



# DX News



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"DXN and NRC are great! I appreciate the fine effort of the Publishing Committee. Let me congratulate you and keep 'em coming." (Prof. S. Dexter Squibb)

## IN THIS ISSUE...

- MW Antenna Patterns, Part 2B - Paul K. Hart
- Tips for Novice DX'ers, Part 2 - Russ Edmunds & Page Taylor
- Report from Thailand - Glenn Hauser
- The Aurora of November 6-9, 1970 - Gordon P. Nelson

## MORE NEW NRC MEMBERS THIS WEEK...

- \*Tony Lagattuta, P.O. Box 6291, Portsmouth, Va. 23703
- \*Jean Gilede, 150 Ave. de L'Eglise, Apt. 20, Verdun, Montreal 203
- \*Rick Briggs, 4138 Kirk Rd., Youngstown, O. 44511

Welcome to the NRC, gentlemen, your new member kits have already been mailed to you and will be reaching you shortly. We hope to see the results of your DX'ing efforts often here in the pages of DX NEWS.

## RENEWALS...

Hays... Rewald... Critchett... Hathaway... Plonka... Bay... Leamy... Hutchinson... Giese... Nissen... Behoteguy... Suddock... Boyd...

## PUBLISHING SCHEDULE...

Next week is the regular Thanksgiving skip in our schedule; deadline here in Watertown for copy for the next issue will be November 28th. All editors take note. We expect the next issue to be a 40-pager and are going to try to run some pictures too...

Best of DX - GPN

Fri. Nov. 27	W C R V	1580	Washington, New Jersey	1,000	12:01 - 12:30	KRRC/IRCA
Mon. Dec. 16	W K I Y	890	Raleigh, North Carolina	10,000	1:00 - 1:15	NRRC
	H C J B	700	Quito, Ecuador	30,000	2:00 - 3:00	IRCA
	K R E L	1370	Corona, California	500	3:00 - 6:00	IRCA
Mon. Dec. 23	V I Z S	1450	Henderson, North Car.	250	2:30 - 3:00	NRRC
Sat. Jan. 23	W M H C	1430	Morganton, North Car.	1,000	2:00 -	NRRC
Mon. Feb. 15	W E T P	1490	Salisbury, North Car.	250	2:30 - 3:00	NRRC
Sat. Feb. 20	W K E E	1380	Asheville, North Car.	5,000	1:10 -	NRRC
Mon. Apr. 25	W G B C	1400	Greensboro, North Car.	250	2:00 -	NRRC

(Special thanks to Larry Godwin who sent the first page of current IRCA "IN MARCH" giving us the new IRCA and NRRC IN TESTS.)

In the event you don't get the next issue in time for details on the 12/14 IRCA TESTS, here are the names & addresses for your reports:

**HCJB-700.** This station put on an NRRC DX, we believe, several years ago I cut through WJW beautifully all over the U.S.A. & Canada, except, of course, in the Cincinnati area. Then they played Sousa marches & hymns. No info on the program contents this time. Larry Godwin had written WJW asking for a stand-by - no reply at our press date here. Write to Mr. Clayton Howard, HCJB, Casilla 691, Quito, Ecuador.

**WREB-890** This test will feature rock-n-roll music with IDs after every record. They'd like to know your actual logging location as well as your mail address. Send reports to Mr. James R. Miller, KRRL, Box 100, Corona, California, 91720. Bill Powers & Edward Haden of IRCA arranged this.

**WELX-850** No info at all, even in their bulletin. Send to Chief Engineer, we'd suggest. A tough channel at this hour.

**WCRV-1580,** reports for 11/27 TEST go to William Geitzenauer, C.E., WCRV, Route 31 E - Washington, New Jersey - 07832.

NEXT WEEK THE PUBLISHING CREW TAKES ITS ANNUAL THANKSGIVING BREAK. WE WILL BE BACK IN YOUR MAILBOXES AGAIN IN TWO WEEKS, WE HOPE, WITH SOME REPORTS AND INFO FROM YOU! DEADLINE IN BROOKLYN FOR MUSINGS IS EACH THURSDAY. KINDLY DOUBLE SPACE ALL REPORTS AND VERB SHORTS LISTS. PLEASE DO NOT INCLUDE REMARKS IN YOUR MUSINGS THAT YOU KNOW ARE GOING TO BE DELETED. WE MAKE EXTRA WORK FOR YOUR EDITOR! STICK TO BCN DX IN YOUR MUSINGS AND YOU CAN'T GO WRONG. INCLUDE DATES, TIMES, AND FREQUENCIES OF YOUR CATCHES SO AS TO HELP OTHER DXERS.

ERNEST R. COOPER - 438 East 21 Street - Carrier Route 23 - Brooklyn N.Y. 11226

No veries, and again, all DX done on the MM, this one, 11/9. Up at 2:30 to find the buzz from some new fluorescent light going strong until about 3:50am. I tried for WODL, & heard some TEs around 3:20, & a tentative report to them, but I can't be sure. I noted TEs on 1550 and 1300, first weak, latter, S-2. At 3:55, s/on annihilating WKRN, R. Rumbos, giving two CB, one FM, & two SW frequencies were given. This one has a tremendous signal - I can miss it who's away from a 570k local. After 4:30 though, I noted a strong interference to Rumbos - the one who gave us a DX TEST last Winter - R. Crista, in Rumbos' logo - hi, Cesar O. At 4:21, tuning around, I noted WPMI-930, local on 1000. I could detect an SS by tuning just to the high side of his CW. In 1987 year, WY to a Canadian c/w AF, either St. John (CFBC) or St. John's. I was about to tune away, at 4:24, came a strong & beautifully clear signal from WLLI, Jenduburg, Va. for a new one here. A first new 930 logging 2 years or so. Prior to this I noted a weak SS on 655, apparently an 800's TE starts around 1:10 & does well again on WCAQ, E. Raleigh. Imagine it being, but it went u/WKQ so no log. These two SSES on 655 & 800's. I saw a local WYB-830 noted power in @ 5:00pm. DUB.

## MUSINGS of the Members



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

**JOHN SAMPSON - 4148 Wycliff Drive - Winston-Salem, North Carolina - 27106**  
Greetings. Small amount of DX since last report includes \*WAPI-1070 Birmingham @ 7:30-7:45pm on 9/24 - not usually heard here due to WFLI and WIBC who normally dominate 1070 at night. 9/27- \*WHYZ-1070 Greenville, S.C. extremely weak & tough through QRM @ 7:45 s/off - they don't radiate much up this way. 9/29- Unusual daytime reception @ 11:30am of \*WCGC-1270 Belmont, N.C. u/WHBO/WMPM. 10/7- \*WRPM-1530 Poplarville, Miss. weak @ 7:15 s/on. 10/17- More unusual daytime reception- \*WAGY-1320 Forest City, N.C. way u/WCOG/WLGM @ 1:30pm; WHIN-1010 Gallatin, Tenn. 7-7:15pm s/off. 10/18- WTIP-1240 Charleston, W.Va. @ 12:07am RS, \*WAYB-1490 Waynesboro, Va. 12:05am s/off; \*WTRQ-1560 Warsaw, N.C. very strong on ET; WHAP-1340 Hopewell, Va. through local WAIR @ 12:45pm; & finally on 11/4, back on EST, new WRRR-1520 Warrenton, N.C. dominating on 6:45 s/on: (\*- verified). Other random veries include holdouts WLEE-570 WAYS-610 & WTIK-1310 as well as WCKB-780 WCBX-1130 & WCPC-940. Still having problems with WGTL-870 WAAK-960 & WRAD-1460. On the local scene, WFCM-1550 is now signing on daily @ 6am. Their PSA is something in the order of 6 watts, & although they are s bject to heavy QRM & are inaudible right after 6 (I'm about 4 1/2 miles from their XR) they are as strong as their normal 1kw signal the 15 minutes or so before "formal" sunrise here. 73.

**J. ALEX BOWAB - 623 West Fairfax - Apt. 6 - Norfolk, Virginia - 23507**  
Local beat: WCVU under new ownership changed to WKIX during October. Though they remain a lackluster rr station, Tidewater's 1350 now boasts of things other stations always had - basics, like a format, hourly NX, playlist, contests - and, if you will, an AN show. I checked public files at FCC HQ to find that WPMH-1010 has, as I suspected, one lobe E, protects WSID to NNW & WELS to SSW. Remedial work on their building's faulty construction will put off just a bit more their long-awaited inception date (3 1/2 years long enough Would-You-Believe Department: We all know that the jamming on 1140 is bad, but it's audible evenings in downtown Richmond u/WRVA! Twenty miles outside town, forget it. Foregoing noted on recent night trip through the Virginia capital city. Methinks the state's foremost 50kw station hath suffered extensive setback as a result. Who Cares Department: That J. Alex Bowab to appear in Broad casting's back pages sometime next month as a one-third partner in application for 94.7 FM in Jackson, Miss. is the same one as this Musings' author. (Small world, eh? We have acquired the studio & XR of defunct WWHO-FM (100kw multiplexer) & hope to resuscitate it, soon after the Navy & I part company in about 11 months. Perhaps someone reading this might be interested in becoming a part of this outlet which is to be black-oriented, integrated in all respects, and heavy on community service. If you are, & think you could hack Mississippi, I'd be pleased to discuss with you our plans. Boston- please bill me at the above address for the use of Musings as classified advertising.

**ROBERT LIGON - 539 North Firestone Boulevard - Akron, Ohio - 44301**  
Hi! DX: 10/27- WBAM-740 Montgomery w/rr far u/CBL @ 8:10pm EDT. Are we still on EDT in DX NEWS in Domestic sections? (When it went out, so did we -ERC) I was in Nashville recently. I visited WLAC AM & FM while I was there & I must say that I really had a time finding it because they were rebuilding their section of the L&C Tower. The FM wasn't much either, three small rooms on the 31st floor. I guess the best part about the visit was that I got see Nashville from the observation deck without paying the 40¢ fee. WMAK & WVC SCs are yours for the asking. I'm really looking forward to hearing KRCL this season. Maybe even KORL & KGA. Much more DX next time. 73s.

REMEMBER, FOR BEST RESULTS, ADD "CARRIER ROUTE 23" TO YE ED'S ADDRESS! ALSO REMEMBER OUR DEADLINE IS THURSDAY, AND OUR LIMIT IS 30 LINES. DOUBLE SPACE!

**WILL FEIND** - 8708 Contee Road - Laurel, Maryland - 20810

CX of late have been Auroral, to say the least. Things ~~seemed~~ to be settling down, w/some TAs coming through, but this PM (11/9) the blanket appeared again. Agadir-935 was still showing, however weakly, so this one may not be as bad as the last, though. To DX: 10/16- Ondas de Cienega Grande-1160 @ 5:25am w/ KBL looped; KAAV-1090 @ 6:15-6:30pm w/Life Line o/u local WBAL. 10/18- YSC-1015, R. Internacional @ 10:45pm. 10/23- WCOC-910 Miss. briefly amid jumble @ 6:45pm w/ID. 10/24- WSWN-900 Fla. w/s/off @ 5:58pm; WKXV-900 Tenn. w/s/off @ 6; WCOC-940 Miss. @ 6:15 w/terrific signal & announcing most distant listener contest; WXTN-1000 Miss. @ 6:17-6:30 s/off w/NA; YVFN-940 @ 6:32-6:40 w/sporting event & Burboes ID; CMCA-830 @ 7:50 w/ID R. Cordon de la Habana; 4VEJ-830 @ 8 w/ID in FF w/CMCA looped; YNG-555 @ 9:45 weak w/Tic Tac ID; YNRPS-1285 @ 10:25-10:40 w/frequent R. Grenada IDs; YNLU-965 @ 11:15-11:30, had full ID @ 11:30; YSCF-1155 @ 11:55 w/ID as Ondas Orientales. 11/1- Some interesting daytime reception; WJJD-1160 @ noon; WJR-760 @ 12:15pm; WMAA-670 @ 12:30. 11/3- El Beida-1124 @ 5:20 w/ Arabic folk mx. 11/6- WKAU-1615 Pirate from 12:30-1:47am w/underground mx & on the air telephone calls. I believe this one located in NYC area because of address given & discussion of WABC's programming w/one of the callers. This one was quite strong peaking A 8-8, but modulation was quite poor & QRN heavy. 11/8- KZAI-1040 @ 5:35am w/R. Tropical ID; WSGI-790 Va. @ 6:10 s/on; KDHL-920 Minn. @ 6:30 clear atop frequency w/s/on. 11/9- HCFA2-540 @ 2:30-2:54am w/frequent Tropical IDs; HJJK-660 @ 3:28; HJDP-1020 @ 3:55 w/very strong signals; HIJM-1090 @ 4:40-4:47 when WBAL put carrier on; WEEB-990 @ 5:16pm s/off; WEAS-900 Ga. @ 5:30 s/off; WGOK-900 Ala. @ 6 s/off & WDDT-900 Miss. w/s/off just after WGOK finished; WKWF-1600 Fla. @ 6:15-6:17 w/stock market report & ID. TAs have been quite disappointing so far. These noted: 665 683 701 719 737 782 845 935 1034 1124 1196 1205 1554 1578 1586 & 1602. All W. Europe or N. Africa; maybe things will improve after Mid-Winter anomaly. I will pass along my 73s for now. 30.

**GFORGE KELLEY** - 118 White Street - Belmont, Massachusetts - 02179

DX really hasn't been too swift lately. Seems like the bottom fell out on the night of 10/16; and except for a brief return of good CX around 11/3 things have remained rotten. 10/11- WSME-1220 Me. finally heard @ 5:30pm. It sounds incredible but the problem was WRIB in Providence being on the same loop angle as Sanford. The following stations are all unnn but were logged for the Foreign Contest on 10/11: Spain-773 good @ 7:12pm. Madrid, Spain-584 also good @ 7:20pm. Monaco-1466 quite excellent @ 7:30pm w/Acid rock. Luxembourg-1439 strong @ 7:44pm w/rr, but somewhat difficult to split off from local WAAB-1440. Heusweiler, W. Germany-1421 also good @ 7:48pm, & also a tough split. I hadn't heard him in five years! Prague-1286 noted w/a fair signal @ 8pm. The WSRN-1550 TEST was not heard here. 11/4 brought some good TA CX back for a little while, so the following list of unns were logged for the contest: RBC-1088 strong @ 5:10pm, Lopik, Holland-1007 w/a fair signal & MoR @ 5:20; France-944 good @ 5:26pm. Spain-953 also noted good @ 5:30pm. Then I managed to do something I've done only once before. I actually split home-545 off from Super-local WDDH-050. This historic event took place @ 5:35pm w/me holding the loop at very weird angles. For you people who get off on statistics, here's mine: Total logged= 641 stations, 150 of which are foreign (about 70% TAs), 87 Canadians & the rest are U.S. You can figure that total for yourself. 10/25- WCNW-1560 O. w/an ET @ 3am. I tuned away @ 3:45 & he was still on w/a really good signal.

