event, competition certainly has not hurt WAVA much if the above figures are accurate. Also recently, I have toured the studios of local WOOK-1340, @ 5321 First Place N.E. in Washington. The Soul & R&B station is owned by the United Bg. Co. & operates w/1,000/250 U-1 That's all for now. Peace, everybody

PARTIAL LIST OF A.W.VN. NETWORK STATIONS

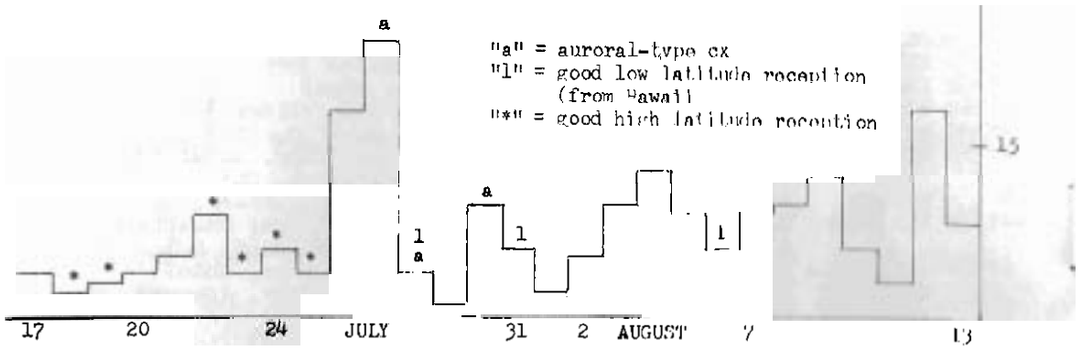
540	Saigon	50,000	[illegible]	Da Nang	50,000	All stations ID @ 11:50
560	Pleiku	10,000	[illegible]	Can Tanh Day	10,000	pm, local time.
770	Quinhon	10,000	1,300	Cai Lai	10,000	(R.L. Russell)

INTERNATIONAL DX Digest

Propagation & Features
Gordon Nelson, 19 Irma Ave
Watertown, Mass. 02172

DX conditions here in the Northeast have been unusually good during the past few weeks, all factors considered. Common TA's such as CSB9, Dakar, Barcelona, and the like have been audible most nights with signals ranging from poor to excellent; static from local thunderstorm activity and tropical storms has been pretty bad however. In Pa., Ben Dangerfield reports: "Haven't given up DX, just inactive the past few weeks due to excessive noise level. I concurred on your periods of TA ex, such as 7/22-7/24, followed by an auroral period. First half of August awful..." Even in Hawaii, ex during most of July were very bad, says Richard Wood. He reported the first post-midsummer logging of N.Y.C. on 7/25, and the "first decent night in a month" on 7/28, and unusually good North American reception on 7/31.

Geomagnetic/auroral activity remains unusually low which accounts for the recent runs of unseasonable TA receptions; if things remain this inactive for a month or two we should experience some very nice high latitude receptions in September and October. The following graph sows the Fredericksburg A index of geomagnetic/auroral activity; this figure is a good measure of high-latitude MW signal absorption.



*ANGUILLA. Several members including Conrad, Taylor, and the Editor are all getting traces of a carrier on 1505V during the early evening hours, but no solid loggings yet. Which member will be first with this one?

*QUASICLANDESTINE. Radio Vltava, the Soviet-operated Czech language outlet which began operation during last year's invasion and was widely hrd in Europe on 1430, was reported to be in East Germany by IDXD sources last year. This location has now been confirmed by an Arctic member currently touring East Germany; the transmitter is (was) just outside Dresden and is currently operating as Radio DDR on 1430.

'Voice of Peace' Dedicated Vessel

AMSTERDAM (AP) — Israeli peace pilot Abie Nathan says he has purchased a former Dutch coastal vessel for $44,000 and will go ahead with plans to make it a floating radio station to broadcast peace messages off the coasts of Arab countries and Israel.

The vessel, named Silo, will be rechristened "Voice of Peace," Nathan said the ship will sail to the United States next week where radio equipment will be installed.

De Walt Rogers, N.H.

Radio Avala, the first free enterprise radio station in the communist world, went on the air in Yugoslavia but closed down after only 41 minutes "due to technical difficulties." Its frequency is near that of the new and more powerful state-operated Radio 202 which has a similar diet of pop music, disc jockey chatter and advertising.

Bo Merrine[illegible]

DOMESTIC DX Digest

Randall Kane
37 Myrtle Ave.
Winthrop, Mass 02152

after hours: midnight to sunrise

* 570 WMCA-NY Finally had a SP: 8/5 around 0100 a truck knocked out studio & XR power. (Frank Waldron, Matawan, NJ)

870 WWL-La Very weak 0150 8/14. must've been AXR: OC was theirs, too. Never hrd OC & RS from same stn at same time before. (George Sherman, Rosemount, Minn)

* 920 CKCY-Ont Was AN MM 8/5 again, off 8/11 (OC AN). (Waldron)

* 990 CBW-Man (I don't like that call... ak) Completely covering WIBG while AN for Moonshot 7/21 at 0200, unusual but this has been known to happen as close as 20 mi from WIBG's XR (I live 55 mi away). All CBC stns were // MM 7/21, exc local IDs & wx; FF was AN too. (Waldron, NJ)

*1050 WHN-NY Has been off many Wed AMs w/ETs recently, plus the regular MM SP. (Waldron, NJ)

++1220 CKSM-Que S/off 0002 SM 8/10, was off 2300 8/11. (Waldron, NJ)

++1230 KYSM-Minn S/off now 0100. (Sherman, Minn)

*1240 KASL-Wyo Hrd 0205 w/RR 8/12. (Sherman, Minn)

*1260 WIXY-Ohio R/c is 0100-0115 2nd MM, uses TT. (Waldron)

*1300 WAVZ-Conn Was AN SM 6/29, seemingly not on 6/30. (FW)

*1310 WDXI-Tenn Verie says the 8/5 f/c was a one-timer, usual f/c is during RS. (Jerry Starr, Youngstown, Ohio)

* WGH-Va Ending f/c-TT 0115 7/28, not listed. (Starr, Ohio)

++1340 WNHC-Conn S/off hrd 0130 8/11 after "Contact" pgm; uncertain if & when they s/off rest of week. (Waldron, NJ)

*1390 WXXI-Tenn Unlisted f/c-TT ending 2330 8/4. (Starr, Ohio)

1400 KGUL-Tex R/c hrd 7/31 0030-0045, a good verifier. (Conrad, Fla)

* WBTH-Fla Unlisted f/c-DT 0215-0230 8/8. (Starr)

+1450 CHEF-Que S/off hrd 2358 MM 8/4, FF. (Waldron, NJ)

+1460 WPNX-Ala Anncg AN MM 8/4 w/CBW. (Waldron)

*1490 WMBM-Fla On the past 2 MMs. (Jerry K. Conrad, Haines City, Fla)

\+ KLGR-Minn S/off now 0000. (Sherman, Minn)

WFLB-NC PoP/OC w/one ID at 0205 8/1. (Conrad, Fla)

*1520 WTTO-Ohio Noted AN w/RR 8/2 u/KB. (Starr, Ohio)

*1540 KXEL-Iowa Still on 0215 SM 7/27- AN? (Waldron, NJ) Had spurious radiations 8/11 about 1470-1650 kc, still there 8/14. Sent letter to CE. (Sherman, Minn)

1550 KUAT-Ariz ET/OC-mx 0204+ 7/25, annod as 25kw test. (Starr) Hrd well on IRCA DX 0205-0225+ 7/25, OC-mx-TT & many IDs; tested new 50kw XR. (Waldron) Probable KUAT very strong w/OC & mx, but began before 0000 MST 7/25; did they have an illegal DX? (Sherman, Minn)

** KKJO-Mo Will DX Thurs 8/4 0100-0230 EST. ERP will be next to nothing except to NW 0100-0200, but non-DA 0200-0230 will cover NA. Rpts to CE. (Sherman, Minn) (Starr)

* WSHN-Mich F/c-mx 0045-0115 8/2, half-hour earlier than listed.

\+ CBE-Ont Back to 0010 s/off 7 days. (Waldron, NJ)

+1560 WQXR-NY Apparently has dropped its after-hours SM pgm, as not on at all 0020 8/10. (Waldron, NJ)

\+ WDXR-Ky S/off again at 0100, hrd 7/27. (Waldron) Has distant listener contest 0000-0100 s/off once a week (When? ak) Frank Carvell, DJ, is interested in DXers. (Sherman)

*1570 CKLM-Que Was off briefly around 0100 SM 7/27, seemingly has no regular SP. (Waldron) Latest info, off Sat or Sun at 0008. (ak)

+1590 WTBY-Conn MM s/off is 2300, 0100 rest of week. (Waldron, NJ)

+1600 WKWF-Fla Now s/off 2300 daily. (Conrad, Fla)

* WXVI-Fla Seems to be NSP, at least they are there all the time; not annod such, though. (JKC) Has been reported w/late (0203) s/off. (ak)

sunrise and daytime

\+ 920 WMNI-Ohio has 0600 wkly sign-on, 1Kw/D-500w/N-DA 2; a print/Vq by CE. (Ralphie Johanns, Buffalo, NY) Good luck, OM! (ak)

+1260 WIXY-Ohio MM s/on is 0400. (Waldron, NJ)

sunset and evening

*1110 WTBQ-NY New, hrd 8/12 1200-1330 o/WNAR in car & at home; very easy listening format. (Russ Edmunds, Wayne, NJ)

* WJSM-Pa S/off 1700 8/6; very unusual since should be 1915. (*) WJDA-1300 signs off up to 2 hrs before normal time on Sunday. (ak)

1240 WCEM-Md Re 8/2 DDXD my unID of 6/11 w/auto ad was this, per Kilroy and then Tel Co. (Edmunds, NJ)

schedules and other info

540 CBMM-Que Seneterre is here ex-710 w/40w, 350 mi NW of Montreal per verie. (Waldron, NJ) I've not had them listed on 710, Frank. (ak)

560 WCKL-NY FCC extended completion date to 9/30, so look for RS around 10/1. (Edmunds, NJ)

620 KWAL-Idaho As suspected, granted petition for stay of deletion; probably will be on indefinitely a la WNJR. (RJE)

690 KEOS-Ariz Advertised in Flagstaff Yellow Pages as here but noted in late July still on 1290; switch may be very soon. (Lewis White, Trenton NJ via a Western trip) (JKC)

++ 920 WMEG-Fla HI NSP- that ruins the best regional DX channel here!

++ 940 WNAL-Ohio Is on. (Edmunds, NJ)

++ 950 WLOF-Fla Is NSP. (Conrad, Fla)

++ WPEN-Pa Will drop NBC effective 9/30. (Edmunds)

++ 960 CKWS-Ont Sked is 24 hrs, off MM at 0040. (Waldron, NJ)

++ 990 WHOO-Fla AN6, off MM. (Conrad)

++1000 WKBQ-NC Is on. (RJE)

++1060 CJRP-Que For rpt to CJLR for MM 7/21 reception, EE v/l rcvd from CJRP. Playing back the tape I found the call can sound like CJFA (in FF) as Simmons reported. Believe is now AN. (Waldron, NJ)

++1070 KNX-Cal CP is on. (Edmunds)

++1090 KNGR-Cal "North Coast Radio" (ex-KIXF 1280) noted w/very excellent signal while driving through Cal. (White, NJ)

++1130 WMGA-Ga CP on here, delete 1400. (Edmunds, NJ)

++1150 CKX-Man Seems NSP w/"Mx till Dawn". (Sherman, Minn)

++1190 WAVS-Fla Is call for Ft. Lauderdale CP. (Edmunds)

*1200 WASB-NJ Re 8/2 DDXD, bootlegger is temporarily off, should resume RS (including Sat & Sun daytime) by the time this is published. (Edmunds, NJ)

++1230 WNUZ-Ala CP is on. (RJE)

++ WONN-Fla Has been AN6, off 0000-0500 MMs. (Conrad, Fla)

++ KBAR-Idaho CP is on. (RJE)

++1240 KWAK-Ariz CP for 1000/250 U1. (Edmunds, NJ)
++ KVRC-Ark CP for 1000/250 U1. (Edmunds, NJ)
++ WWWC-NC Is call for Wilkesboro CP. (RJE)
1250 KICM-Colo Granted 90-day extension of interim operating authority (7/25). (Edmunds)
++1260 WWDC-DC Is still NSP. (Waldron)
++1270 KNWC-SD 0600-0000. (Sherman, Minn)
++1300 WLOT-Wis Is on. (Edmunds, NJ)
++1310 KNUI-Hawaii Change QRA to Kahalui. (RJE)
++1340 KYLT-Mont Now 24 hrs. (White, NJ)
++ WIRY-NY CP to U1. (Edmunds, NJ)
++ KSGT-Wyo CP for 1000/250 U1. (RJE)
++ CKFL-Que Is call for Lac Megantic per verie from CKLD-1230, stns simulcast. (Waldron, NJ)
++1390 WAVP-Fla Not on the air, positively. Would dominate if they were (30 air miles). (Conrad, Fla)
++1400 KQIQ-Cal CP for 1000/250 U3. (Edmunds)
++ KREO-Cal CP for 1000/250 U1. (Edmunds)
+1430 WLAK-Fla Is AN6, SP MMs at 0000. (Conrad, Fla)
+ WNJR-NJ MM SP is 2320-0430. (Waldron, NJ)
+1440 WHHY-Ala AN6, SP MM at 0100. (Conrad, Ky)
+ WABR-Fla Is NSP. (Conrad)
X+1400 WHHV-Va Is U1 per stn. (David Lewis, Kansas City, Mo) Welcome!
+1450 KRNA-Ariz CP is on. (Edmunds, NJ)
+ KLWW-Iowa AN MMs, SPU (probably NSP). (Sherman, Minn)
1480 WAPG-Fla Not positive if they're on, but only 65 mi & I've done some careful searching. Not even an SAH during the day w/WVCP, 35 mi away. I'd say they aren't on. (JKC)

magic is still alive!

+1490 KCUZ-Ariz Is on. (RJE)
+ WTXL-Mass 0530(0700)-0100, occasionally 24 hrs on weekends. (FW)
+ WFLB-NC Is NSP per verie of 8/1 PoP. (Conrad, Fla)
+1530 WCKY-Ohio MM SP now 2330-0345. (Waldron, NJ)
*1540 KORG-Oreg Bootlegger covered about 10-15 mi around Madras though giving location as Portland. Prerecorded RR shows with a strong hum on lower sideband. (Lewis White)
+1560 CP-NY Brockport 14420, 1000 D3; Lester Bldg. (RJE)
+ WCOP-SC Is on. (Russ)
+1570 KACE-Cal CP is on. (Edmunds)
WDNL-Ohio Call will probably not get on as CP is being sold by Daniel Enterprises; nothing up yet. (Starr, Ohio)
+1590 WALG-Ga AN6, SP MM at 0000. (Conrad, Fla)
+1600 WKEN-Del CP is on. (Edmunds, NJ)

Just think- If I had gone to Woodstock, there would have been no DDXD this issue,.. (There may not have been any me, either...or there may have been a far better one...)

'Twas indeed pleasant to again spend time with Russ Edmunds on 8/19.

This summer- or, more accurately, this 6-month DST period -I have had a ridiculously hard time with keeping all times in their "proper" places. All DX News, of course, is historically an EST affair; but this time, and evidently forever on, the situation is complicated by the NRC Log, which is on Eastern Local Time (EDT during the summer). Hours have to be added and subtracted to the point of premature senility. Furthermore, some of youse guys are not being co-operative...one top DXer insists on contributing in AST...and if his tips weren't just about the best, I'd be tempted to chuck 'em all. (At least why not GDT?)

I have some new PSAs and a network change or two for next time. 73, rusty

Ⓐ

FET ALTAZIMUTH LOOP ANTENNA

The loop antenna is particularly suited for MW DX'ing for a number of reasons: (a) Because it is a magnetic antenna, it will actually pick up less local electrical noise than a long-wire antenna with equal signal pickup. (b) Because a properly designed loop antenna is actually a tuned circuit, the antenna selectivity will greatly reduce spurious and overload effects from powerful local stations. (c) The directional pattern of the loop antenna often permits separation of distant stations on the same frequency. (d) The null of the loop pattern can be used to greatly reduce the pickup from local stations. (e) A good loop antenna can serve as a simple but highly accurate direction finder to aid in the location and identification of distant MW stations

While loop antennas have been used by MW DX'ers for many years, loop design has progressed very little since the 1930's; the loops commonly in use today all suffer from the same basic design limitations: poor nulling of local stations, relatively low signal pickup, broad low Q tuning characteristics, and distorted pickup patterns which produce unreliable direction finding.

The antenna described in these plans* incorporates a number of new features stemming from the author's extensive experience with the theory and design of magnetic antennas. Properly constructed, this 35 inch square antenna will provide signal output equivalent to many 100 foot long-wires, but with considerably less local noise pickup. The use of totally balanced geometry and circuitry eliminates "vertical effect" - the most common cause of poor performance in other loop designs. The exclusive "altazimuth" design permits the user to compensate for polarization wave tilt from local signals, thus providing remarkably deep nulls on local stations; in many locations it will be possible to totally eliminate pickup from locals, thus permitting the DX'er to log distant DX stations on the same channels as locals! The physical and electrical characteristics of this antenna have been very carefully chosen to provide maximum signal pickup and tuning selectivity without imparing the tuning range; the use of a special low-loss tuning capacitor with linear characteristics eliminates "top band bunching" and provides unusually easy tuning.

The Field Effect Transistor amplifier was designed especially for this application. In addition to supplying more than 25 db of low noise gain, the use of balanced input circuitry and FET's featuring unusually high input impedance reduces tank loading to an absolute minimum; as a result, both output voltage and tuning sharpness are extremely high compared with ordinary designs. Balanced cross-neutralization provides for unusual stability and permits relatively careless construction practices. The special low-capacity feedline described within provides total elimination of "vertical effect" with minimum losses; the Q-gain control permits the operator to control the output voltage of the loop over a wide range to meet all possible signal environments - from the shadow of a 50 kw local to the quietest Monday morning of the year.

*While this antenna is primarily designed to be used with the balanced FET amplifier described within, only a few changes are needed to permit operation without the amplifier - the basic design remains unchanged. Omission of the special amplifier will reduce signal pickup and tuning sharpness; the ability to null local stations, reject local electrical noise, and make DF measurements will not be affected if the amplifier is omitted however.

Ⓑ

PARTS NEEDED FOR ALTAZIMUTH LOOP

WOOD:

A. Cross arms (3/4" x 1-5/8" stock; total of 8' needed)
B. Tilt arms (1-1/4" x 1-1/4" stock; total of 4' needed)
C. Mounting shaft (1" dowel; 36" long)

PREFERABLY ¼" PLASTIC; PLYWOOD ACCEPTABLE HOWEVER:

D. Arm plates (3 identical)
E. Terminal arm plate (one needed)
F. Center braces (2 identical)
G. Spreaders (8 identical)
#H. Terminal block plate
I. Tilt lock plate (one needed)

¼" polystyrene is available in foot-square sheets from sources such as Lafayette, etc.; the relatively high price makes it desirable to obtain the small pieces needed locally.