**KEN LYON** - 8415 Goodrich Road - Clarence Center, New York - 14032

I went to see Dave Long today 11/7, and had a good rab session and looked at veries. DX this week is: 11/2- WPIB-1380 12:01-12:15am w/r/c-TT. 11/6 - WHEG-1360 w/r/c-TT 12:01-12:15 w/QRN from WSAI. CKRB-1450 w/FF @ 5:56pm w/av over everything. One verie this week, KXLW-1320.

REMEMBER, THERE'S NO DX NEWS NEXT WEEK, DUE TO THANKSGIVING IN THE U.S.A. (and NEW ENGLAND). BUT WE'LL BE BACK IN A FORTNIGHT WITH ANOTHER TREMENDOUS ISSUE OF MUSINGS - THAT IS, IF YOU LADS AND LASSES HAVE TAKEN OUR SUGGESTION OF MUSING. THOSE OF YOU WHO STILL HAVEN'T SWUNG OUR WAY, WON'T YOU SEND IN A MUSING N-O-W-?

**JOHN OLDFIELD** - 11623 84th Street - Edmonton 20, Alberta

A great season already! A re-intro. I'm nearing a single 26 (not ounces), & my equipment is at the moment: KT-340 LAF. & old converted Zenith Trans-Oceanic, loop, two longwires & cassette recorder. To revive my ego, I just completed my yearly totals: 25/33 countries, USA 359/746, Canada 138/191 for 564/1,089 total. Canada: 11/12 heard (I need P.E.I.) & Nfld. QSL. Best are: B.C. 45/51; Alta. 36/38, Ont. 14/36, Sask. 22/22, P.Q. 5/17 & Man. 12/15. USA 42/47 heard (I need Me., Vt. & N.H.) & my best states are: Cal. 50/106, Wash. 52/77, Ore. 30/49, Mont. 23/48, Tex. 15/41, Ida. 14/31, Col. 11/27, N.Y. 15/24, Hawaii 13/22, Utah 7/22 & Minn. 9/20. That completes my ego for another year, hi. Don't forget to grab our "Canucks" on 1050 before XEG goes AN again. Calgary's CFAC-960 will soon be 50kw, c/w, NSP again. Congrats to Don Kemey on CBXQ-540. I'll bet Richard Wood has them, too. Our CBC LPRTs fascinate me. My most-wanted LPRT is CBDH-880, clear channel. Veries from CBSY-1490 CBXI-1450 & CBXB-860 (all LPRTs) & ZCO, Tonga. A local CBX-CBC engineer says the CBC is thinking of high power stations in the North along with frequency changes to Canadian clear channels. CFWH to 540, CHAK to 10kw, & CFYK to 690. Also an FF for Vancouver. They sure like to spend my money, hi. Imagine us crying about that pesky CHAK! The CBC budget at present doesn't allow enough \$\$ for even one LPRT. Roy Millar: CFMR-1490 25w. is EE only, & a private station run by the community - non-profit. It never has FF but some Indian local stuff. CBXY-1490 is FF but // -CHFA-680, & s/on @ 8:15. CBXY is the only FF in Canada in the West. 73 from CHEDmonton.

**BOB HOSTETTLER** - Box 15061 - Minneapolis, Minnesota - 55415

Hi everybody. After a rather long absence I've got a Musing for ya. I guess this might also be an appropriate time for a re-intro. I'm nearly 21, a student at the U. of Minn., & have DXed actively since 1966. For those who may want to know, my address is 413 Cedar Ave., #6; phone is 612-338-1324. All DX 's done still in Lake City, Minn, some 60 miles SE. Last DX was 10/24-26, so I'll list that (asterisk means a report was sent). KBIZ-1240\* really blasted in on r/c 10/24 @ 1:15-1:30 & KAKE was noted u/KBIZ & o/CJWA. 10/25- WBAM-740\* s/off heard @ 6:15pm w/Dixie. 10/26- KWHK-1260 local-like 1:02-1:08am SSB s/off; KNWC-1270 was noted w/s/off @ 1:02; KELI-1430\* had @ 1:32 w/really s'k rr format; KING-1490\* @ 2:32 w/"good" mx; KFSC-1220\* had w/ID @ 3:12, testing, easily loopable o/WGAR; XERB-1090\* reported again w/Wolfman Jack @ 3:34; WDLB-1450 sneaked in @ 4:58 w/MoR; WMAN-1400 heard w/SSB s/on @ 5:01; WBCM-1440\* pretty easy @ 5:24; KQAG-970 had s/on announcements @ 5:53 followed by SSB; WLWL-1330 was heard w/s/on @ 5:50 w/KWLL; KNOX-1310 noted @ 6:01 w/SSB s/on; WNRK-1260 was the real shocker @ 6:02 w/SSB s/on, 500w PSA, cutting right through the mess! WKJG-1380 had briefly @ 6:06 w/c/w. I found WPGC in solidly @ 6:24 w/rr; CM reveals not much power this way. WPUV s/on messed them up @ 6:30; WAAY-1550 was atop w/rr @ 6:50; KPUR-1440 was well atop KQRS @ 7:20am w/rr; KWCO-1560 noted of all @ 7:45. Recent veries include WTMB-1460 WJMC-1240 WIBA-1310 KCCR-1240 KIGA-1500 KJR-950 KWAY-1470 CBK-540 KBTA-1340 WRCK-1440 & WPGC-1580. Totals are now about 981/487. I hope to be over 1,000/500 by end of the year. Locally, KQRS-1440 has changed its silent period from MM to Tuesday AMs, 2-7am EST, w/progressive rr all the time, lobes on night pattern are NNE & SSW, w/most power going NNE but maybe some of you will still be able to hear 'em MM. KUOM-770 usually does ET 1-1:30 every Tuesday AM. I guess that's it for now. Peace. 73.

**CRAIG C. KOUKOL** - 1232 North Eagle Street - Naperville, Illinois - 60540

Here's a Muse for DX NEWS. How 'bout that? I'm really enjoying MW DXing. Some recent catches (EST) 10/8- WSGN-610 fair @ 8:05pm w/ID & WX, pops 10/24- WTIK-690 fair 7:58pm w/ID, KXIC-800 1:13pm ID during FB interview. 10/28- KLIF-1190 fair @ 8:42pm w/ID, TX, pops. PJA6-925 in well @ 7:35pm w/Hour of Decision to 8 s/off, 4VEH-1035 good 8:30 w/ID & Haven of Rest. 10/30- KALB-580 11:29 ID & pops, CKCK-620 fair 12:36am w/ID & pops, CFSI-1190 7:36pm local ads. 10/31- KIMO-1060 7:15pm ID & s/off u/KYW. 11/1- CHML-900 7:45 call-in program, WSPA-950 8pm ID & TX, CBS NX. WKAZ-950 8:02 ending NX, fair. WWSW-970 8:10 ID & TX, 11/4- KUPK-1050 6:20pm local & state WX, KGFY-1060 6pm ID & NX, fair. QSLs

from KFI WHAL WTPF Belize-834 NEL PJ02-855 WAAX WISW WIST. Reports out to CMG  
THRU TIPC Y88 4Y8E PJAG WSPA. 73 & good DXing, everyone. (Thanks, Craig! -ERC)

ISAAC EAVES - 10113 Pillot Street - Houston, Texas - 77029

CX & interest have been stimulated by the advent of Fall & the resumed weekly publication of our favorite, DX NEWS. Here's what I've been hearing since last Muse: All times EDT. MM 7/27- KTKT-990 Ariz. weak w/static u/TTer or jammer @ 3:30am. 7/30- WMOO-1550 Ala. s/on @ 7:04 - no SSB. 8/4- WDSU-1280 La. s/on @ 7:30, so not AN any more. WJPR-1330 Miss. w/Chuvaleo-Foreman fight, ID @ 10:35pm, then NX. 8/7- KCAR-1350 Tex. s/on @ 7 w/SSB; KTXJ-1350 Tex. s/on @ 7:01 w/SSB; KPYS-1360 Tex. heard on air four days after Hurricane Celia put them out of business. MM 8/10- WLOP-950 Fla. finally got a clear ID @ 4:30 w/local KPRC off. MM 8/17- WBTS-1480 Ala. s/on @ 3:17 w/SSB announcing an XR test. They played c/w mx loud but not clear & enunciated their call letters very carefully, heard while trying for WKND TEST. 8/21- WBV-1260 Ill. u/KGBX @ 10:13pm w/mx; KVSF-1260 N.M. in weakly & briefly u/KGBX. MM 8/24- KGLC-910 Okla. s/on @ 7 after MM SP. 8/25- WQZK-900 Ala. in @ 7:10am u/thunderstorm QRN. 8/26- WEAS-900 Ga. s/on @ 7, no SSB, giving sked 7am-8:30 s/off. 8/27- WJCW-910 Tenn. w/NX WX & s/off info until 11:08, less than fair. 8/31- WDBO-580 Fla. in w/several others @ 6:40 w/ID. MM 9/7- WOAI-1200 Tex. on @ 3:10 past listed SP. Announcer said he has just received a phone call from Mill Valley, Cal. w/a song request. Nobody we know? 9/28- KXYZ-1320 local on @ 2:16 past sked SP. 9/30- WGAR-1220 O. finally made it in u/hets of local KNUZ-1230 w/5:25 ID. MM 10/5-- XEDD-1560 w/IDs @ 3:07 & 3:09 w/what sounded like band mx in between on the IRCA TEST. HNL too bad to read much. EE ID & info for reports @ 3:11, pretty good for 430 miles, 500w. HNL had loud whine from somewhere, a jammer? (Probably the off-frequency Cuban -ERC) 10/9- KYW-1060 Pa. @ 10:38pm. I couldn't hear WNOE who are usually here. 73

JAY MURLEY - 1733 Candlestick - Newport Beach, California

A rather odd set of circumstances saw me DXing from a car radio in Hilo, Hawaii the other day from 4:20-6am. My 3-year-old tends to get up @ 6 or 6:15 PST regardless of time zones. So I picked a few bananas when he threatened to wake up the rest of the family. I gave him some quiet toys, shoved him in the back seat of a rented '70 Chevy, & did a little dial spinning up front. No TVI or local line noise to contend with, nor was there any problem with spurs or mixing products as there were no locals on, initially, for o/100 miles. Five within 100 miles had s/on by the time I had quit, of course, but they were a surmountable nuisance. Prognosis for directionalized interference-free DXing, the Big Island is unbeatable within the 50 states, but a pair of 13,000' hills do tend to create a few horizon obstacles that can be worked to advantage by going totally portable, so 90 minutes netted signals on 24 frequencies. Best firm logging: Peking's foreign service, the usual two-voicer in Japanese on 1040. Some after-the-fact computations show the over-water second skip coming in at just high enough an angle to readily clear the "saddle" between Mauna Kea & Mauna Loa. Two Pacific Coast mainlanders showed carriers lost to SRS., but the best might have been XETRA as it was clearly fluttering KKUA's surprisingly weak signal. VOA-1178 was second best TP, & only other so IDed. But it was wiped out by KCHO-1170's s/on. I'm still trying to reconstruct three or four barely-readable or carrier situations, but I was quite surprised to see such powerhouses as KFI & KGO totally absent at or before their sunrises!

LARRY GODWIN - 5421 South Clinton Court - Englewood, Colorado - 80110

Greetings from Englewood. DX has been spotty here with a couple of TA openings that brought Lisbon on 665 & 755, also Dakar-764. Others have been having better luck! I just ordered a copy of the NRC Log and am looking forward to receiving it. San Francisco is my favorite city and Barbara & I would like to make it out for the Convention next year. Keep up the good work, ERNIE!

DON'T FORGET OUR THURSDAY DEADLINES, and 30 LINE LIMIT. PLEASE DOUBLE-SPACE YOUR MESSAGES and YOUR VERIE SIGNERS WHEN YOU SEND THEM IN.