MUST BE PLASTIC:

J. Capacitor mounting plate (need one)
K. Tuning capacitor, 325 pfd linear wavelength; Hammarlund MC-325-M, Newark item #41F312
L. Tuning range switch, miniature toggle; Lafayette item 99 T 6162 or equivalent
M. Tuning range capacitor, 200 pfd, dipped silver mica; Lafayette item 30 T 3549
N. Q-gain control, 2 megohm, log taper; Mallory Migetrol U55; Lafayette 33 T 1155
O. Tank coil, #12 gauge stranded wire, plastic insulation (125' needed if FET amp used; 100' if amp omitted); available commonly in 100' spools
#P. Link coil, #14 gauge hookup wire, plastic insulation (25' needed)

Q. Tuning shaft extenders (2 needed), 6" brass, ¼" diameter; Lafayette 32 T 6408
R. Tuning shaft couplers (2 needed), ¼" to ¼"; Lafayette 32 T 6412
S. Plastic knobs, ¼" shaft (2 needed)
#T. Terminal strip, 3 connection, Cinch-Jones Series 164; Newark item 28F841

U. FET amplifier
V. Transmission line; 2 pieces of air-cored, low capacity cable; this type has no RG designation is is used only for automobile antenna leads; 36" universal extension lead; Lafayette item 11 T 7410 or equivalent
W. Setting circle, 360° protractor; available from drafting supply store
X. Bearing pointer (stiff wire, etc.)

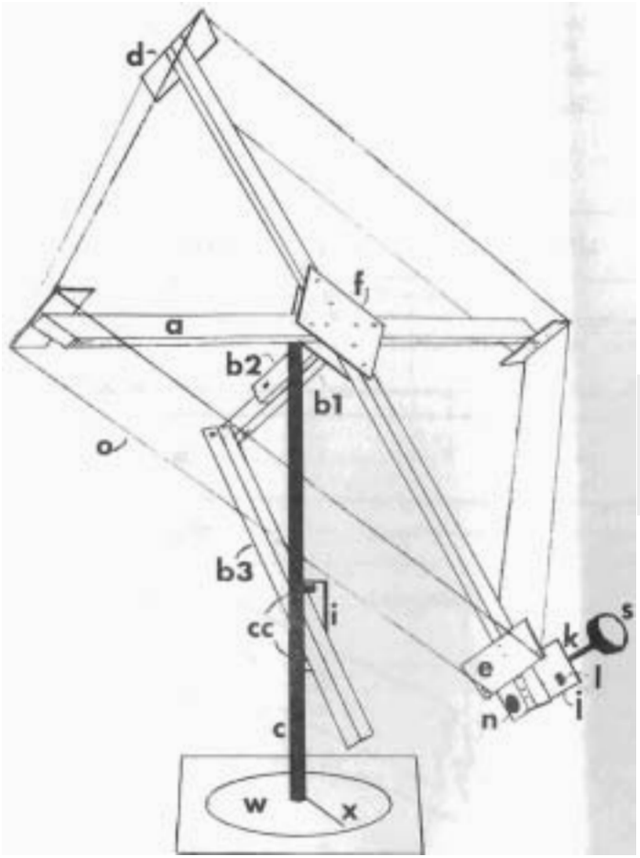
AA. Bearing angle
BB. Tilt angle
CC. Tilt angle lock nuts

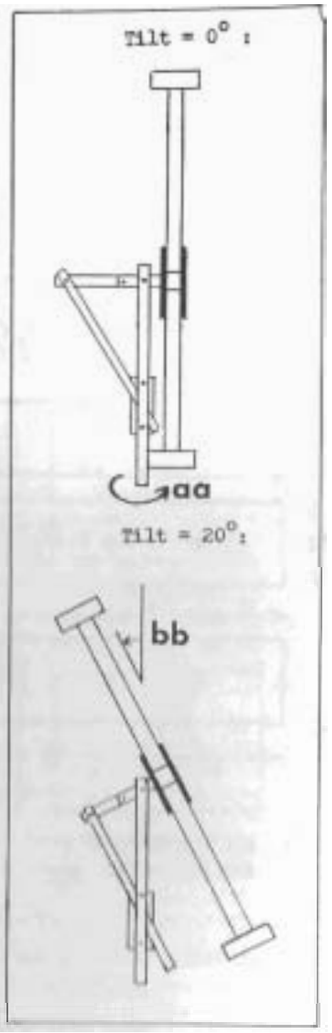
Small parts not shown on Figure 1

8	1/4" machine bolts, 1-½" long, with wingnuts and washers
3	1/4" machine bolts, 2-½" long, with wingnuts and washers
2	1/4" machine bolts, 3" long, with wingnuts and washers
1	1/4" machine bolt, 3-½" long, with wingnut and washer
16	Number 6 round headed wood screws, 3/4" long
2	Number 6 machine screws, 3/8" (to mount tuning capacitor)
2	Solder lugs, #6 hole
	Number 6 machine screws, with nuts (for terminal strip)
1	Number roundheaded wood screw, 1-½" long (brace to tilt arm)

# indicates a part needed only if amplifier not used

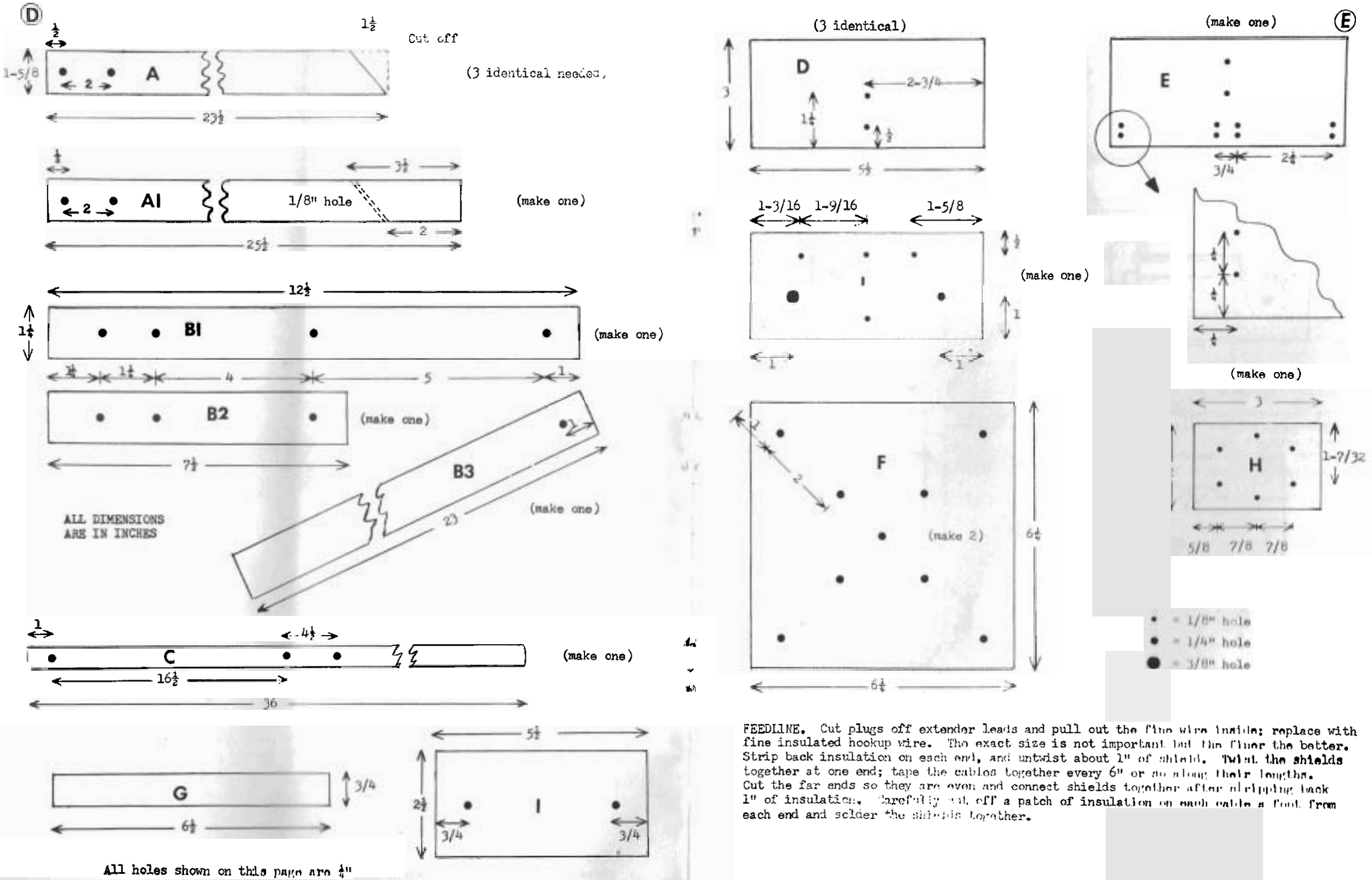
Newark Electronics Co., 500 N. Pulaski Rd., Chicago, Ill. 60624
Lafayette Radio Electronics, 111 Jericho Twp., Syosset, L.I., New York. 11791





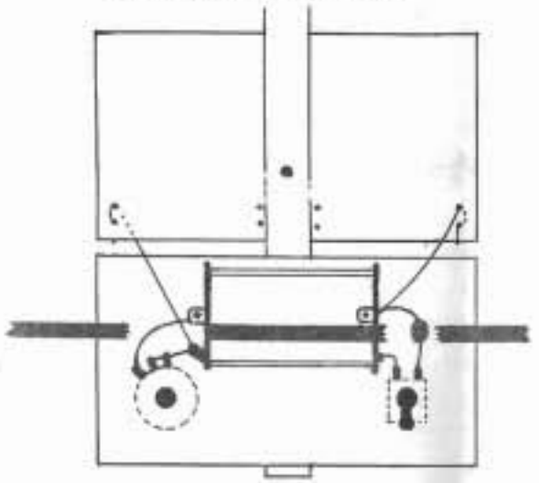
Altazimuth loop set at about 20° of tilt. Only the end turns of the winding are shown and the spreaders are omitted for simplicity. The two holes which would be used to mount either the FET amplifier chassis or terminal block (if FET's are not used) are visible below plate "e". The two wingnuts on plate "i" are used to lock the loop in a tilted position.

Side view of winding on one side of loop, showing the spreaders which have been "woven" through the windings and then twisted.

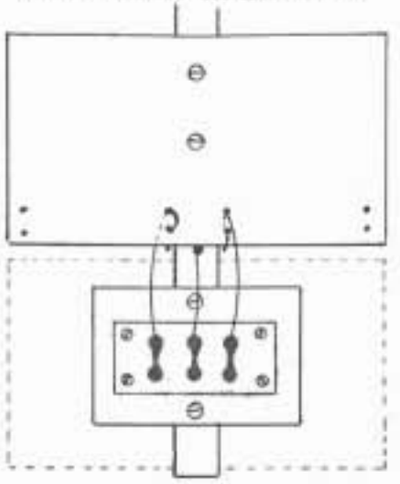


FEEDLINE. Cut plugs off extender leads and pull out the fine wire inside; replace with fine insulated hookup wire. The exact size is not important but the finer the better. Strip back insulation on each end, and untwist about 1" of shield. Twist the shields together at one end; tape the cables together every 6" or so along their lengths. Cut the far ends so they are even and connect shields together after stripping back 1" of insulation. Carefully cut off a patch of insulation on each cable a foot from each end and solder the shields together.

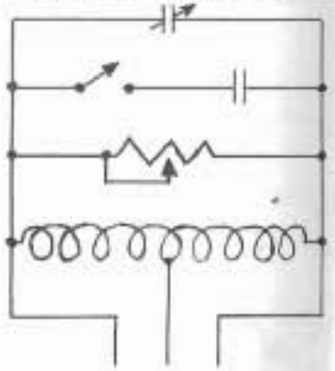
Terminal arm plate and tuning capacitor & Q-gain wiring



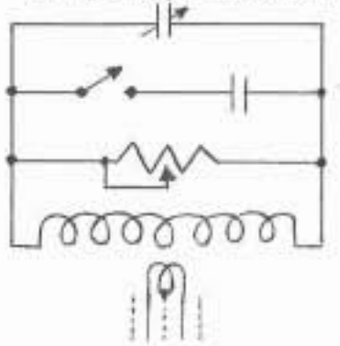
Terminal arm plate seen from other side with terminal block



Wiring if FET is used:



Wiring if amplifier omitted:

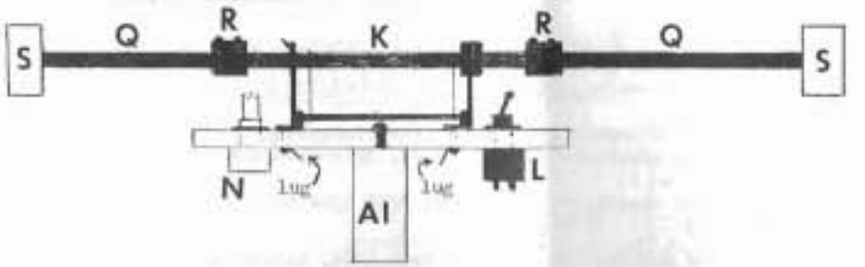


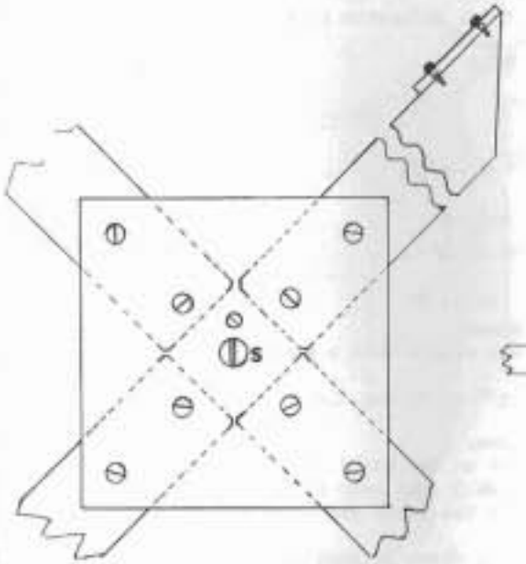
Terminal plate wiring if FET used:

Terminal plate if FET omitted:

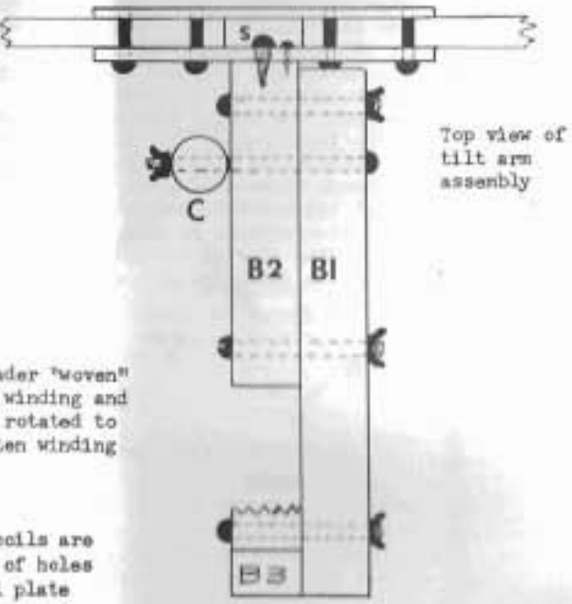
Wiring instructions: fasten wire to one end of terminal block by weaving in-and-out of holes as shown on previous page. Wind half of tank coil, keeping wire tight and straightening out bends and kinks as you go; feed remaining wire through the hole in the arm and finish winding. Note that both 8 and 10-turn tanks are symmetrical, with the center winding passing through the arm-hole; the same is true of the link coil. After winding is completed and has been tightened up, "weave" the spacers through the winding (over, under, over, etc.) and twist spacer 90° - this tightens up the winding and reduces the distributed capacity.

Tuning capacitor assembly viewed from underneath, showing extended shafts, range switch, and Q-gain potentiometer. Note that the tuning capacitor has only one terminal with a solder lug (on top); the second connection to the capacitor is made to the solder lugs on the mounting screws underneath as shown.

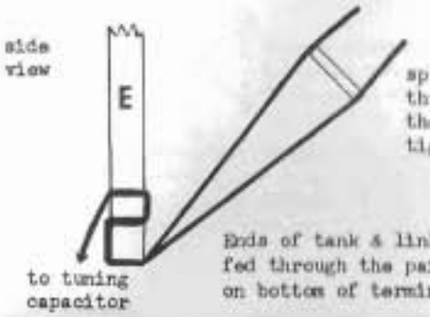




Side view of center plate assembly. The heavy screw marked "s" mounts the loop frame onto the tilt arms; a second smaller wood screw slighly off to the side will prevent the face from working loose. Note that screw "s" must be fastened to B2 before bolting center plates together!



Top view of tilt arm assembly



spreader "woven" thru winding and then rotated to tighten winding

Ends of tank & link coils are fed through the pair of holes on bottom of terminal plate

BALANCED FET AMPLIFIER FOR ALT-AZIMUTH LOOP ANTENNA

This amplifier, like all similiar high gain RF circuits, can oscillate or show other signs of feedback instability if carelessly constructed with overly long leads. The cross-neutralizing capacitors in this circuit should help to eliminate any such problems and the unit should operate properly the first time if the instructions are followed carefully.

T1, T2	2N4416A Type N Field Effect Transistors, preferably a matched pair. Made by several companies, including Texas Instruments and Crystalonics (need 2)
R1, R2	5 Kohm dual potentiometer, linear taper; IRC 46E1890C, Type 45 D502 MD502 16 from Newark
C1-C5	0.01 mfd, 75 volt microminiature capacitor, Lafayette 33 T 6905 (need 5)
L1, L2	10,000 microhenry miniature shielded coil, Nytronics WEE-WEE 10,000; Newark item 35F1924 (need 2)
C6, C7	miniature trimmer capacitor, 1.5-7 pfd; ERIE type 503-000 10A, Newark item 19F520 (need 2)

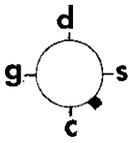
1 Aluminum minibox, 4" x 2-1/8" x 1-5/8", AMC type 1002, Lafayette item 12 T 8369
1 Sheet of Vectorboard; Lafayette item 19 T 8308
1 Package of Vectorpins; Lafayette item 19 T 8301
2 Transistor sockets, 4 pin printed circuit type; Lafayette item 32 T 4221
4 Solder lugs, Number 6 hole (see loop parts list)
6 Insulated feedthrough terminals, Number 6 hole

PARTS FOR OPTIONAL BATTERY CONDITION METER

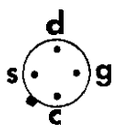
1	Milliammeter; Lafayette 99 T 5052 only
R3, R4	10 ohm resistor, ½ watt (need 2)
R5	12 ohm resistor, ½ watt
C8	0.01 mfd, 75 volts (see above)
1	Switch, any type