ROBERT E. FISCHER - 1509 Whedbee - Fort Collins, Colorado - 80521

Well, well, I've been in the NRC (a really first class organization!) for a year and haven't Mused, so I guess I'll get a nickel's worth in. I'm 27 years old, single, and on the verge of ending 4½ years in the graduate school rat-race. In Mid-January I'll take on new duties as a meteorologist with the U.S. Weather Service, somewhere on the EC probably. The last 4½ years have been skimpy, both on funds and on DX. Graduate assistantship salaries are insufficient to buy a good RX on. I will get a new HQ-180A after relocating is done, & hopefully I'll get better DX than I have for the last few years. Fight now I'm getting along with an RCA AM/FM table radio. It's good as table radios go but otherwise very bad for DX (selectivity - ugh! Sensitivity - often dead spots on the dials!) Some of my best catches have been WLCY-1380 WDXG-1130 CKRP-1380 C-1400 KXTV-1400 CKSA-1400 WUBS-710 (usually crushed by heavy competition if u/ KBYR, a local pest, & WHB), CHML-900 CJDV-910 CPOC-600 XEWA-540 KNOE-540 CKIM-730 WBY-810 CBY-710. I have heard a number of SSES on a few of the U.S. clears, some too weak to ID. I had an interesting signal 11/3 between 10:02 and 10:06pm MST on 700k u/WLW - c1 mx by Bach, probably. \*Signal lasted only a few minutes, then faded out before getting chance to ID. Could this possibly be R. Andorra on 701? WRTH lists it here w/280kw. If so, it's a new long distance reception from here. I've never heard any TAs or TPs here - not even Hawaii or Alaska! WSM too strong here to hear the 650 Alaskan. I got the new NRC Log (replace ment copy) about 2-3 weeks ago - the NRC sure did a heckuva good job. The first one, sent by fourth class must have looked so attractive to the postman that he kept it for himself. I hope to Muse more often, especially after the new year & my HQ-180 arrive, & when I'm gone from 1970's version of the Egyptian pyramid building days at Colorado State University's atmospheric science department. I'd like to hear from HQ-180 owners to how they like their sets. Are TAs possible without mechanical filters on EC? (Certainly, Robert, but Andorra u/WLW is virtually impossible - how about HCJB, Quito, Ecuador? -ERC) \*SEE PAGE 15

BLAKE LAWRENCE - Box 803 - Canon City, Colorado - 81212

11/7. Buenos dias! Some pretty fair catches since last Musing. 10/30- KIKK-650 Tex., KSEO-750 Okla. both logged @ s/off u/their clear-channel competitors. 11/1- WAIT-820 Ill. s/off. MM 11/2- WSMB-1350 Ia., CKOM-1250 Sask. KBOX-1480 Tex., KLAV-1230 Nev., all AN. CKOM is not listed AN in NRC Log, please note: 11/2- CKY-580 Man. w/pop mx @ 7:08pm. 11/4- My first FF materialized as CKSB-1050 Man. DX of lesser interest uncludes semi-locals KVFC-740 & KKCP-1470 Colo., KCRS-550 Tex., KMNS-620 Ia., XEJFV-1560 Ca. Juarez, & KALV-1430 Okla. Details of most of these should appear in DDXD. (And Musings -ERC) Also, a bunch of unIDs- 10/31, 850, c1 mx u/KOA from 7:08-7:15pm s/off w/a background of "Jesu, Joy of Man's Desiring" - yucch. Could this be KFUD? (Almost certainly -ERC) MM 11/2- UC on 1380 @ 4:30, before & after, too; 1220 ET w/c/w from 4:20 on; 1230 Cal. NX, then national NX @ 5:02am, I thought I caught KWTC but not sure. Please help w/above. I will try for CJIB-940 - I hope they'll go MM, they could probably kill KHOS w/10kw. If they take 11/8, 10kw will do nothing against KIXZ. KLIR-990 Denver is now KFKS, format still religion. Does the NRC have a list of station formats? If not, it would be nice to have some info on a certain percentage of stations, like AAs, etc. I couldn't help but laugh at what ERC called WABC's AXR in his letter to them. Touche! (You should hear the thing -ERC) Thanks, RJE, for telling us new members about DXDD. It'd be nice if some of the other editors would do that (hint, hint). Remember- write for SCs or just to correspond. What is KIQX-720's target date? Will they use 50kw nights, or 10kw nights as the '69 WRTH says? Adios, 73, & peace. (I agree on the format suggestion, Blake! -ERC)

LARRY E. BLACK - 4917 Malibu - Bloomfield Hills, Michigan - 48013

I've failed to Muse for the last three issues, so I'd better get back in the swing of things. Going back a while, WUBE-1230 O. sent a letter telling me that normally an ID promo & WX report would be good enough, but the CE just couldn't verie this one - well, that's the way it goes. 9/16- WWRN-620 W.Va. was about even w/WIMJ but readable enough for a report. Also, WNOX in on the SSS. They come in here most evenings. 9/18- KFYR-550 N.D. was very strong w/little QRN. No verie yet. 9/19- KFI showed up o/CMG - first California station logged

from here. 9/21- KSO-1460 Ia. in after WPCN s/off. Usually, WBNS, O., is there but not this time. Three tests came in, WCBC-1590 Pa., WDIC-1430 Va., & WILL-930 Va. I don't have the times with me, but they are listed correctly in the 930 Va. I don't have the times with me, but they are listed correctly in the WRC f/c log. 9/28a WVA off & KVOO Okla. came through w/talk show. 9/29- WFBG-1290 Pa. in o/WHIO & other 1290 QRM. They have a WLS/WBAP-size verie. 10/5- KIMN-950 Colo. very weak w/talk show, WWJ off @ 2 on MMs. WGST-920 Ga. strong. KNX-1070 Cal. w/severe WIBC. I'm still looking for EBA. WVOJ-1320 Fla. Was WJAS on? On 1330, WEVD N.Y., a share-time station in pretty well. 560 has proved to be a good frequency here. WBQ Tenn. WAS THE SIXTH STATION on 560. 10/7- WFLI-1070 Tenn. test o/CEOK at listed time. 10/9- WKCY-1300 Va. They a 500w station received during the day w/WKNR next door on 1310. 10/10- Another good daytime catch, WGRP-940 Pa. w/severe WWJ slopover. 10/11- WNB-1290 N.Y. in most of evening, but WKNE N.H. came in for a couple of mknutes for a new state. 10/12- WOKJ-1550 Miss. w/CBE off. WCOL-1230 O. cut through the graveyard garble. WISE-1310 N.C. in w/WKNR off. WIFE Ind. gave a little trouble I can't fit it all in, so I'll wait for next time. 73.

JOHN W. HOOGERHEIDE - 3 Marquette Drive - Marquette, Michigan - 49855  
 Good MW CX continue to prevail. On AM of 10/28- new log in KEYL Long Prairie Minn in/out w/WMIN-1400 @ 9am. Also new log was KWAY-1470 with new calls (ex-KWV) @ 9:15am. CX prevailed until almost 10:15am with Minn. S.D. N.D. dominating most frequencies. Dial opened up by 4:30pm w/WSAN-1470 being the indicator with loud signals. I noted new WCOJ-1420 Coatesville nicely atop @ 4:45pm & also new log in WVOK-1270 Cumberland Md. way o/WXYZ @ 5. Twilight DX on 10/29 brought KLTR-1580 @ 7pm s/off, KOIS-1570 w/SSB @ 6:45 & a new log in KTAT-1570 @ 7pm s/off u/CHLO; KPIK-1580 again booming in until their 7:15pm s/off. Great CX again on 10/30. WOKZ-1570 s/off 6:30pm followed a minute later by what sounded like WTRB-1570 Ripley Tenn. I don't have an SS Log but gave power as 5,000w & call sounded like WTRB. (WTRB is all EE -ERC) At 6:45 on 1570 KOIS s/off first w/SSB @ 6:43, then KNDY w/a man singing a hymn "Peace". Finally an SSB behind this & afterwards s/off of umn KVRA, Vermillion. Then on an SS who was XERF, an FF CKIM, & an EE CFOR. With a program called "Coaches Corner" interviewing FB coaches, KWCO-1560 Chickasha was in/out w/WDXR @ 6:45-6:55pm. KLTR-1580 again s/off SSB @ 6:59 & after that was completed, s/off of KAMI, Cozad was noted. Then a loud KPIK in/out w/CBJ in FF. Last night only rarely heard KLOU was in/out w/KPIK. I keep trying for those evasive Texans on 1570/1580 but they can't seem to make it in. I wonder if other MWers are having more luck at SS than I am. 10/31- I had WFRL-1570 Freeport for new log @ 8:15; WIVS-850 Crystal Lake w/Woodstock-Crystal Lake FB @ 4:30pm & a surprise in KTUI-1560 Sullivan Mo. for new log atop @ 5:30pm. Good Ca towards Mo. & Kans. sports @ 6:40; WJAL-1150 way atop; NJCA-1420 s/off-America 6:45; NUN-1270 st. Joseph w/political advent @ 6:40; ABIN-1420 Neosho Mo. s/off a minute after NJCA. NJIT-970 s/off 7pm 2/religious Beyond the sunset. Funny I heard this a few days earlier w/SSB s/off - unless the SS was someone else.

JERRY A. CONRAD - Box 952 - Haines City, Florida - 33844  
 The biggest news here is the beverage. I put up 1,000' of wire a couple of weeks ago & the results are incredible. I have heard three Hawaiians, KORL KLEI-1130 & KUMU-1500 the last two being audible almost every morning. Some of the other recent loggings working backwards in time: KHOS-940 Tucson 4:30am 11/2 u/WINZ OC, KRKO-1380 Everett, Wash. 4am, KOOL-960 Phoenix @ 3, KPFE-940 Fresno 2:40am, KIZ-560 Denver 2:25am plus a bunch of graveyarders: KAYC-1450 Beaumont 2:10, KUNO-1400 Corpus Christi till 2:05 all SS, w/ranchero; WQWL-1240 Florence, Ala. 12:55, KSOX-1240 Raymondville, Tex. 12:20, KANE-1240 New Iberia, La. 12:15, WSRA-1490 Milton, Fla. 12:05, & KJIN-1490 Houma, La. @ 12, all 11/2. I might also add I would say 80% of it is due to the beverage. I have also heard CKWX CJVI from B.C., KMND-1510 Mesa Ariz. on SSS & on & on. All of these the way I have taped IDs to back them up. I got a verie from KGYN for a taped report. The CE said mine was the farthest E report. The next being from Ohio (Jerry Starr?) Then last MM 11/2 @ 4:45am came the biggest thrill of my DX'ing. 4QD-1550 Emerald, Queensland, Australia w/an incredible signal. I have set

taped report of that one too. XETRA has been heard here several times lately. You should hear them ID in SS & then go directly into a U.S. Navy Nurse PSA, wow! I have entered Stew Drake's Domestic Contest. I am using a longwire & no mechanical filters. My point totals are approaching 1,500 already, so some of you guys had better get started. 73.

JESAR OBJIO - Calle Benigno F. Rojas 46 - Apt. 5 - Santo Domingo, Dominican  
 Even though it is a little late I wish to say that I really enjoyed this Convention held in Hasbrouck Heights, it is a great pleasure to meet so many friends sharing this wonderful hobby, something not found down here. My special thanks to Ernie Cooper for his most kind help and sacrifice in getting me on time to the airport on Mon. 9/7. I still owe him a R. Santa Maria verification, but be sure Ernie, that I will get it for you. Also glad to have Gordon, Robie, Wood, Jerry Conrad & Starr, Russ, tc., some others I have met before in Boston, as well as some new ones met for the first time. San Francisco is too far for next year, let's hope that in 1972 Convention will be held in Florida so that I might attend. The DXpedition was much better than in 1968 in Boston as I did not have to climb mountains, but Ed Krejny was on hand, just in case. At least I heard one Dominican station: La Voz de las Fuerzas Armadas in this DXpedition. An article is ready about this station which will be published shortly in DX NEWS; haven't mailed it as they are getting studios ready after a moving and will give me some pictures. I hope they can be printed in DX NEWS. As I could be of use identifying a tape in the Convention, I wish to tell everybody that I am willing to hear any tapes of SS unID stations, just send me the tape. I will hear it and return it to anybody, I will do my best to help anybody. No return postage is needed, but please don't send tapes in spools, wind them up around themselves, this way bulk will be smaller and be less heavy. Just received issue #2 of Volume 38 & I read John H. Shannon Musing, I think you are wrong, dear friend, but La Voz de las Fuerzas Armadas' call letters are HIFA, not HLJA (this means 'daughter' in Spanish, hi) as you say, you can be sure, as they gave me samples of QSLs being sent out for correct reports and it is efe, not jota. I was surprised to receive issue #4 dated 10/31 on 10/27, how is it possible to receive it before the publishing date? (That's easy, Cesar - The Admiral is a genius! -ERC) Well, I think I have written too much, but have been silent for a while. I will try to Muse sooner next time, see you, friends, & keep NRC the best!

SCOTT BROCKWAY - 112 North Crescent Drive - Rome, New York - 13440  
 The arrival of a new RX here on 10/30 was welcomed enthusiastically as a birthday present as I join the voting-age citizens at 18. The RX is a Zenith Trans-Oceanic R-7000-I w/AM/FM/SW/VHF WX, & LW FAA WX bands. The thing is a great improvement over the Hallicrafters S-214 which looks sick in comparison. I have been logging locals, or that is, stations in N.Y.State, that I didn't hear on the Hallicrafters with alarming regularity to my finances. The price for stamps is nearly breaking me, hi. But, to stations verified: WBBC-1480 WJAM-1180 SAI-1360 WINS-1010 v/cs, WMAQ-670 w/v/c & until otherwise noted, WBZ-1030 WENR-430 WBN-930 WOKO-1460 CHNS-960 CFOR-1570 WADO-1280 WTSN-1270 & WNNY-790 v/cs. Not v/q? -ERC) Vls in ans: WRUN-1150 WNEW-1130 WTLB-1310 WAVZ-1300 WEVD-1330 SAR-1480 WPAR-790 WDOS-730 & WIZR-930. A v/c I left out is WSPR-1270. New stations heard are: WADR-1480 w/c/w, WMCR-1600 w/a school FB game, WBVM-1550 WPAW-1540 WOLF-1490 WEEL-1310 WKRT-920 WHHH-1440 WMCA-570 WGR-550 w/pop mx, WHK-1420 CKL-560 WRKO-680 & KFABO1110 w/ER & NX. They were fighting WBT strongly & at times were smothering WBT, second Neb. station in here. Also in is XEQ-940 with lots of SS mx & full IDs as the call letters & location in SS about every 20 minutes or so. This is the first time this guy has been heard here at such a loud level as he was on 11/1 just about dominating the frequency w/little or no QRM. A note to people who can understand FF - there is a new DX Club being formed in Canada. The Club des DXers du Quebec w/a monthly bulletin in FF & EE. They're looking for MW experts - any nominations? Further info can be obtained by writing the club at "Casier postal 34, Sillery, Quebec 6, P.Q., Canada. That's it for now. 73

THE OUTSTANDING AURORAL  
EVENT OF NOVEMBER 6 - 9

\*G. P. Nelson

During the past decade or so there has been a conspicuous tendency for both TA and TP reception conditions to show a distinct peaking in late October and early November; no doubt this has always been the case but it's only been fairly recently that we've had enough consistent reporting to IDXD to make the pattern show. In our previous articles on auroral/geomagnetic disturbances and the Midwinter Anomaly we have suggested a possible explanation and have provided evidence to show why this should be the case in terms of MW signal absorption due to seasonal effects and the Midwinter Anomaly.