BUILDING INSTRUCTIONS

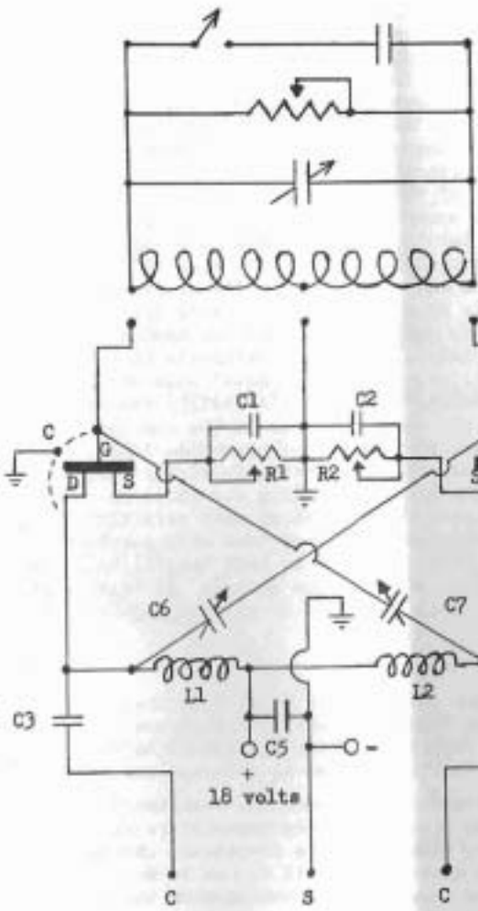
1. Drill holes in chassis box as shown in diagram.
2. Scribe the Vectorboard on a 9 hole by 9 hole square with a sharp knife and break out piece to serve as amplifier mounting.
3. Wire the bias control pots and leave about 3" of hookup wire to be connected later; mount pots in box as shown.
4. Mount the input and output terminals as shown.
5. Now wire the Vectorboard. Lay out the parts on the board in roughly the same relative positions as on the schematic. Push 3 pins into board on input and output edges as shown; these pins will line up with the input and output terminals on the chassis when the board is put into the box.
6. Mount transistor sockets on board in position shown by pushing socket pins through board and bending over on far side. Note that the gate pins on the sockets will be very close to the input pins on the board.

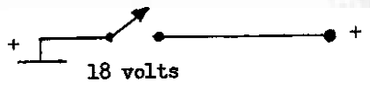


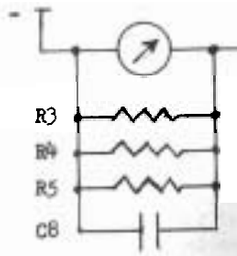
2N4416A FET leads viewed from above



Viewed from under-side







Shunts produce an extended meter range; full-scale will now be equal to 20 mA.

Double balanced feedline is run from FET output to receiver as shown above.

7. Mount the remainder of the components on the board as shown; parts with dotted outlines are on the under-side of the board. Push pins into board wherever needs to support the component or to pass through from one side of board to the other. Leave installation of the cross-neutralizing capacitors (C6 & C7) until last. Kee all leads as short as possible; in most cases no hookup wire is needed, the com component leads will be long enough to reach by themselves.
8. Since the neutralizing capacitors run diagonally across the board, their leads must pass over the rest of the circuitry. They must be mounted in a position such that the adjusting screws can be reached through the holes in the chassis box (A and B), and one terminal of each capacitor must be firmly soldered to a Vectorpin so that the capacitor won't rotate when it's adjusted.
9. Slide the board into the chassis box under the protruding input and output terminals; the terminals should then line up with the corresponding pins on the board. After checking to make certain that the neutralizing capacitors are lined up with the adjustment holes, solder the terminals to the board pins. From here on, anything that has to be done on the "down" side of the board will require tha these 6 terminals be unsoldered - so don't install the board too early!
10. Connect the leads from the potentiometers to the appropriate places on the top of the board; trim the leads to the shortest possible lenth. Also connect the wires for the battery to the board; used a twisted pair of hookup wire.
11. Now comes the only tricky part: installing the FET's in their sockets. Study the positions of the transistor leads as shown very carefully. Bend the leads on eac transistor very carefully into a pattern that will permit them to be plugged into the sockets as shown. Trim the leads so that they'll be as short as possible without shorting when the transistor is seated. At this point it is very easy to make a mistake with the lead positions so go very carefully. This completes the assembly of the amplifier.

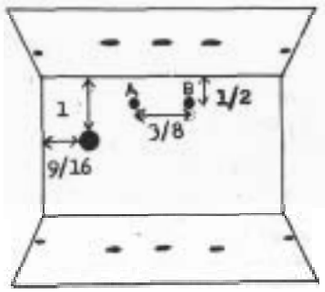
TESTING THE AMPLIFIER

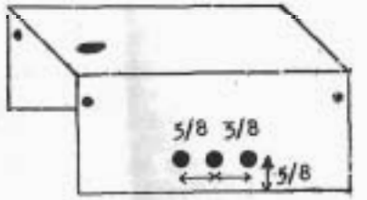
After the amplifier has been completed it is wise to check it out before connecting it to the loop or beginning the neutralization procedure. These checks can be omitted if you never make errors - or they'll have to be skipped if you don't have the equipment. The worst that can happen is a burned-out FET, fortunately.

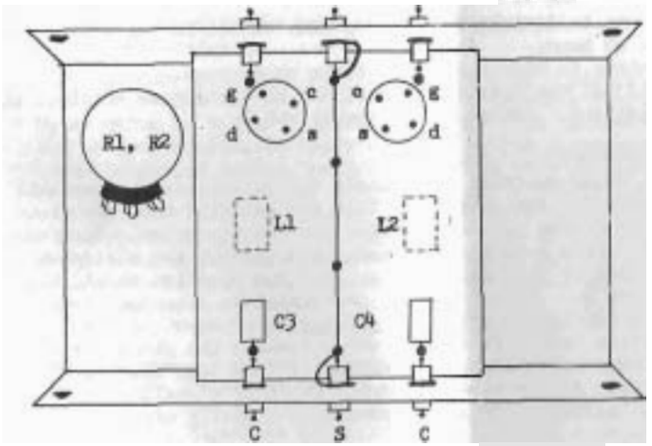
1. With battery power disconnected, measure the resistance from each of the input terminals to ground with a VTVM. If the transistors have been correctly fitted into the sockets and are both good, the resistance should be about 4 million ohms. If something has gone wrong it'll either be much lower or infinite. This simple check can be used to check the conditionsof the FET's if you suspect damage from nearby lightning strikes, etc.
2. Now short both input terminals to ground. Connect VTVM to one of the Source terminals and measure the DX voltage to ground with a VTVM; with an 18 volt battery, this voltage should vary from zero to + 3 or 4 volts as the bias pot is rotated from one side to the other. For any particular setting, the Source voltages on both FET's should agree within 10% or better; this indicates that both units are at the same operating point.

FINAL ADJUSTMENTS OF AMPLIFIER

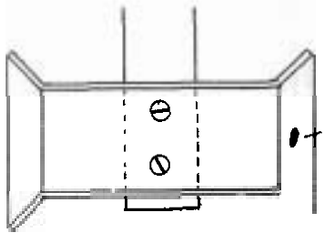
1. Connect the amplifier to the loop as shown; connect amplifier output to receiver with double balanced line. Connect battery power and set bias pots in midrange; the battery meter is used it will indicate a total current drain of about 8 mA. Tune receiver to a fairly strong station in the bottom of the band and try to pea the signal with the loop tuning capacitor. If the signal won't peak, switch in t range extending capacitor. If all is well, the station should peak up very sharp with the tuning capacitor most of the way closed; the signal output and tuning sharpness should vary over a wide range as the Q-gain control is rotated. If the amplifier breaks into oscillation at this point, it will have to be neutralized. oscillation does not occur, keep tuning up into the band until it does.



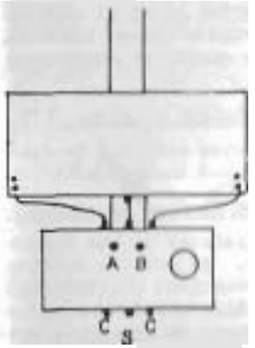




Use solder lug under center input and output terminals to establish chassis-ground.



hole for battery leads



2. When instability is finally encountered, neutralization can be started. With the amplifier oscillating (it may appear to be totally blocked), try rotating first one and then the other of the neutralizing capacitors; at one particular pair of settings the amplifier should come out of oscillation and operate properly. Now tune up to a station at the very top of the band (don't forget to switch out the range extending capacitor when operating at the top of the band); if instability is again encountered, a further very slight adjustment of the neutralizing caps will clear it up. Once the amplifier is neutralized for operation at the top of the band it will operate throughout the rest of the band; once set, these caps should require no further adjustment unless FET's are changed.

USING THE FET ALTAZIMUTH ANTENNA

Controls.

a) Tuning capacitor. Rotate to peak desired station; switch in range capacitor to tune to bottom part of band.
b) Q-gain control. Rotate to reduce antenna pickup as desired.
c) FET bias control. Adjust for maximum gain without distortion or spurious pickup.
d) Neutralization capacitors. Ignore once properly set.

To eliminate a local station.

Starting with the loop frame vertical (tilt angle = 0°), rotate the loop until the station pickup is minimized. Now unlock the tilt arm and tilt the loop about 20°; rotation will now give a deeper null on one side than on the other. Continue to increase the tilt angle while rotating back and forth through the null position. At one particular combination of tilt and rotation (and one position only!) the local signal will suddenly drop to a very low level or completely disappear into the background noise. This setting is extremely critical - movement of the loop frame by only a fraction of an inch from this setting often changes the pickup by 20 to 40 db; this is the reason for the unusually sturdy nature of this loop design. On some stations this setting will appear to slowly drift about by a small amount because of small amounts of signal scattered from the ionosphere directly overhead.

The actual null depth (i.e., how much a local can be reduced) depends upon a number of uncontrollable factors, including the nature of the transmitting antenna, the ground between the receiver and transmitter, and the presence of reradiation from local power and phone lines. Under the best of conditions the unwanted station can be reduced by at least 80 db; in the worst case observed by the author the null was still 38 db. When a very powerful local is very deeply nulled out, the remaining audio will sound extremely distorted - almost like single sideband; in this case the signal is being picked up as the result of scattering from the overhead ionosphere and no deeper null is possible.

To eliminate a distant station.

Adjust both rotation and tilt to minimize the undesired signal; because the polarization figure for a skywave changes with time, frequent readjustments will be necessary.

To make direction finding measurements.

Set the bearing pointer on the loop shaft so that it is pointing perpendicular to the face of the loop. Adjust the setting circle so that 0° corresponds to due North. Lock the loop in the vertical position (ALL DF MUST BE DONE WITH TILT = 0°!!). The angle shown on the setting circle when a particular station is nulled to its lowest level will then correspond to the great circle bearing to the station. Average a number of readings taken over a space of several minutes to obtain greatest DF accuracy.

General Nonlinear Transfer Functions and Spurious Mixing

RF amplifiers for radio receivers are designed to operate as linearly as possible but perfectly linear operation can only be approached but never achieved with real active elements such as vacuum tubes and transistors. While receiver front-ends are designed to operate as close to linear as possible with weak signals, their characteristics become increasingly nonlinear with increasing signal and AVC voltages. Mixer stages, on the other hand, are intentionally designed to be nonlinear in order to provide the frequency differences necessary in superheterodyne receiver operation. Many but not all of the spurious responses encountered in strong signal areas are generated by the receiver mixer stage; it is the purpose of the receiver RF and mixer tuning stages to reduce the undesired spurious mixing products to a minimum. In actual practice, the spurious responses generated in strong signal areas come from both RF and mixer stages with the exact proportion depending upon the particular receiver and stations involved.

Just which spurious responses will be generated by a particular mixer or RF stage? The answer to this problem requires that the exact transfer function for the tube or transistor in question be known; in actual practice this information is never available. It is possible to approximate the transfer function for a generalized nonlinear element with an infinite expansion series, however, and from this expansion predict all of the spurious responses that can possibly be generated. In actual practice not all of the predicted spurs will be observed, however; the relative amplitude of a particular spur will depend upon the magnitude of that particular term in the expansion series for the device in question. Nevertheless it is very useful to be able to predict in advance the potential spurs that will be generated by a particular set of local stations; if you allow your RF and mixer tubes to operate indefinitely without replacement you'll probably encounter more of these spurs than can keep your attention anyhow, hi.

Based upon the general series expansion for nonlinear elements, the following two equations will predict almost all of the spurious responses ever to be encountered in actual practice. Note that all of the simple types of spurious responses discussed in our earlier article, "Spurious Signals" (DXN, 2/15/69) such as images, internal sum and difference mixing, etc. are predicted by these two basic equations.

F_1 and F_2 are the frequencies of the stations involved
F_s is the apparent frequency of the spurious response
F_{if} is the receiver IF frequency (usually about 455 kHz)
F_{LO} is the frequency of the receiver local oscillator when tuned to F_s

Case I: $mF_1 + nF_2 = F_s$ [becomes F_{if} because $F_{if} = F_{LO} - F_s$] Normal conversion

Case II: $mF_1 + nF_2 = (F_s + 2F_{if})$ [becomes F_{if} because $F_{if} = F_s - F_{LO}$] Image conversion

m and n are positive integers: 0, 1, 2, 3, ...

The order of a particular spurious response is defined as (m + n); generally the importance of a spur decreases very rapidly as the order increases. When speaking of spurs, it is useful to distinguish between Case I and Case II for a particular m and n; we will therefore refer to a 2nd order Case II spur as an Order 2I spur, while the Case I 2nd order spur would be simply an "Order 2" spur.

- Gordon P. Nelson

IMAGES AND SPURIOUS RESPONSES REVISITED

by Russell J. Edmunds

There has been much said in many publications about the characteristics and elimination of images and other spurious responses encountered by DX'ers in the pursuit of new stations, and doubtless the growth of the hobby will spur still further comment as more DX'ers appear in large metropolitan areas, and, in many cases, with budget receivers, which generally are the underlying cause of a majority of the spurs heard by the owners.

Among the more common types of images and spurs encountered are sum and difference spurs, images appearing 910 kHz. from the station whose audio is heard, standard harmonic frequencies, and remixes of the sum and difference products lying outside the band with their originating stations. A complete discussion of these types of responses, as well as crossover modulation and sideband splash; as well as a comprehensive explanation of the correction of receiver-caused mixing can be found in the article "Spurious Signals" by G. P. Nelson, appearing in the 2/15/69 issue of DX News.

This author has previously compiled a list of these most common spurs for the New York City area based upon the above article, and found that there were still a good many un-accounted-for ones. In addition, they appeared to defy explanation by the usual formulae. Thus, having the ideal location for "image research" (within fifteen miles of five 50 kw. transmitters, one 10 kw. transmitter, and four 5 kw. transmitters) plus an ideal receiver for receiving them (a Hammarlund HQ-100), the results of such research have predictably yielded several variant types of images and spurious responses.

The first type to be explored is a relative of the 910 kHz. difference image mentionned above, only rather than appearing that amount distant from the originating signal, it appears 910 kHz. lower than twice the originating frequency. For example, in the New York area, and image of WJRZ-970 appears on 1030 kHz. This can be computed as follows: 2 X 970 = 1940; and 1940 less 910 yields 1030. Similar images have been heard by several area DX'ers from WHN-1050 (on 1190 kHz), WABC-770 (on 630 kHz), WPAT-930 (on 950 kHz), and WNEW-1130 (on 1350 kHz). The computation of the cause of this spur by means of the Nonlinear Transfer Function (description found elsewhere in this issue) uses the values M=2 , N= 0, and is an Order 2I spur, which is a type caused by extremely powerful and/or local stations.

A second variant is a heretofore unexplained type of mixing spur which also appears to be almost exclusively caused within the receiver, as it is dependent upon the IF frequenct of the receiver, generally 455 kHz., and as it does not respond to any degree of antenna trimming. Likewise, it is a bit more difficult to plot, which perhaps helps to explain its obscurity until now. It is determined by the formula: $F + F' = (Fs + 2\ F_{if})$, where Fs is the spur frequency, F and F' are the originating stations, and F_{if} is the IF frequency. Using the Nonlinear Transfer Function again, M= 1, N= 1 in still another Order 2I spur.

To illustrate, again using the New York area, we find a mixture of audios from WJRZ-970 and WINS-1010 appearing on 1070 kHz. This can be computed thus: 970 + 1010 (or 1980) = Fs + 910. Unfortunately, it is not impossible for two or more of this type of mixing spurs to appear on a single frequency (as is also the case with sum and difference product remixes). This causes a mixture of 4 audios (or 6 or 8 or even 10) which can generally be separated into their respective pairs by careful manipulation of the antenna trimmer (s) and Q-Multiplier. This is due primarily to the fact that very rarely is the IF of a given receiver precisely 455.00 kHz.

The same frequency of 1070 kHz. can be used to illustrate this occurance, where we also encounter a mixture of the audios of WHN-1050 and WPAT-930. This is computed similarly, 930 + 1050 = Fs +910, or 1070. Spurs of this type are fairly common in many metropolitan areas with many stations, given the right conditions (the wrong conditions, actually). Several of those heard by DX'ers in the New York area and submitted to the author are listed below:

690 - WABC/WNYC
830 - WABC/WJRZ
990 - WPAT/WJRZ
1070 - see text
1110 - WJRZ/WHN
1150 - WINS/WHN
1180 - WBNX/WOR
1190 - WNEW/WJRZ; WABC/WEVD-WPOW
1270 - WNEW/WHN
1410 - WNEW/WLIB
1430 - WINS/WPOW-WEVD

It should also be noticed that mixing spurs of differing varieties may appear on the same frequency. It is possible, however, for one of the audios to be prevalent in both spurs, thereby reinforcing itself to the point where it may appear to be the only audio present. Again, careful manipulation of the antenna trimmer (s) and Q-Multiplier should bare the distinct pairs. Of course, should the DX'er employ a subaudible heterodyne scope, (SAH) he would see immediately that two carriers are apparent.

Such an instance could occur in New York, should there be no signal from WEVD-WPOW on 1330 kHz., where a sum and difference product of WHN-1050 and WLIB-1190 could appear [(1190-1050) + 1190 = 1330], as well as one of the above variety [1190 + 1050 = 2240 -910 = 1330]. The possibility also exists, although significantly more remote, that three or even four different types of mixing spurs or images could be present on a single frequency.

Still another type of mixing spur occurs when the audios of four or more stations appear on a single frequency in such a way that an apparent image (spur) appears on a frequency which is the average of the two originating frequencies ($F + F'/2 = Fs$). The problem, however, is that such occurances as this seem to be special cases, and therefore the general rule governed by the preceding formula is not a general truth. It may well be that the apparent averaging spur is indeed an average of two or more pairs of spurs or pairs of locals.