While there has been a very definite improvement in TA conditions observed here since the beginning of September, the usual slow and dramatic buildup of TA signal quality through October and early November observed in past years by EC DXers was badly marred this year by a number of rather severe auroral precipitation events. October's expected TA and TP bonanza was pretty well neutralized by the residual absorption from the precipitation events of October 4, 12, 18, and 23; just about the time the absorption had declined far enough to let the moderately-high latitude TA's and TP's through, yet another disturbance hit and it was back to Latin America once again! But the persistent international DX'er had at least a small taste of the "good old days" during the period from October 24th through November 6th this year - hets every 9 kHz, two or three TA carriers on every channel, and (shades of 1963!) one night when Cairo-773 was actually stronger than WABC here in Massachusetts.

Every night the TA's were experiencing less and less residual absorption due to the quickly shortening daylight hours over the North Atlantic; the time of dawn-induced fadeout was advancing noticeably each week, and the last traces of residual absorption from October 23rd's dumping event were dying away... Ramadan was due to begin November 1st this year and every night the TA's were getting better... Quite a few of us here on the East Coast were experiencing relatively excellent TA reception during this period and had high hopes to snag some of the elusive Arabs running AN during Ramadan (definition: Ramadan - sacred Moslem month of fasting and worship with most Arab BCB stations operating NSP, carefully timed to begin at least a week after the Midwinter Anomaly makes its first appearance...).

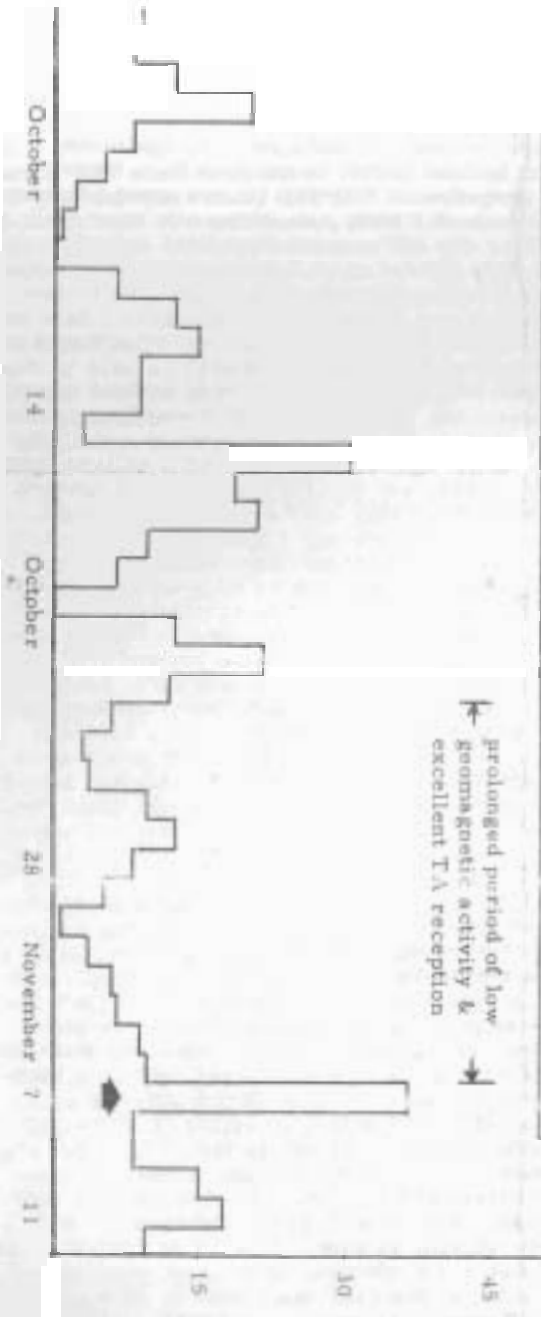
Ramadan began and for once TA conditions had not yet deteriorated; the Egyptians, North Africans, and Syrians were actually producing audio after the Europeans signed off around 0100 GMT. Beirut-836, Malta-1546, Cairo-773 and 818, Libya-1124 and 674 - there they all were on the night of November 1st. As the last few free electrons from the last auroral event finally became neutralized (through mechanisms unknown) over the North Atlantic, even the lower powered Arabs began to put in an appearance - Sudan on 764, Libya on 1454, etc. But every day we were checking the geomagnetic

INTERNATIONAL DX Digest



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

This graph shows the daily volume of  $A_{\text{gy}}$ , the Fredericshof index of geomagnetic/auroral disturbance in the Earth's magnetic field. High values of  $A_{\text{gy}}$  occur during a "sawtooth" of electrically charged particles into the upper atmosphere as the result of certain types of solar disturbances. The medium-wave signal absorption produced by one of these events is accompanied by high latitude TA and TP signal absorption along the high-latitude TA and TP signal paths. Very high values (above about 30) are usually accompanied by E-layer blanketing over North America and Europe; on such a night stations from the South will appear to demonstrate most channels. Long periods of low geomagnetic/auroral activity are necessary but not sufficient to guarantee excellent high latitude TA and TP reception - other ionospheric effects such as the "Midwinter Anomaly" may effectively mask what would otherwise be periods of excellent reception on high latitude paths during periods of continued low geomagnetic/auroral activity.



values for the inevitable auroral storm which would eventually kill this particular TA run - and every night we were watching for the more subtle but equally significant progressive deterioration of signal strength due to the onset of the Anomaly with our newly-installed automatic recording equipment (to be described in future issues of DX NEWS).

Examination of the graph of  $A_{FR}$  index of auroral activity on a previous page will show that the period from October 24th through November 6th was the longest period of prolonged quiet in many months; this, combined with the shortened daylight hours in far Northern latitudes, was responsible for the steady improvement in TA conditions during this period.

The stage was then set for the same situation we experienced in late March of 1969 - a long period of geomagnetic quiet and excellent TA reception, spectacularly interrupted by a major auroral event.

Here in the Boston area, we were experiencing the best TA reception in several years. The Syrian on 782 began to provide readable audio and fine records after the signoff of CSB9 at 0100 GMT on November 3rd; by the 5th the Syrian was about equal with CSB9 at the latter's s/off. By then we were fishing for the "most wanted Arabs" - Turkey on 926, Sudan on 764, etc., by night, and watching the daily  $A_{FR}$  values on the ESSA teletype with increasing trepidation by day. By November 5th we'd had 12 straight days of very low geomagnetic activity - run-of-the-mill in 1963-64 but a very long run for the last few years. Disaster was obviously due - but when?

At 2100 on November 4th, ESSA reported only the slightest visible activity on the face of the Sun and predicted "no significant solar or geophysical events". Seven hours later the permanent solar telescopic watch reported relatively minor but still significant solar activity in a supposedly quiet region of the Sun. It's rather unusual for a very quiet region on the Sun to suddenly become hyperactive and the ESSA sun-watchers were caught quite off-guard. While ESSA was owning up to having been caught off-guard ("unimpressive and incapable of producing the major flares seen in the past 6 hours"), yet another totally unexpected solar flare began - at 0312 GMT on November 5th, to be exact. The light from this major solar upset reached earth-bound telescopes in just a few minutes and provided the first indication that a major ionospheric disruption was likely due in the near future. Shortly thereafter radio-telescopes began to hear the radio noise characteristic of violent activity on the face of the Sun - and the first alerts for possible major ionospheric effects were issued.

Less than 10 hours later, the satellites Pioneer VI and VIII began to radio back from their locations between here and the Sun that the first part of the shockwave of high-energy protons blasted from the surface of the Sun had reached them. Based on this robot spacecraft data, ESSA began to predict a major auroral/geomagnetic disturbance by 0300 on November 7th.

The first particles from the Sun to reach the Explorers were protons with extremely high energies and speeds close to that of light. These particles hit the Earth's magnetic field soon after the primary flare event and, because of their heavy mass, were guided by the Earth's magnetic field to fall into the ionosphere very far to the North - inside the polar cap region whose southern edge is the MW auroral zone. While these high-energy protons made chaos out of transpolar SW reception, little effect was noticed on our Transatlantic MW paths because these signal paths do not pass far enough North to experience the full effects of one of these Polar Cap Absorption events (PCA's) caused by high energy protons.

Although the first of these very high latitude protons reached the vicinity of the Earth about 0700 GMT on November 5th (as detected by the ATS-1 satellite at 22,500 miles), the MW effects were not to come for more than a day. While the ATS-1 was reporting a polar proton flux of more than 500 particles per second per square centimeter on the evening of November 6th, TA signal paths were still open - so much so, in fact, that we were experiencing the strongest reception from Syria on 782 and 746 in several years at 0230 on November 6th... TA paths remained open that night until at least 0700 GMT; our continuous recording of RNE-Barcelona's signal strength on 737 showed pretty much a normal fadeout pattern that night, although it could well be that the signal strength was beginning to fall off around 0630.

Sometime after 0700 on November 6th and 0000 the next day, electrons began to fall from the radiation belts into the ionosphere in the auroral region over the North Atlantic. During the time between the arrival of the first super-energetic protons inside the polar cap area and about 2200 on the 6th, TA's remained good because the much slower shockwave of solar energy from the original flare had not yet "dumped" auroral electrons into the ionosphere. About 44 hours following the original flare the rain of auroral electrons into the ionosphere had become so heavy that the Earth's magnetic field began to be disturbed by the resulting current flow; by November 7th the Fredericksburg A index of geomagnetic/auroral activity had jumped to 37. Thus between 0700 on November 6th and midnight of the 7th TA conditions shifted from excellent to hopeless (no TA carriers were detectable on the 7th) due to the absorption produced by the falling auroral electrons over the North Atlantic. Domestic DX'ers will no doubt have noticed a dramatic shift of conditions to "auroral" between the 6th and 7th; by the seventh we were experiencing classic auroral conditions here in New England.

Several days later there has been no new primary solar activity and TA's have begun to slowly reappear as the residual absorption in high latitude areas began to die away. Barring new activity from the sun, or the sudden appearance of the Midwinter Anomaly, TA conditions should not return to pre-disturbance levels for at least 10 days...

All times are in GMT in IDX. Deadlines Wednesday box arrival. No issue next wk. Receptions:

- 650 Hawaii. KORL w/best sig so far this year with ID 0800 & into nx 11/2. Has same MoR format as last year. (Garber, Neb.)
- 655 Ecuador. R. Carrousel, Guayaquil hrd for first time 11/1 from 0620 on w/ID after every record, pop mx, very good signal. According to IDX info 7/4. Could not tape due to recorder's bias oscillator harmonic. (Objio, D.R.)
- 675 Costa Rica. Sonora Musical, San José, IDing only as "musical" at 0645 on 11/1, first time hrd, orchestral mx only. (Objio)
- 701 Andorra. Very powerful to s/off 0000 on 11/3. (DX Incorp., Watertown, Ma.)
- 725 Costa Rica. TILX IDed as R. Columbia at 2355 while trying for SRS. (Eaves)
- \* 750 Venezuela. R. Caracas hrd IDing 0725 11/1, either AN or extended sked, don't know which. (Objio) (Jerry Conrad, ur unID 11/14 IDX? -ed.)
- 764 Senegal. Weak audio 0615 11/2, could not tell lang. Only TA hrd here in weeks. Hrd with talk, don't know if French or vernac. (Garber, Neb)
- 770 Venezuela. R. Nacional, YVKK, Valencia, hrd IDing as "R. Nac., frecuencia moderna" at 0230 10/31. (Objio) (Nelson, Mass, below →)
- 773 Egypt. Cairo = strength to RNE 2303 11/3, combined sig better than WABC.
- 782 Portugal. Man giving news in Port. 2300 11/3 with best signal this year. Proton flare hit 11/6 and 7, killing what could have been very good cx.
- 782 Syria. On for Ramadan, Arabic peaked 0240 11/5, strongest signal in 3 years. Was // 746 at the same time but 746 not so strong, and was mixed with QRM. (both 782 items de Nelson, Mass.)
- 844 G and E Is. Tarawa hrd with fair signals 10/26 and 11/2 0730-0830 in lang and in Eng, male & fem annrs. This stn seems to be on the low side of 844. Will hve to rpt, since didn't do so last year. (Garber, Neb.)
- 1040 Situation here is: a Cuban, looping far Easterly, probably in Ote. and Tropical in Colombia are both right on 1040. Radio Caribe, Isla de Juventud, Cuba is on 1041. And, HOJ2, Panama is still on 1045. (Conrad, Fla.)
- 1075 C.R. TIFC w/Revival Time and Eng ID 0205. (Eaves, Texas)
- 1080 Cuba. CMBN, Isla de Juventud s-4 with much static 0441 7/27. Tropical mx, then "Estrellita" and more mx. Not 1078 on my rx. (Eaves, Tx)
- \* 1120 Dom. Rep. R. Antillas, HICN Sto. Dgo, found to be drifting from their usual freq, about 1120.7 and separable from Radio Mia, Valencia on 1120. Anybody with good measuring equipment like to measure it? (Objio, DR)
- 1130 Mexico. XEFN was in for 10 minutes with singing IDs 1125 8/29. (Eaves)
- 1150 Venezuela. Ondas del Caribe, YVMV, Punto Fijo hrd IDing after every record as "Canal Ciento Quince" (channel 115) but IDed at 0201 as "Ondas del Caribe", hrd 10/29. (Objio)
- 1160 Colombia. Emisora HJCK, el Mundo en Bogotá s/off with NA at 0500 and anncd would s/on at 1205, hrd 10/31. (Objio)
- 1170 Colombia. Emisora Villa de Céspedes, HJJE, Tuluá hrd for first time 10/31 IDing at 0459 with pop mx and ads. (Objio)
- \* 1180 Venezuela. Radio Petrolera, Ciudad Ojeda, Estado Zulia YVMB; this is a change of name from La Voz de Zulia and moved from Maracaibo to Ciudad Ojeda. Reported by José M. Rangel, Colombia, via Objio.
- 1190 Colombia. La Voz de la Costa, HJCT s/off 0500 with N.A. on 10/31. (Objio)
- \* 1330 Venezuela. Radio Rubio, Rubio, Estado Tachira, new stn on the air. (José Rangel via Objio)
- 1370 Mexico. XEA in with a couple of call letter IDs 0200 9/25. fair. (Eaves)
- 1470 Colombia. Emisora Valles Unidos, Ubaté, Cundinamarca. New stn on the air. (Rangel, Colombia, via Objio)
- 1480 Mexico. XEPR with fine signal and clear ID 0151 10/10. (Eaves, Tx)
- 1490 Colombia. La Voz del Progreso, HJTL, Cúcuta, 1 kw. Luis Eduardo Mantilla Sarmiguel, Gerente. Addr: Calle 5 No 0-42. (Rangel, via Objio)