In view of this possibility, it is necessary to explain something about the logic of FCC frequency allocations where they are pertinent to large metropolitan areas as these conditions relate to the problem. FCC regulations state that no two stations within a certain number of miles of each other (which distance is relative to their corresponding powers) may be located on frequencies separated from each other by less than 40 kHz. Thus, we find that in a majority of large metropolitan areas, a good many stations are separated by this minimum distance only, while many others are as close as 50 or 60 kHz. In New York, of course, this problem is at its worst, since the greatest per-area concentration of stations is found there. For two examples, New Yorkers have strong (in excess of 5 kw.) locals on 930, 970, 1010, and 1050 kHz., all only 40 kHz. inter-removed from each other. Furthermore, New York also has locals on 1280, 1330, 1380, 1430, and 1480 kHz., all 50 kHz. inter-removed. Needless to say, this causes problems. The mid-banders are the most severe, as they are the more powerful, less-apt to be directional, and most closely concentrated in terms of transmitter geography. This is the major cause of the mess on 990 kHz. as described earlier, and, the major cause of the apparent "averaging" spur.

It so happens, that two of these so-called "averaging" spurs also appear on 990 kHz. These are often separable from the previously noted spurs and this leads to further confusion. These apparent spurs are a mixture of WJRZ-970 and WINS-1010 (1010 + 970 /2 = 990) and WHN-1050 and WPAT-930, (1050 + 930 /2 = 990). Of course these are not the only ones audible in the entire New York BCB scene, either. Others have been observed on 1030 kHz., (from WINS-1010 and WHN-1050) and on 1180 kHz., (from WERA-1590 and WABC-770). Also possible on 1030 kHz. is an "average" of WNEW-1130 and WPAT-930; while also possible on 1180 are "averages" of WCBS-880 and WHOM-1480, and also WPAT-930 and WNJR-1430.

Furthermore, it seems that these types of averaging spurs appear only on such frequencies as there is present one (or both) of two situations:

1) At least four pairs of audios (not necessarily 8 different stations) are present on the frequency

-or-

2) At least two "averaging" spurs are predicted on the frequency.

The most troublesome frequencies are 990, 1030, 1070, 1090, and 1180 kHz., and a list of what may theoretically be found there follows. The key is thus:

A = a sum and difference product
B = a difference frequency
C = the Order 2I spur where M=2 & N=0 : $2F - F_{if} = Fs$
D = the Order 2I spur where M = 1 and N = 1 :
$F + F' = Fs + 2F_{if}$
E = apparent averaging spur
* = spur or image has been heard in NY area

990 kHz.

WABC/WCBS	(A)*	WQXR/WMCA	(B)	WHN/WPAT	(E)*
WMCA/WEVD-POW	(D)	WJRZ/WPAT	(D)*	WINS/WJRZ	(E)*
WADO/WVNJ	(D)	WINS/WHN	(D)*		
WOR/WLIB	(D)	WHLI/WCBS	(E)		
WABC/WNEW	(D)*				

1030 kHz.

WJRZ image	(C)*
WNYC/WPAT	(A)
WADO/WNBC	(D)
WINS/WPAT	(D)*
WMBL/WMCA	(B)
WINS/WHN	(E)*
WNEW/WPAT	(E)

1070 kHz.

WHLI/WCBS	(D)
WINS/WJRZ	(D)*
WPAT/WHN	(D)*
WHLI/WNEW	(A)
WLIB/WNEW	(A)*
WHOM/WNBC	(E)
WNJR/WOR	(E)

1090 kHz.

WMCA/WNYC	(A)
WPAT/WABC	(A)*
WINS/WHN	(A)*
WINS/WPAT	(A)*
WNJR/WMCA	(E)
WBNX/WVNJ	(D)
WNEW/WHN	(E)*
WVNJ/WQXR	(E)

1180 kHz.

WNJR/WNBC	(D)
WBNX/WOR	(D)*
WBNX/WADO	(A)*
WHOM/WEVD-WPOW	(A)
WHOM/WCBS	(E)
WPAT/WNJR	(E)
WABC/WERA	(E)*

* * * * * * * * * * * * * * * * * *

Although each differing type of spurious response presents its own individual problems, there are some general rules for their reduction and prevention. In the case of external mixing spurs, or those created outside the receiver, there is little to be done. While critical tuning of the antenna trimmer (s) and Q-Multiplier may help, the problem cannot be eliminated. With internal spurs, or those created within the receiver or antenna system, there is some relief. Since these types of spurs are not reradiations as are the external mixes, they can be peaked and separated by means of the antenna tuner and Q-Multiplier in many cases, and when this is so, they will peak with the antenna trimmer in the same position as for the originating station (s), rather than the point of incidence. This author has found that additional antenna trimmers and Q- Multiplier in addition to those already in the receiver may be of great value.

Still another trick to help reduce the problems of spurious responses created in the antenna system is the use of common springs as used on older wooden-type screen doors. These are installed at both ends of the longwire, between the standoff insulator and the point of attachment to whatever the wire is hung from. This will serve to take up much of the stresses caused by such natural phenomena as wind, snow, ice, sleet and suchlike. For those who are unfamiliar with the spring in question, it is about a foot long, with about a one-half inch coil diameter. This not only keeps the wire from snapping due to bad weather, but significantly reduces the possibility that what may once have been the world's best solder joint will become an open solder joint.

The author has used a self-compiled set of master charts for the New York City area in the preparation of this article, and will be quite happy to identify whatever spurs or images may be heard by other area DX'ers, should they be unable to determine their origin themselves.

Still further information on reduction and elimination of spurs and images will appear in forthcoming issues, under the title "How To Live With A Budget Receiver".

AUGUST 23, 1969

"AM" SITUATION

ONS:	920	WMEG	SPU-HI, inc. MM	1450	W O C N	NSP-HI
	1230	W Q U A	NSP	1510	W M E X	NSP-rr
		W J O B	NSP-NN	1520	W T T O	SPU, on MM, rr
	1300	W A V Z	AN6-rr	1590	K Y O K	SPU, NSPT
	1310	W I B A	SPU	1600	W T R U	AN-6
OFFS:	960	C K W S	MMs	1500	W T Q P	MMs
	980	W O N E	MMs	1590	W T B Y	

SPECIAL TEST: MM 10/29 W G S M 740 Huntington, N.Y. 5,000/1,000 2:30 - 3:00 NRC

HEARD SINCE LAST ISSUE 1110 W T B Q Warwick, N.Y. (7/25) N R C
1580 K L U V Now 1kw. D-1 1590 K L I V Now 5,000 U-2

CHANGES IN STATION DATA - F.C.C.

Purchased from Cooper-Trent)

NEW CALLS

930 W E K O Cabo Rojo, Puerto Rico 1510 K E M M Marshfield, Mo.

CALL CHANGE

1450 K O B O Yuba City, California, from K Z I N

FACILITIES

950 K L E R Orofino, Idaho, to 1,000/500 U-2, from 1,000 D-1.
1000 W B N B Charlotte Amalie, Virgin Islands, 1,000 U-1. New antenna system.
1040 K H V H Honolulu, Hawaii, 5,000 U-1. Move XR N.E., taller antenna, 270' ex-210'.
1230 W C B T Roanoke Rapids, North Carolina, 1,000/250 U-1. Cancel moving XR site.
1420 K J S T Joshua Tree, California, 1,000 D-1. Move XR N.E.
1450 K O B O Yuba City, Cal. (ex-KZIN) to 250 U-1, from 100 U-1.
K R Z Y Albuquerque, New Mexico, to 1,000/250 U-1, from 250 U-1. Taller antenna.
1470 W R B D Pompano Beadh, Florida, 5,000 D-3. Minor pattern change.
1500 W K B X Winston-Salem, North Carolina, to 10,000 D-3, from 1,000 D-1.
1590 W A L G Albany, Georgia, 5,000/1,000 U-4. Changes in night pattern.

COME TO ST. LOUIS AND HAVE FUN! THIS IS OUR LAST OPPORTUNITY TO REMIND YOU ABOUT THE GREAT LABOR DAY WEEKEND - THERE WAS GREAT DETAIL IN THE 8/2/69 DX NEWS, SO WE HOPE TO MEET OODLES OF NRCERR IN ST. LOUIS? AND LET'S HAVE A REAL GOOD TIME!

JIM RENFREW - 30 Siwanoy Lane - New Canaan, Connecticut - 06840

DX here is at its lowest since May w/only four new stations; WAWZ-1380 7:10pm 8/3, CKPM-1440 11pm 8/4 after WHHH s/off, WDAK-540 7pm 8/4, WCAM-1310 7:30pm 8/4. Does anyone know where Zarephath, N.J. is? (Yes -ERC) On a trip to New Mexico & back I logged 647 stations boosting my total to 1,249 w/481 at base. Veries from WDIA KOAM WOKY WKY WEOL WBCK WTRY KTUF KSWS WISN KIXL WFWR CHLO (plan to go on 1570 soon) WHFB WKOW WAUB WLUV WOLF WRJN WSBW WKIP KGNC KGGF KNBR WMT KOA KVOO. This MM 8/4 I thought I heard a 540 station szy Windsor - CBEF yet? Until next, 73s. (CBEF will be FF, Jim, and Zarephath is a suburb of Bound Brook, hi -ERC)

ERNEST R. COOPER - 438 EAST 21 STREET - BROOKLYN, N. Y. - 11226

One verie, v/l from WTBQ-1110, Warwick, N.Y., logged here on 7/28 @ twilight whilst looking for other daytimers on that spot, and not knowing they were on the air already - they are, w/250w. and sked in August is 5am-7pm EST. I've noted several claim veries from CJRC-1150, Ottawa - but nobody has sent in the v/s. Wouldst? MM 8/4- ET/TT/rr on 1550 @ 1:02, turned out to be WDLR, unn. AN WTTO-1550, Toledo, O. noted w/rr w/WKBW off, w/mucho hetro from Colombian, now on the high side of 1520. ET/TT/OC also on 1070, but no IDs heard, 1:30-2:30 & on. WSOQ-1220 noted several twilights lately around 7:10-7:14 s/off, not enough yet for a report. I'LL SEE YOU ALL IN ST. LOUIS! LET'S HAVE A BALL THIS YEAR!

More "HEARD SINCE LAST ISSUE": 1300 WLOT Marinette, Wis. 1430 WKEX Blacksburg, Va.
1560 WCCP Clemson, S.C. (these from Len Kruse)

VERIFIERS

A - R. Wood D - L. Kruse
B - F. Waldron E - Page Taylor
C - R. Edmunds F - R. Johanns
G - E. Cooper

540	W GqT O	D. H. Schick, CE	E	
610	K E P R	D. W. Mitchell, GM	A	
620	K N G S	M. L. Sawyer, CE	A	
630	K I D O	D.K.Cederstrom, CE	A	
	W MqA L	u/u	F	
740	K CqB S	H. Immekus, DoE	A	
770	W C A L	(M. Hollabaugh DXPgm	A	
		(M. C. Jensen, D	A	
810	K C M O	E.J.Hartenbower, VP/GM		
	W D M P	H. Hennessey, NxD	D	
860	K W R F	A. Wiese, CE	E	
900	CmH MqL	W. A. Hall, VP, M	F	
	W KqX V	M. L. Thompson, CE	F	
920	K DqH L	J. E. Hyde, CE	E	
940	C JqG X	H. Kerr, CE	E	
	K I O A	B. C. Auten, E	AB	
	W I N Z	W. Fletcher, CE	A	
950	K IqM N	G. Vogel, CE	E	
	W RmY T	(G. Fox, NRC	FG	
		(P. J. Gowen, CE	DFG	
960	W DqB J	u/u	F	
970	W D A Y	(J. M. Hetland, TD	A	
		(Betty Drummond, S	A	
990	W N R Y	J. R. Boult, E	E	
	W W D A	J. Hughes, M	D	
1000	W I O O	C. A. Cleland, AE	F	
1010	W BuI X	T. Nornhold, CE	G	
	K S A Y	G. C. Campbell, CE	A	
1020	K DqK A	u/u	A	
	K GqB S	D. R. Breger	E	
1060	W O K L	R. E. Nelson, P	D	
1060	W O I O	J. S. Haitzler, CE	F	
	K P A Y	J. A. Claire, ProdD	A	
	W N O E	W. Magruder, M	A	
	W MhC L	W. Choisser, CE	E	
1120	K M O X	C. Sarros, Dir,TechOp	A	
1140	K S O O	M. E. Pierce, DoE	A	
	W B Z Y	W. G. King, CE	F	
1150	K S A L	D. A. Engelhardt,CE	A	
	W D E L	J. W. Jones, CE(NRC)	E	
1190	K RqZ Y	u/u	A	
	C FqS L	J. Mitschke, CE	F	
1220	C HqS C	u/u	C	
1230	W E R I	R. B. Johnson, CE	E	
	K X O	G. Nelson, P, GM	A	
1240	K S O N	D. McKinnon, CE	A	
1250	C KqO M	M. Greer, CE	A	
1260	W W Y N	G. MacMurdy, CE	F	
1270	K T F I	Lois Biser, OM	A	
	W H B F	R. J. Sinnett, VP/EM	A	
1280	K O A G	(Mrs. E.Shurtleff, TM	A	
		(B. Strotman, E	A	
	K S O K	S. C. Thompson, VP/GM	A	
	W D S U	H. M. Wheelahan	A	
1290	K OqI L	J. Weist, CE	A	

1300	K OqL	u/u	A
1310	K Z I P	J. Hathcock, M	A
1320	K X Y Z	C. Peterson, Ops D	A
	C BqQ M	M. L. Foisy, Prod M	A
	W KqA P	C. E. La Bar, CE	F
	K EqL O	Mrs. M. Artus, EngS.	A
	K CqP X	W. Wright, M	A
1330	K V K M	J. R. Aker, PD	A
1340	WqR OhD	J. McDonough, CE	E
1350	W OfR K	E. Zug, CE	B
	W LmN H	W. M. Allison,ExecVP/GM	E
	W F L S	J. W. Poole, SM	F
	K R N T	C. F. Quentin, CE	A
	K K A M	T. Mejia, CE	A
	K RqL C	u/u	A
	W S M B	A. J. Bourgeois, CE	A
	K AeB Q	Jose Andrade	A
1360	K E Y Z	C. L. Scofield, CE	A
	K R Y S	L. S. Burch, CE	A
	K G B	C. N. Duncan, CE	A
1370	W M H I	H. C. Fisher, CE	C
1380	W A C B	N. E. Gour, CE	B
	K T O M	D. W. Wollard, CE	A
1390	W N U S	S. Schett, CE	B
1400	K A T I	P. S. Kuhn, CE	A
	K G V L	J. D. Jones, AM	A
	K I U N	B. C. Peters, SM	A
1440	K P U R	J. Skelton, CE	A
	K D N T	H. V. Shepard, O, M	A
1450	K S N Y	R. Meador	A
	K AqY C	J. Easterwood, CE	A
1460	K R N Y	W. J. Abbott, M	A
	K V R E	W. H. Colclough, P	A
	W M B R	J. Melvin, A	A
	W ArC O	R.N.L.Glasgow, M	A
	W PfN X	C. McHan Jr., CE	E
	K Y S N	G. A. Gunter, PD	E
	W OqK O	D. Nash, CE	F
1470	K D H N	H. Daniel, M	A
1480	K R E D	P. Hoff, VP, GM	A
1490	W T R L	J. K. McKendree, VP, GM	A
1510	K S O M	D. J. Maloney, CE	A
	W AcH T	F. D. Hemler, CE	DE
1520	W C S V	M. Johnson, GM	D
1530	K C L B	D. Taylor, CE	A
	K W L A	T. Wayne, PD	E
	W PmN O	J. M. Aikman, SM	E
	K FqB K	A. C. Williams, M	F
1540	W R C P	R. B. Thomas, CE	D
1550	W R I Z	W. J. Wheatley, Op M	A
	WmV AuB	D. Beckstrom, SM	G
1560	K W C O	D. H. Young, PD	A
	W A F I	W. Powell Jr., O, E	D
	W Y S E	C.W. "Red" Wright, SM	E
1570	W DqE W	T. K. Whitten, OM	C
	W T O W	W. L. Riley, CE	D
1580	K TqU F	J. Young, CE	D
		(L. CHAMBERS, CE	A
	K B G O	J. G. Handley, PD	A
	K LqO U	D. Chimeno	A

DX SHOWCASE

POST CARD

Dear Sir,

Your report on reception dated 15-12-67 *has been examined.*

This confirms that you were listening to 5 MV *on* 15-12-67 *at* 8.00 p.m.

A.E.S.T. 11.00 *G.M.T.*

This transmitter is located at KENMARK *and operates on* 1540 *kc/s,* 189 *metres.*

Thank you for your interest in reporting on your transmission.

Yours faithfully,

The AUSTRALIAN BROADCASTING COMMISSION

Address only

PROFESSOR E. RICHARD WOOD,
DEPARTMENT OF EUROPEAN LANGUAGES,
UNIVERSITY OF HAWAII
HONOLULU,
HAWAII. 96822.
U. S. A.

RTB **BRT**

BELGIAN BROADCASTING AND TELEVISION

PLACE EUG. FLAGEY, 18, BRUSSELS 5

HOME SERVICE :

FRENCH NETWORK

Bruxelles I	620 Kc/s	483,9 m	150 kW
* Bruxelles IV	1124 Kc/s	266,9 m	10 kW
	1484 Kc/s	202,2 m	5 kW

* *Programs from studios in :* Mons - Namur - Liège - Luxembourg

FLEMISH NETWORK

Brussel II	928 Kc/s	324 m	150 kW
* Brussel III	1511 Kc/s	198,5 m	20 kW
	1484 Kc/s	202,2 m	0,5 kW

* *Programs from studios in :* Antwerpen - Gent - Hasselt - Kortrijk

This is to verify your reception report of Nov. 15. 1965 on 926 Kc/s

To
Mr. Jerry M. Conrad
P.O. Box 244
Kentucky, 41101
U.S.A.
Alexandria Ky

1000 watts on
690 kHz!!

Armed Forces Radio Station WVUQ
Hq USAF
APO 709

22 December, 1945

Mr. Norman L. Manguire
101 Hope Street
Stamford, Conn.

Dear Sir:

This is to verify your reception of the Armed Forces Radio Station WVUQ at Guadalcanal. Your report of 6 Dec. has been checked against our station log and seems to talley in all respects.

Incidently, 6 December (your time) was our last day of broadcasting. A new station was installed and is presently being operated by the Army Airways Communications System. The new station is on the same frequency with the same power. The transmitter is a Western Electric 443-A with Doherty Amplifier. Coverage on the island is much better as the new location is much better, and a better ground system is employed. The old station used an RCA 1-K transmitter, and the antenna was surrounded by cocoanut trees on all sides.

I would appreciate very much if you would listen for the new station as I feel sure that you will hear it, and would like to make it of record.

In closing, thanks very much for your report, and hope to hear from you very soon, 73 es DX,

Rudolph M Rubin Jr.
RUDOLPH M. RUBIN, JR.
OIC AFRS WVUQ

Address:
Lt. Rudolph M. Rubin, Jr., O-1693854
Hq USAF, I-2 Section
APO 709, c/o Postmaster
San Francisco, Calif.