- 1500 unID. Stn hrd IDing as Radio Disco, Sistema Colibrí, at 0543, nothing else hrd as it faded very fast, no time even for DF. 10/31. (Objio)
- 1500 Mexico. XERH now uses name Radio Tricolor, has exclusive rancho format, delete former "mi estación", "Radio Comerciales" etc. (Wood) (in Ia.) XERH in very well with "la erray-hache, Radio Tricolor" IDs after every record, all rancho and nice to listen to, atop channel, a 1 Hz from Detroit station behind, at 0730 11/10 (Foxworth, NY) SAH
- 1550 Australia. 4QD hrd with nx 0855-0900 11/2 then into time pips folo by distinctive ABC theme (which sounds like opera) immediately after pips. A few minutes later hrd "This news comes to you from the ABC, then had racing results. Best peaks occurred at 0922 and 0931 with a very readable s-6 signal and cl mx. CBE put on OC 0934 wiping out 4QD. Only other QRM was from a very weak TTer and another stn with cl mx looping NW-SE. I must have spent 200 hours on this channel trying for this stn and it was really a thrill to hear it. Sending tape report. (Garber, Neb.) (Jerry had 'em too; I didn't include date in his rpt last week but think it was also 11/2; interesting to compare his reception with yours. -ed.)
- 1554 France. Nice has company, a 6 Hz SAH 0440 11/2 and 0.7 Hz SAH at 0552.
- 1574 Costa Rica. Palmares is here. (Schatz, Fla., this and 1554)

## Verifications

- 830 Dom. Rep. HLJB extremely friendly but somewhat inspecific, altho quite acceptable verie for taped reception of 3/2/70. Tape was given to Cesar at convention and he took it to the stn. V/s is Pedro Gil Iturbides, Director. Addr: Apto 416, Sto. Domingo. Muchas Gracias, Cesar! (Edmunds)
- 834 Brit. Honduras. Radio Belize sent large map card indicating date only, in 40 days, sent one IRC. (Koukol, Ill.)
- 855 Neth. Antilles. PJC2, Radio Curaçao sent nice QSL card indicating date, time and freq, and stating that details were correct, in 8 days airmail. V/s is QSL secretary (unreadable). Sent 1 IRC. (Koukol)

Another nice section. I hope we can keep it up, even with what Gordon says will likely be a bad midwinter anomaly this year. Steve Bohac, of Fairview, NJ very kindly sawed a loop base for me, out of heavy plywood, as he has access to a big saw which I don't. So I can now rotate my loop, and DF all the various noise sources around here. Wild.. Steve is also looking for a LW rcvr, of the RBL class, tuning 15 - 600 kHz. Anyone have any leads on one? They are "out of stock" around here these days. See you in 2 weeks. 73 Ed

\*Note to Bob Fischer - definitely not Andorra; I taped them with a program of Liszt piano pieces 1823-1850 that night (EST); then man in SS and clear s/off at 1900. 701 was then clear. GPN



All receptions are from Korat (Nakhon Ratchasima), Thailand using a HQ160 and loop. Times, as standard in IIRK, are in GMT. This is a continuing series.

560 So. Vietnam. The 50 kw AFVN station at Pleiku is no more. The tower was toppled in war action, and only 1 kw is now being fed into a longwire antenna. This happened some months ago, per an AFVN engineer.

580 Laos. Altho a Thai stn appears in some lists, all I hear is a stn in Vientiane, noted 1230 10/4 with ID and sousse march. Not in any list, I think.

602 Cyprus. Cyprus B/C Corp. 9/17 at 2025 with soul mx & bilingual annts, in Eng and what seemed more like Arabic than Turkish or Greek. ID in Eng 2031.

640 Ceylon. This country finally logged at last, I believe, with the new 50kw stn at Maho. 8/25 at 1650 with nat'l mx, at 1700 a 6-pip TS and mx in lang - Sinhalese? Sang anthem at 1705 and tone test at 1707.

664 Reunion. Amst on SW outlet says this is the freq, instead of 665.

735 Macau. Singing commercials in Chinese 1550 8/30 and mx until off at 1503 w/out recognizable ID; was not Portuguese anthem. Cleared freq for North Korea. Macau is only 901 miles from here.

738 Thailand. The stn here, cfmg last rpt, is Raksa Dindaen, of the Dept of Territorial Defence, (Border Patrol) Bangkok.

760 Iraq. Nice reception from Palestinian Guerrilla pgm. 9/17 at 1533 had march mx interspersed with inflammatory pronouncements in Arabic about Jordan. QRM from China and others after 2000.

764 Sudan? Bits of Arabic-sounding talk underneath USSR with classics at 1954 9/17. Looks like Dakar the only other possibility and Ondurman much more likely from here. If so, a new country.

773 Egypt. This is a regular but was better than usual 9/17 at 2017 with moderate music and talk.

776.5 Iran. Zahedan also a regular; light Arab-type mx at 2018 9/17.

790 Nepal. Kathmandu 1638 9/13 with music and annts, India-style; off at 1650 without a recognizable ID, but what else could it be?

809 Abu Dhabi. Mideast mx 8/30 1851; 1902 a bit of rock mx and ID in Arabic and then back to mideast mx. New country.

843 Thailand. You'd almost think it was untended, automated, relay of SWKSHPT mx from Bangkok 10/22 at 0005 featured a heavy mix of SWKSHPT and Thai TV radio (English) audio - exactly as was the case on 6070 kHz, which was obviously the feedsource.

870 Thailand. Evidently 2 Thai stns here, a het apart. One presumably in Ban Tak and the other in Bangkok area as monitored 10/18 at 0730 with Sunday only English pgm of Thai TV Radio, parallel to 6095 SW. Had pgm for Thai Int'l Airways, sked "2:05 - 2:55"; 0750 into Thai march w/out ID & off.

898.5 Iran? Man and woman talking, music 10/27 at 1820; evidently Teheran as nothing hrd on nominal 895.

907 Thailand. A stn now hrd on this freq, 1328 11/6 with ID and ad, may have sent Takh Li as loc'n; looped E-W.

912 Thailand. Newspaper item says Central Security Command has opened a new 10 kw station in Bang Nak, Narathiwat Province; pgms in central and southern Thai and in 'Kwangsai' Chinese; is sked 2300-0600 (GMT) and 1000-1500. Tuned at 1300 11/6 but not hrd until 1308 with SWKSHPT mx relay, 1322 tone cue, ID and talk about Changwat (province) Narathiwat. The Cent. Sec. Command also runs the 843 stn in the NorthEast.

955 Cambodia. Rdfn Est'l Khmere, Bokor relay, 8/24 at 1255, Cambodian mx, QRM from Bngoon, Burma; partially loopable. They were / 917 with ID at 1315.

980 Thailand. SWKSHPT, Yala, o/u Chinese at 1159 10/5 and suffering from my local-975 splash. This is supposed to be a 50 kw stn supplied thru aid from Australia. Another 50 kw stn appeared in official lists, at Phitsanulok on 1030. I cannot hear it, but it may come on eventually. (see next item)

1030 Thailand. New 50 kw'er now has been activated by SWKSHPT for Changwat Phitsanulok.

(continued)

1030 (cont'd) Phitsanulok first noted 11/4 at 0005 with news relay past 0030, at 0058 a time melody, more relay at 0100 without a local ID. Noted 11/6 at 1240 with Eng lang lessons, China looped out, also a low het. Ended at 1245 and gave ID. Made a 6 Hz SAH with China.

1030 Pakistan (West) ? As per ARC reporters, a new Pakistani also on this freq; noted 1505 11/6 with YL giving mx in Eng, as asked for Nat'l Svce, China looped but dominant; also a het on high side. (Could this be new AIR Bhuj? Hong Kong. Commercial Radio, allnight 9/13 at 1859 with soft mx, cigaret ad, ID, local annts of school closings, etc., news, 1906 more mx.

1100 Pakistan West. The first logging on my new loop antenna, 8/23 at 1716 w/ news in lang, Radio Pakistan ID, believe Islamabad. Anthem and off 1720. Looped what I think was Korea. Current references show no Pakistanis in city or freq but a megawatt xtrr was projected for Islamabad, and this may be it.

1165 Pakistan, East. Dacca I is here ex-1170. Hrd 8/30 at 1657 with vocal mx, splash from Thai-1160. IS at 1659 and amst, ID'ed as Dacca at 1700.

1212 Yemen. Arabic talk and mx 1930 10/9 parallelable at times with SW 4938 and was still in after 2005. A new freq; a new country.

1220 So. Vietnam. A new stn being hrd, loc'n unk'n. First noted 10/28 at 2280 with Viet talk & mx. Looped toward So.Viet, not North. Pgm matches, too. Also hrd 11/6 at 1430 w/Viet talk & mx; China looped.

1320 India. Calcutta C hrd 8/30 1735 with sitar mx, amst 1740, NA and off. Is sked to be on this late Saturdays only but evidently now Sundays, too. Back on with tone test 1742. Also logged 8/28 with Pepercotent and other ads in lang, 'doorbells' and national mx.

1325 Cambodia. Unlisted relaying Phnom Penh-917 hrd with Cambodian talk at 1313 8/30, mx and ID at 1315 as Phnom Penh. Inquiry sent.

1330 Laos. A previously unknown stn, operated, see my sources, by the (Lao) Army Payvar Center. Hrd 8/30 at 1335 with ID something like "satanii withayu kachaisiang sun kam khon pathen tha"; songs, march and ID at 1342, music later. A regular here. Stays on late, past 1559 on 10/15 w/mx & annts

1370 India. Delhi C, with Vividh Bharati pgs 8/30 1732 Jena Gena Mana and off.

1370 Thailand. For Chor Sor, Chiang Mai, informal amst and off 1701 10/4. Believed to be in Northern Thai dialect. I visited this stn in August and was shown around by a stunning lady announcer. (What did she stun with, Glenn? hi hi-ed.) Studios for Lamphun-1480 are in the same building.

1395 Thailand. of previous rpt, My Thai informant listened to the tape and says it is "non ton tahaanbok" an army stn at Camp Surasat, near Lamphun, contrary to what I had thought.

1440 Andaman Islands. A new country, tmx to loop but only 657 miles. Hrd 8/25 at 1520 w/news in Hindi, 1530 TS and AIR ID, Kx in Eng. This matches the sked in Akaabvani, whereas that for Kanpur is different. Reviewed headlines at 1545, Natl Anthem and off at 1601.

1520 Thailand. Song-Sun, or two-zero (two-oh) has news in various foreign langs around sunset, e.g. Cambodian 1120, at 1125 ID and into Pedun. Had ID in Thai and Eng 9/13 at 1502, then nightly newscast in English, + commentary. This is the stn of the Prime Minister's Office. In addition to the English at 2330 and 1500, their foreign news block includes Malay, then Cambodian and Pedun as above, 1137 French, 1142 Thai dialect or Lao and music at 1155.

1529 Laos. unID 8/29 1154 with ad in Lao, break in mxn, 1200 no ID and into "those were the Days". No SW // was found, after chkg 6130-5697-7600-7790 and 4615. No breaks until 1255 talk, 1300 pgm summary, Lao songs 1305.

1532 Thailand. The Hongrian stn previously rptd on 1556-7 is now fairly stable here but claiming to be on 1560, as was hrd at ID 0105 11/4, along with amst about the Gheela. (gms). Also on in the evenings.

1591 As I leave soon, another local signal now here. ID something like "SWKS Kongsap Pa Thi 2" 0205 11/4, songs and IS as 1600 kHz, 190 meters.

655 Vietnam. Re Reynolds's unID, is quite likely Hue as they are allnight along with other major VTVN stations such as 870; plays a variety of music.

By Jan Tuner

Reading about the fishy loggings of DXers with little experience or of those suffering from a complex of inferiority, I recalled a few incidents. I conduct a bi-weekly DX spot over Deutschlandfunk, Cologne. It is broadcast Wednesday and Saturday at 20.45 GMT on 1268 kHz. Transmitter power is 600 kW, which is a powerhouse in northern Europe as you can imagine.

Every now and then I use recordings of rare DX stations in the spots. On one occasion I played the ID of KNDI Hawaii. Well, it is a small world full of strange coincidences. A few months later I received an Award application from a German DXer. The award is issued by the technical magazine, Technik for Alla, the DX section of which I edit, and it is based upon verified radio countries. This German fellow claimed he had a QSL from KNDI Hawaii. My first reaction was, of course, "the kid is crazy" but after some days it suddenly struck me! He in fact did hear the identification of KNDI - but in my programme! KNDI is operating on 1270 and Deutschlandfunk on 1268 kHz! What a coincidence! Of course his judgment was rather poor but he did hear a clear ID on the assigned frequency of the station, at least it appeared to be 1270 kHz. Well, if you are really new in DX such things may happen. I can tolerate his bad judgment but what about KNDI? They verified his report...

A couple of months later I had a feature about Radio Atlántico, Canary Islands. I had paid a visit to the station and its Swedish programme. Besides an interview with the Swedish manager I played an ID in Swedish. A week later a fellow phoned me. He had heard the Swedish Tourist programme of Radio Atlántico loud and clear and was quite excited. At first he had phoned Radio Sweden but they know nothing about it, so he was advised to ask at Teknik for Alla and they forwarded his query to me. I would never have guessed what he had heard (or how much snaps he possibly could have been consuming) had I not prepared the programme myself.

The cases above both illustrate a fantastic coincidence - coming directly to my knowledge. But I keep asking myself: How many excited "DXers" all over Europe are digging gold from 1268 kHz in the evenings? I have a fine ID from the Solomon Islands BS and a programme about the station is projected, but...

Reprinted from "FRENEX", Oct. 70.

GPN)

Radio Says Southern Yemeni Group Fights Regime

A new radio station, Radio Free South, began broadcasting this week in opposition to the ruling party in Southern Yemen. The new station urged people to take up arms against the leftist regime of Premier Mohammed Ali Haidham.

The radio, whose location is unknown, says it speaks for an army of salvation, and says it seeks to destroy the regime.

attacks on the Hadramaut region from different points, capturing some Government garrisons, destroying outposts and marching toward Tarim, Seyun and Mukela, the principal cities of the region.

The radio said the insurgents had won over many tribes in the region, as well as hundreds of former officials and men of the Southern Yemeni army.

Atheism Rejected

The insurgents regularly broadcast their objectives, which include the creation of a state based on the principles of Islam and the rejection of "Atheistic, Communist and Imperial Ideologies." It calls for the formation of an annual assembly representing all regions and groups, and the elimination of political parties. At present there is only one legal political organization in Southern Yemen, the National Liberation Front which fought for independence from Britain

for four years before withdrawing in 1967. It has also a former scientific section. On the model of Egypt's Arab Radio, the region has already given some very broad coverage and public services with production of

VIA R 5



from Foxy

(We expect to have freqs next issue

# PATTERNS

Part 2b, by PAUL HART

As developed in Part 2A, the question under examination in this section concerns the vertical behavior of stations using horizontal patterns. In order to place the FCC's attitude in perspective, the following paragraphs are quoted from Part 73:

73.150 Data required with applications for directional antenna systems.

(3) "Calculated field intensity vs. azimuth patterns for every 5 degrees of elevation through 60 degrees in those instances where radiation at angles above the horizontal plane is a pertinent factor in station allocation.\* These patterns may be plotted in polar or rectangular coordinates but shall be submitted one to a page. Minor lobe and null detail occurring between the 5 degree intervals need not be submitted."

73.151 Field intensity measurements to establish performance of directional antennas.

- (1) "Horizontal field intensity pattern(s) showing the inverse field intensity at 1 mile and effective field intensity (RMS) as determined from field intensity measurements taken and analyzed in accordance with 73.186 in at least the following directions:
- (i) Those specified in the instrument of authorization.
  - (ii) In major lobes. Generally at least three radials are necessary to establish a major lobe; however, additional radials may be required.
  - (iii) .....However, when more complicated patterns are involved, that is, patterns having several or sharp lobes or nulls, measurements shall be taken along as many radials as may be necessary, to definitely establish the pattern(s)."

The most significant information in these quotes relates to what the FCC does not require:

1. No vertical radiation information is required for any antenna above 60 degrees.
2. For many stations, the vertical pattern is not required by the FCC.
3. Only the horizontal pattern (at 0°) is verified by measurement after the station begins transmitting.

These things, in turn, result in the following situations confronting anyone interested in working with vertical patterns:

- A. Vertical patterns are relatively hard to obtain - most do not exist. Even the ones that have been calculated and submitted in the original station proposal are not carried in the Cooper-Trent file.

- B. The vertical performance of an antenna is rarely if ever checked by actual measurement. The best information we will ever have is the calculated performance contained in the FCC-accepted proposal.

## WQXR - FIRST EXHIBIT

Figure 8 is the measured nighttime directional pattern for WQXR in New York. Information is given that three towers in a row are used, spaced 90° electrically, and all three are 0.475 wavelength in height.

Figures 9a and 9b are vertical plots of WQXR on the two bearings shown. On all of these charts, the "base start value" is the actual field strength value in MV/M on the ground at which the curve starts at the left. The estimate of the pattern vertical behavior is shown as a solid line, and an ideal  $\frac{1}{2}$  wave curve is shown as a dashed line.

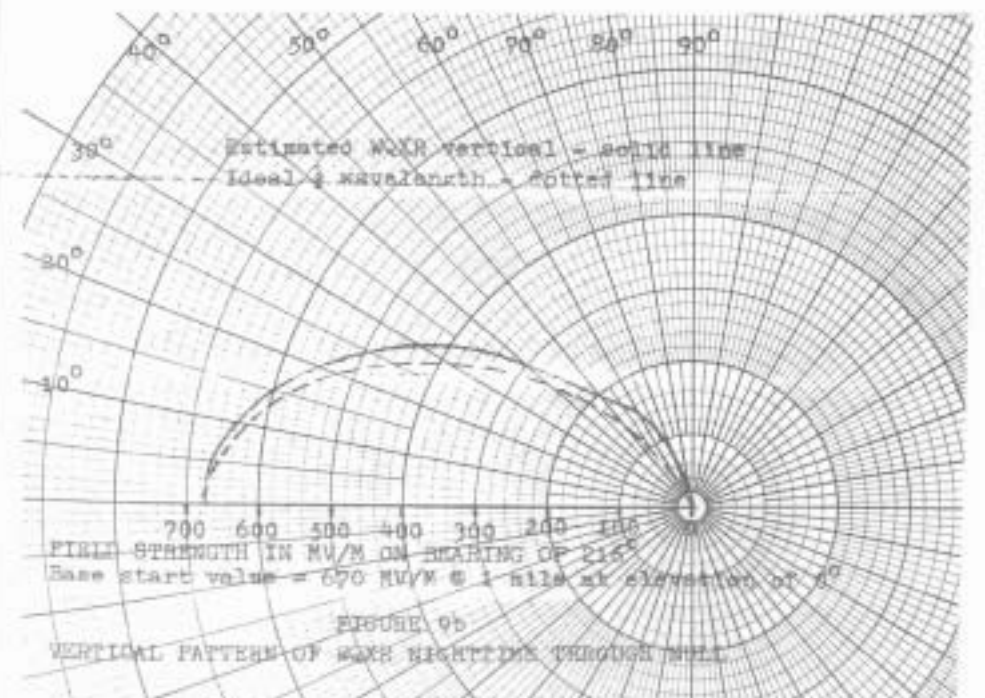
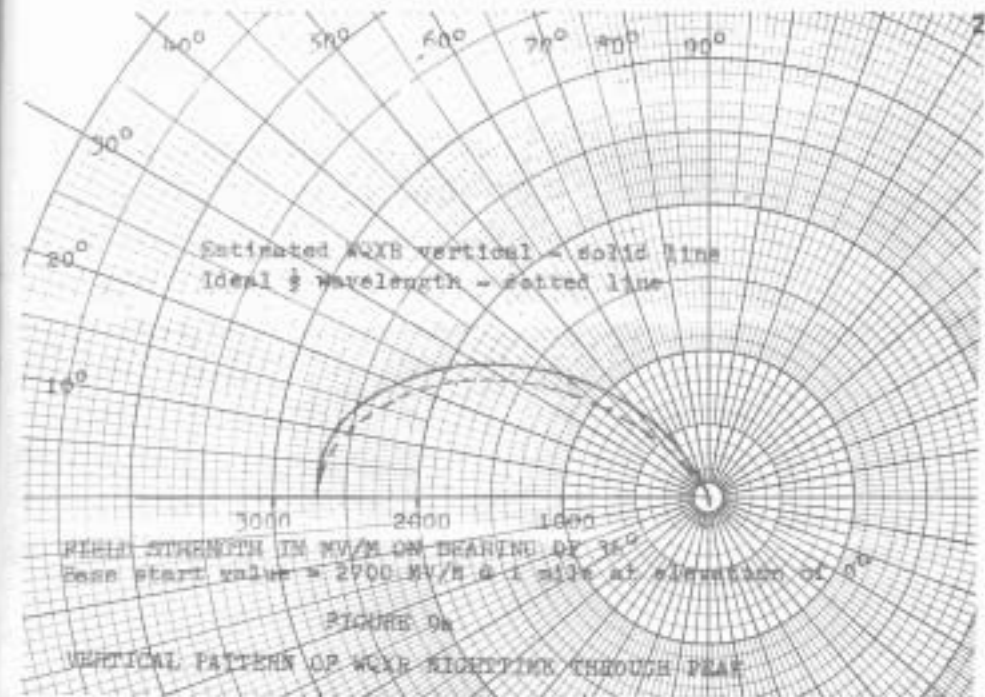
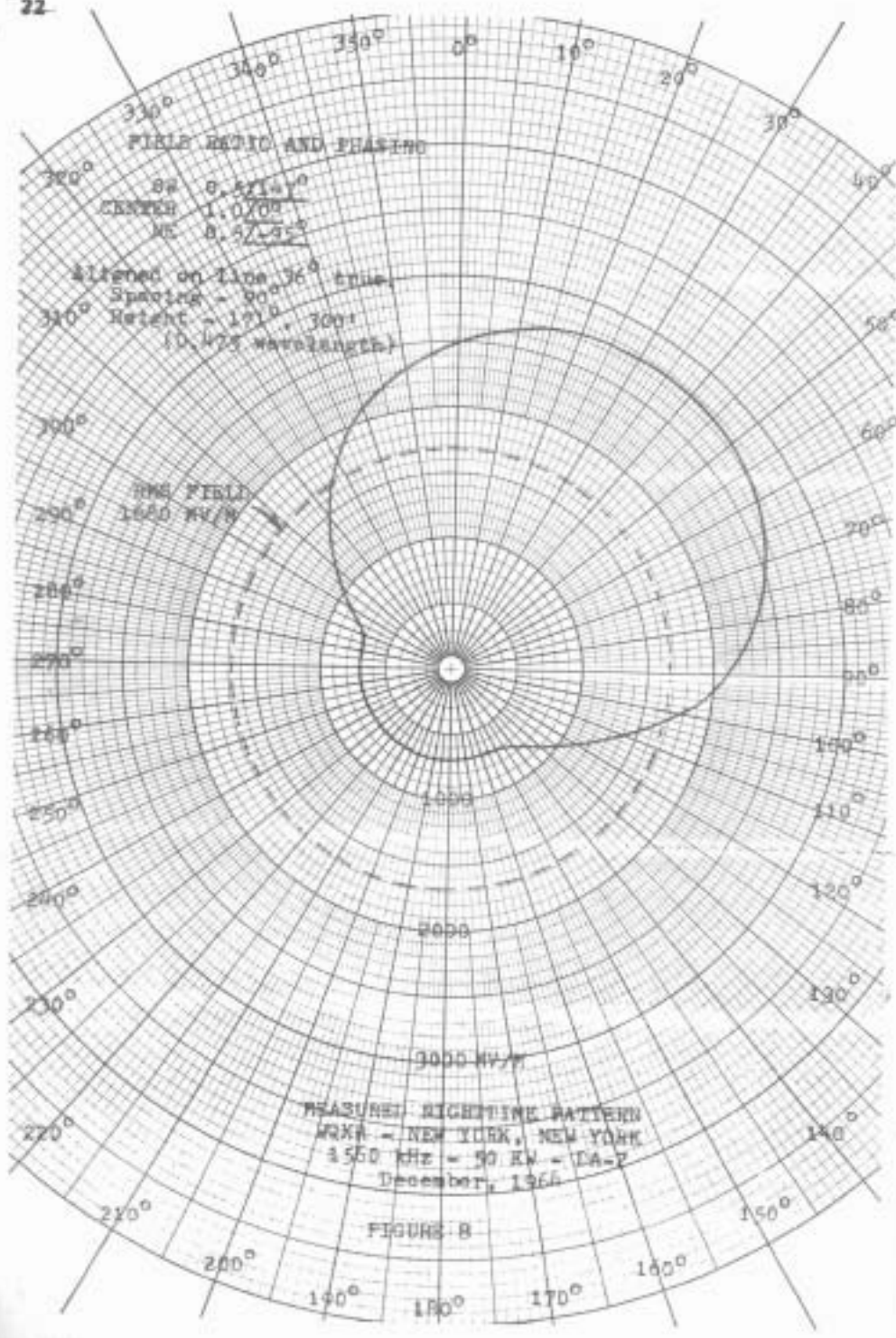
The ideal curve is developed by referring back to Figure 6a in Part 2A. The base start value for the  $\frac{1}{2}$  wavelength curve in Figure 6a is 236 MV/M. By taking a straight ratio, all of the values on the ideal curve for Figure 9a will be  $\frac{2700}{236} = 11.44$  times the point values for the  $\frac{1}{2}$  wave curve of Figure 6a.

To construct a point on the ideal curve on 9a, read the 30° value for the  $\frac{1}{2}$  wavelength curve on 6a as 135 MV/M. The value on the ideal curve at 30° will then be  $(11.44)(135) = 1544$  MV/M. By figuring as many points as desired in this manner, the ideal curve is defined. The dashed line is then drawn to connect the data points. The two curves can be easily compared to gauge the vertical behavior of the pattern for the bearing shown.

For Figures 9a and 9b, the estimated curve bulges slightly above the ideal curve. But WQXR's towers are not quite  $\frac{1}{2}$  wave tall, and from 6a, you can see that as the antenna height decreases, the upward bulge increases. WQXR's vertical pattern certainly behaves very well on these two bearings, and the EQP values would be accurate without question. To my knowledge, no engineering estimate has been made for any other bearings, but it seems that any deviations from ideal vertical behavior would be insignificant for this pattern.

You may notice that the base start values in 9a and 9b do not agree exactly with the measured pattern of Figure 8. This is because the vertical patterns are estimated from the proposal, and Figure 8 is taken from the actual measurements made on the completed and operating antenna.

\*Underlined emphasis added.



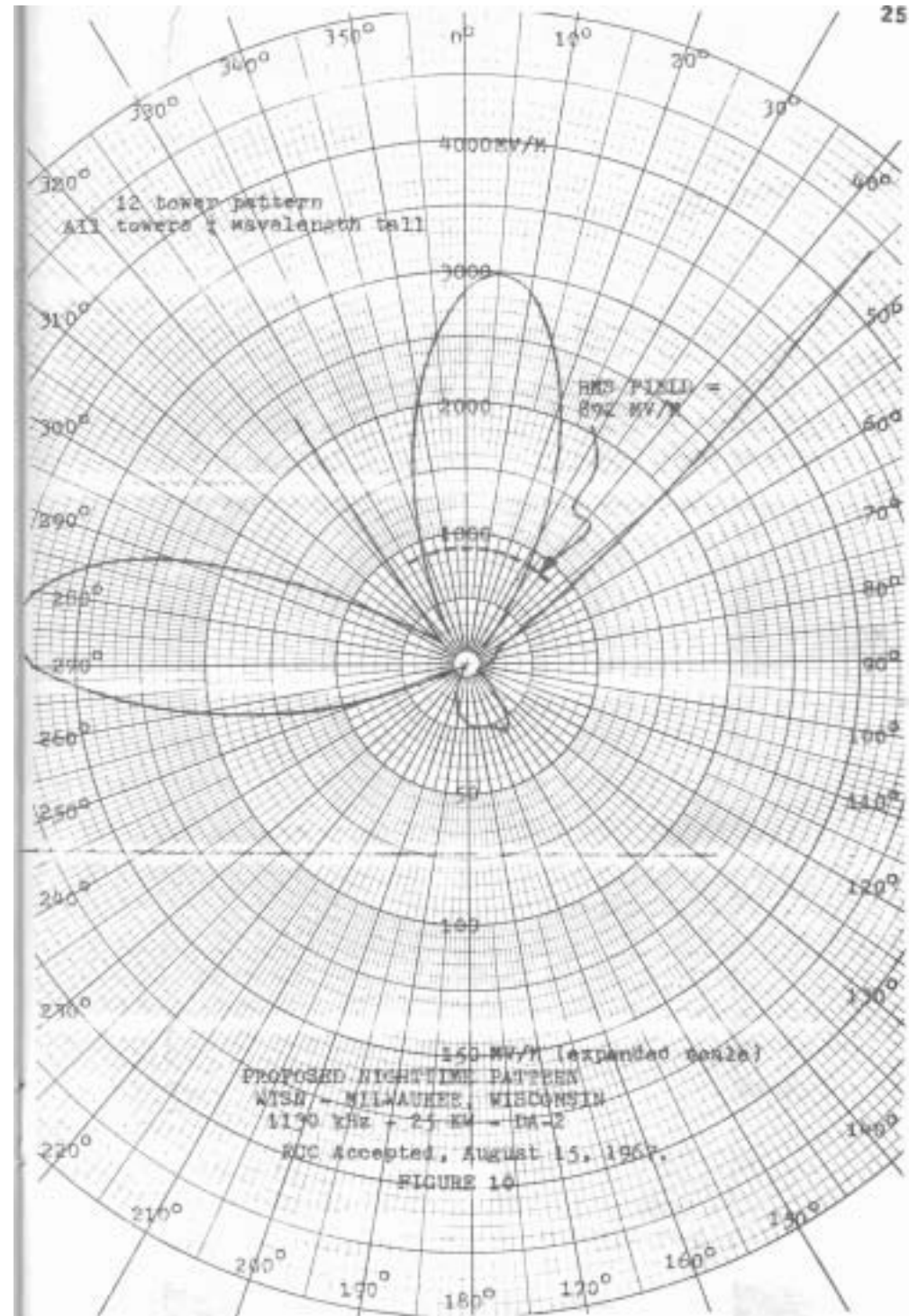
## WISN - SECOND EXHIBIT

Figure 10 is the proposed horizontal pattern for WISN in Milwaukee for nighttime operation with 25 KW, using a 12 tower array. Remember that WISN's present operation is 10 KW night with a 9 tower antenna setup. All tower heights are given as  $90^\circ$ , or  $\frac{1}{4}$  wavelength, and the RMS field is 892 MV/M.

The complete vertical readout of this pattern is available, with a total of 936 data points. The radials for which Figures 11a, 11b, 12a, and 12b are plotted were deliberately chosen to show the worst vertical behavior to be found on this pattern. On most bearings, the vertical behavior was quite reasonable. Keep in mind that the curves shown are the worst cases obtainable on one of the most radical antennas either proposed or operating.

A quick look at the solid line in Figure 11a shows that WISN's vertical pattern on a bearing of  $225^\circ$  is much unlike the ideal  $\frac{1}{4}$  wavelength curve in Figure 6a. If we were to calculate WISN's EQP on this bearing, using the base start of 1 MV/M and the RMS field of 892 MV/M, the EQP value would be  $(\frac{1}{892})^2(25,000) = .031$  watt! Ridiculous as this sounds, the calculation might well be accurate on the ground, but it certainly won't do as an accurate estimate for skywave reception. (Surely the actually measured value on this bearing will exceed 1 MV/M). Let's impose an arbitrary restriction, and say that we will not accept as valid, any calculation that yields a power less than a 500:1 ratio of the station's rating. We can figure the relation backwards to see what the field value for WISN would be for the 500:1 power. The power would be  $25,000/500 = 50$  watts. The field necessary to yield an EQP of 50 watts would then be  $(\frac{x}{892})^2(25,000) = 50$ .  $x = \frac{892}{22.4} = 40$  MV/M. Let's then draw on Figure 11a a dashed line representing an ideal  $\frac{1}{4}$  wavelength antenna with a base start value of 40 MV/M. Observe that the ideal and estimated curves cross at  $42^\circ$ . From Figure 7 (Part 2A) on the E curve,  $42^\circ$  corresponds to 125 miles. This means that if you accept 50 watts as an estimate of WISN's signal strength and you live 125 miles from the antenna, your estimate is going to be just right. Farther away, the energy received will be less than predicted by the 50 watt value, but the estimate of 50 watts is still much more accurate than 25 KW.

Take the behavior on the bearing of  $255^\circ$ , Figure 11b. The base start value is 71 MV/M, so the EQP calculation would yield  $(\frac{71}{892})^2(25,000) = 160$  watts. This value is above our 500:1 value of 50 watts, and would be accepted as a valid calculation. The dashed curve on 11b is the ideal  $\frac{1}{4}$  wavelength curve with a base start of 71 MV/M. Notice that the ideal and estimated start off together, but the estimate rapidly drops below the ideal curve until the crossover is reached at  $55^\circ$ . From Figure 7, this is 75 miles. Even with this less-than-ideal behavior, the 160 watt EQP value is always equal to or higher than the estimated curve. It certainly is a much more accurate indication of WISN's signal on this bearing than the 25 KW log power rating.



The only real options we have is to accept and use the EQP ratings as they are or to reject them. For reasons stated earlier, it is impossible to obtain vertical as well as horizontal plots for all stations using patterns. In order to keep things in line, let's assume that we use the restrictions stated below in regard to EQP values:

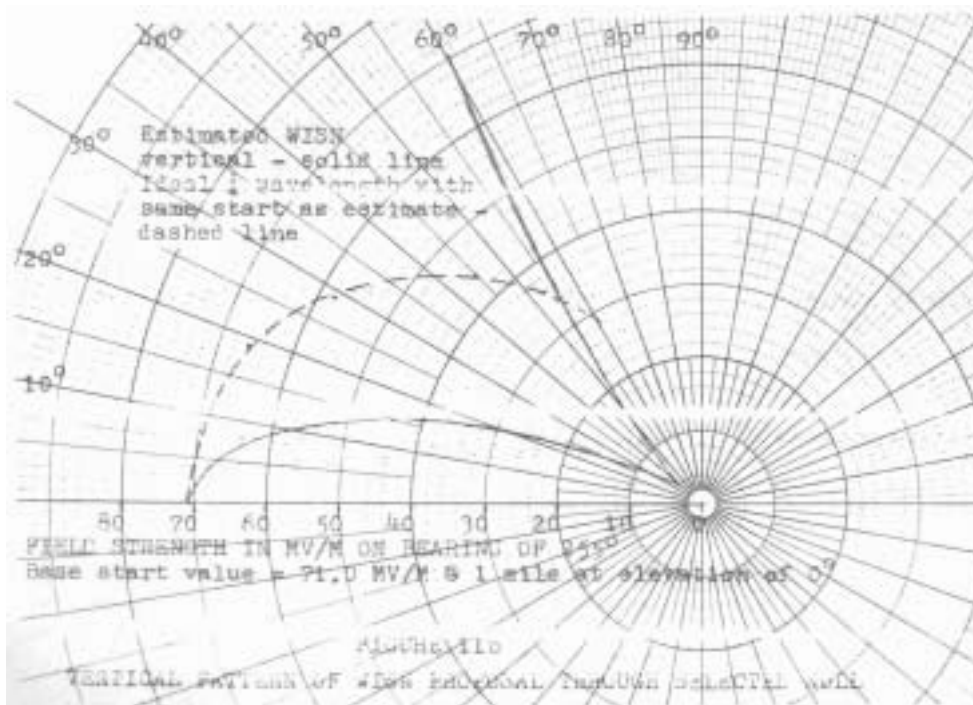
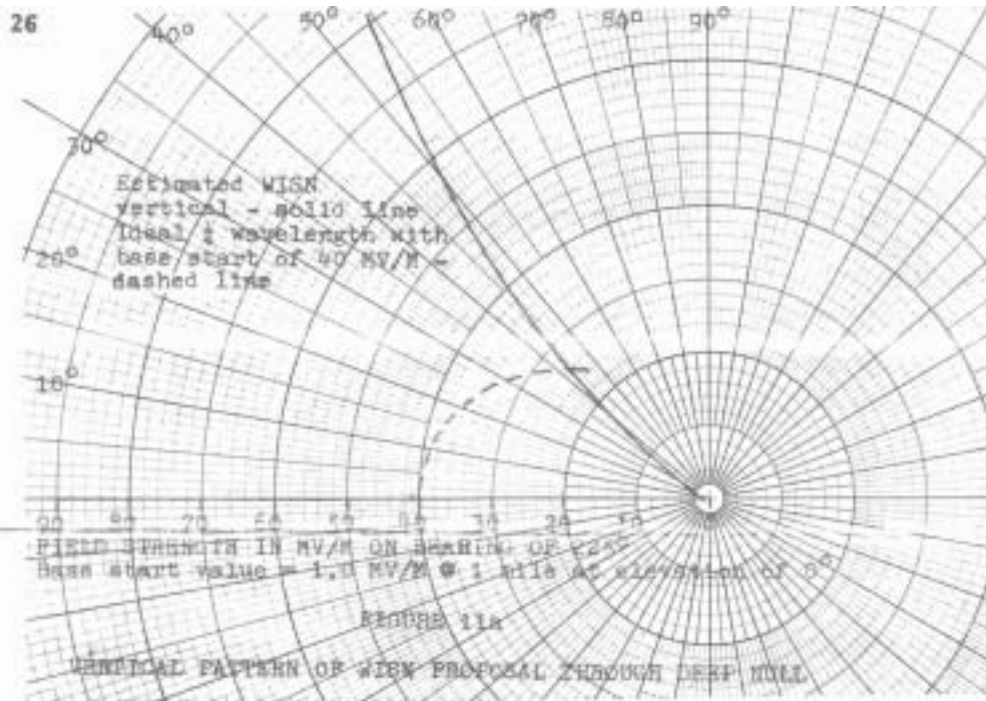
1. Restrict power reduction to 500:1 relative to rated carrier power. This is a good rule to observe under any circumstances.
2. The listener should be 200 miles or more from the station. This limitation is subject to modification in light of the individual case. For example, if the reception is daytime groundwave, the EQP calculation is valid regardless of distance. If the pattern is known to be very stable, no restriction as to distance need be imposed, even at night. If the pattern is known to be very unstable, maybe more than 200 miles should be used. The 200 mile figure is intended as a guide for nighttime use if no other specific information is available.

Even these restrictions don't fix everything all the time, as can be seen from Figures 12a and 12b.

Figure 12a is the vertical plot for the WISN proposal on a bearing of  $30^\circ$ . The EQP calculation would be  $\left(\frac{1143}{892}\right)^2 (25) = 41 \text{ KW}$ , and would certainly be considered valid. Note that the estimated curve is above the ideal  $\frac{1}{4}$  wavelength curve all the way to  $60^\circ$  and some distance beyond. If we go back to the 200 mile rule, and plot another ideal curve designed to cross the estimate at  $30^\circ$ , we can then see where it would intersect the base line and determine the base start value for this new ideal curve. That curve is shown dashed with circle data points on 12a. The new base start is 1600 MV/M which means that if we want the estimated radiation to be accurate or less than the EQP value for all distances of 200 miles and more, the EQP rating would have to be  $\left(\frac{1600}{892}\right)^2 (25) = 80 \text{ KW}$ . This error is significant, but some things must be kept in mind:

1. This behavior only occurs over a very small portion of WISN's curve.
2. The most valuable information from patterns concerns nulls and their magnitude. This is a bearing on the curve where a strong signal would be expected whether you accepted the 41 KW figure or insisted on the 80 KW value.
3. As the distance increases beyond the 200 mile limit, the error rapidly diminishes in magnitude.

Figure 12b is the worst case of all. The base start value of 22.6 MV/M would yield an EQP value of 275 watts, a figure that would be accepted by the 500:1 restriction. The vertical curve increases in value rapidly after the base start, and would result in significant errors. As before, another ideal curve has been constructed on 12b using a  $30^\circ$  crossover to determine what the base start value would have to be. In this case, the value is 11.3 MV/M, which would result in an EQP value of



$(\frac{334}{892})^2(25,000) = 3500$  watts. No two ways about it, this is gross error, but again, remember the followings:

1. This severe a problem only occurs over a small portion of even this radical curve.
2. As the distance increases beyond 200 miles, the error decreases rapidly. For an intercept of 20° or 300 miles, the required EQP prediction to maintain the estimated curve even with or below the ideal curve would be 1 KW.\*
3. Using the most gross reasoning, 275 watts is still a better indication of WISN's radiation than 25 KW, even knowing that if you are 200 miles away, 3.5 KW is the proper value.

### SUMMARY

This information has been presented to allow the reader to examine the question of EQP validity for himself and make an intelligent decision. The following proposal is submitted for the reader's consideration:

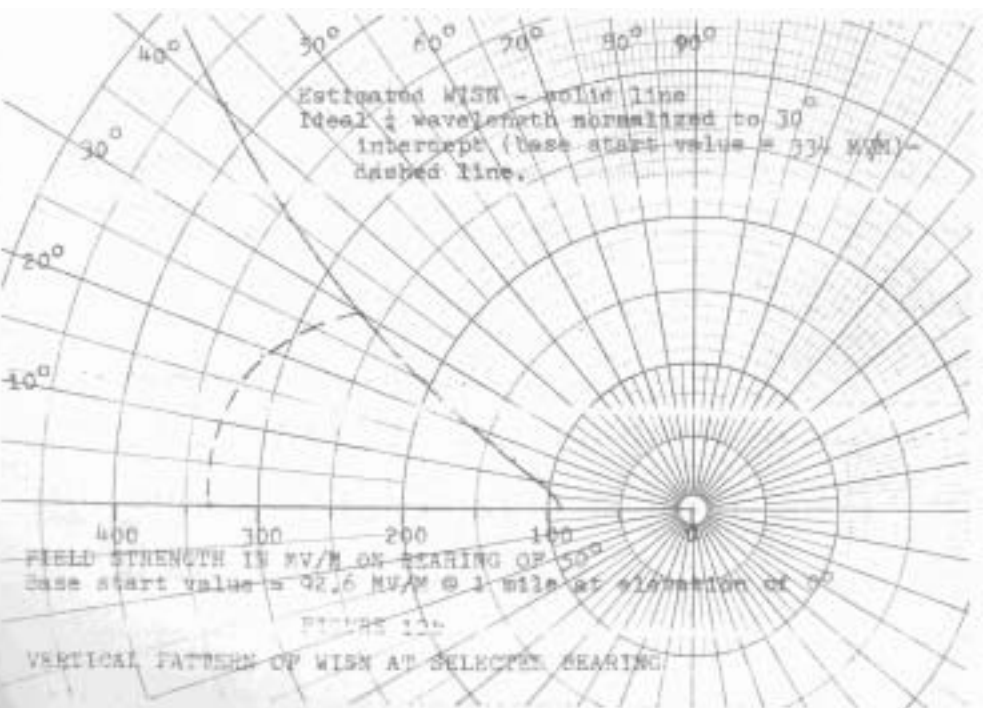
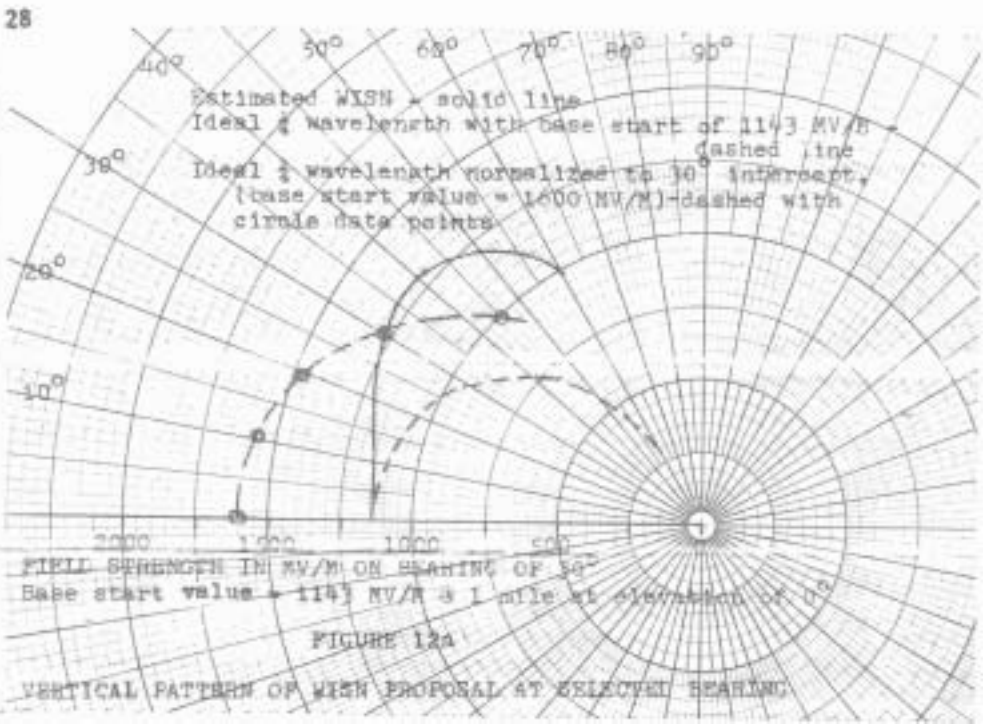
Use the EQP ratings as described, using the 500:1 power restriction, and distance restrictions as seem prudent under the circumstances. If no indication of the probable vertical behavior is available, use the 200 mile rule for night condition

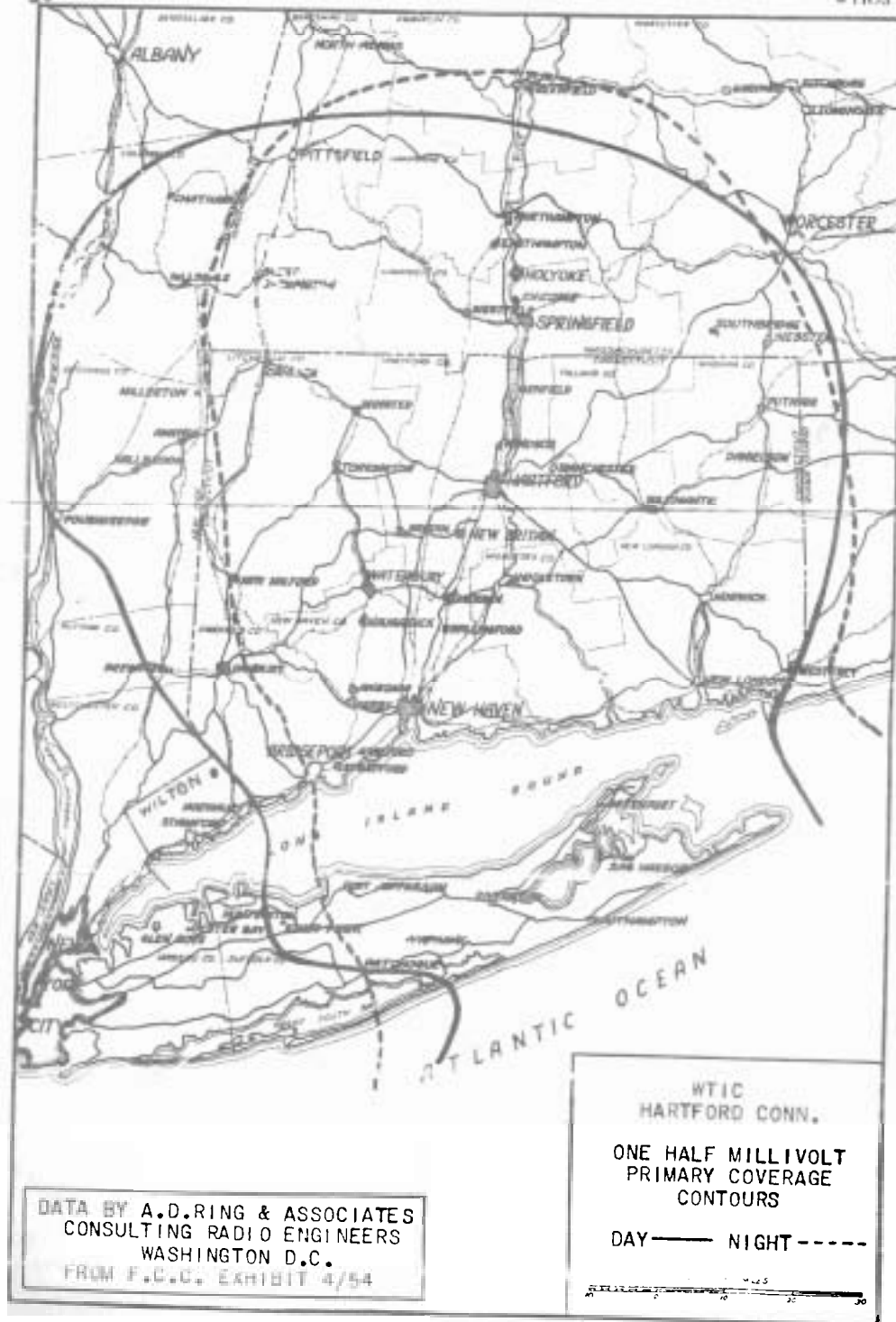
The compactly stated reasons for this recommendation are given below:

1. The erratic plots shown for WISN are worst cases for an extremely radical antenna. Even in the worst cases, the EQP value is more accurate than the station's assigned power.
2. In Part 3, the presentation of the pattern information will give the user an indication as to what distance restrictions may be appropriate.
3. The benefits of using pattern information are enormous in enabling the user to predict probable reception results. The validity of these calculations has been confirmed in practice during 2 years of observations from different locations.

Investigation into these problems will continue, and any new information of significance will be submitted to PX NEWS.

\* It would be an interesting exercise for the reader to verify this calculation.





## TIPS FOR NOVICE DXERS

### PT. 2: LOGGING THE 50 STATES

by Page Taylor & Russ Edmunds

There was a time when logging the fifty states wasn't too difficult a task. In fact, up until the recent trend toward all-night broadcasting, it was totally possible as recently as five years ago. At the present time, however, logging all fifty states is a difficult proposition regardless of your equipment and location. In this article, we will present some ideas on how to go about looking for logs from all the states, as well as tips as to when to listen, and as to what stations should be the easiest to log. A table of these stations appears following the text of this article.

In any given section of the country, there will be certain states which will prove highly elusive, and we have tried to take several geographical areas into account in the preparation of this article. We realize that for the Eastern DX'er, the states of Oregon, Alaska, Hawaii, Wyoming, Idaho, Montana, and the Dakotas are all extremely difficult to log. To be sure, many of these have recently-on-the-air or soon-to-be-on high-powered stations, but generally there is only one, and if that channel is blocked, it will take a generous helping of luck to hear that state. We also realize that for a Western DX'er, the states of New Jersey, Delaware, Maryland, Connecticut, Rhode Island, Maine, Vermont and New Hampshire, as well as South Carolina are exceedingly difficult, however Westerners have two distinct advantages, even though the station powers are generally lower: first, they have several choices to shoot for, some of them frequency checks; and second, they have the time advantage to be able to hear many Eastern stations at their sign ons, before many other interfering stations are on. Thus we see that these problems balance out.

The Northern DX'er has no real problems unless he falls into one of the above two, however, the Southern DX'er, and particularly the Southeastern DX'er has the worst change to log the 50 states because he is faced with the combined problems of both EC'ers and WC'ers. He can't easily hear most of the Northwestern states, nor can he hear New England in many cases, and he can't count on an Aurora to wipe out his regulars and leave the needed stations, because of his receiving location, which is generally below the auroral zone, and the fact that his needed stations are located within it.

One of the best methods to log all 50 states is to arrange CPC tests from hard-to-hear states. For instance, the most powerful station by far in New Jersey runs 10 kw. days (WRAN-1510), but gets nowhere on their 500watt night pattern, yet a DX TEST on a Monday morning which was hit by poor conditions made it to Colorado & Utah, even with competition. Likewise, the best chance for Oregon has generally been on DX TESTS, although several of these channels have now been blocked ( e.g. 1520, 1370 ).

Another helpful method is to listen for frequency checks (f/c's). The states of Wyoming and North Dakota may best be heard on f/c's, while New Jersey's best chance outside of WRAN would be an f/c from one of the 5- or 1kw daytimers. Auroras may prove helpful for Southern states, as well as may the use of sunset skip. This latter will also be of help in logging some of the Western or mid-Western states.

All in all, we can see that logging the 50 states can still be done, but only with careful forethought and a certain per centage of luck.



## APPENDIX: Tips for logging states/provinces:

AL: WAPI-1070; WOOV-1170	MT: KOPI-1180; KXLF-1370
AK: KYAK-650; KPAB-660	NB: WOV-590; KFAB-1110
AR: KAAY-1090; KIRA-1010	NV: KCRL-780; KIQX-720 (when on)
AZ: KTAR-620; KRDS-1190	NH: WKBR-1250; WFEA-1370
CA: KFI-640; KQBS-1020	NM: KOB-770; KSWs-1020
CO: KOA-850; KIMN-950	NJ: WJRZ-970; WWBZ-1360*; WRAN-1510
CT: WTIC-1080; WELI-960*	NY: WABC-770; WCBS-880
DE: WDEL-1150;	NC: WBT-1110
DC: WTOP-1500;	ND: WDAY-970; KFYZ-550; KNOX-1310*
FL: WINZ-940; WFLA-970	OH: WLW-700
GA: WSB-750;	OK: KOMA-1520; KVOO-1170
HA: KORB-650;	OR: KPNW-1020; KEX-1190; KYXI-1520
ID: KBOI-670; KGBM-1140	PA: KDKA-1020; WCAU-1210
IL: WLS-890; WMAQ-670	RI: WPRO-630; WJAR-920
IN: WWOV-1190; WIBC-1070	SC: WBSC-1550
IA: WHD-1040; KXEL-1540	SD: KSOO-1140; WNAX-570
KA: WISN-580; KFH-1330; WISN-1250	TN: WSM-650
KY: WHAS-840; WDRB-1560	TX: WBAP-820; WDAI-1200
LA: WNL-870	UT: KSL-1160
	VT: WHWB-1000; WVMT-620*
MD: WBAL-1090	VA: WRVA-1140
MA: WNE-1030	WA: KGA-1510; KOMO-1000
MI: WJR-760; WCAH-1130	WV: WVVA-1170
MN: WCCO-830; KSTP-1500	WI: WTMJ-620; WISM-1180
MS: WOKJ-1550;	WY: KTWO-1030; KWYO-1110*
MO: KHDY-1120; KCMD-810	
AB: CHAT-1270; CJOG-1220; CFAC-960	NS: CBN-860; CHRIS-960
BC: CKDA-1220; CBU-690	ON: CKLW-800; CBE-1550; CJBC-860
MB: CBW-990; CKSB-1050	PEI: CFCY-630
NB: CFNB-550; CBA-1070	QU: CBM-940;
NF: CBN-640; CBT-540	SA: CBK-540; CKCK-620
NWT: CFPB-1200	YT: CKRW-610

SYMBOL \* DENOTES ONLY ON F/C  
 DAYTIMERS LISTED ARE MEANT TO BE TRIED FOR AT SR OR SS (WRAN-NJ @ SR)  
 ANY ADDITIONS OR CORRECTIONS TO THIS LIST ARE APPRECIATED & WILL BE  
 PUBLISHED SUBSEQUENTLY - The Authors

DOMESTIC  
 Y  
 IGEST



EDITOR:  
 R.J. Edmunds  
 Box 946  
 Wayne, N.J. 07470

Greetings and solutions. Cx have been strange of late with quasi-auroral alternating with quasi-normal, alternating with just noisy & blah, hi. This perhaps accounts for the small amount of supporters this past two columns.

## midnight to sunrise

610	KFRC-Ca	Hrd 0332 10/25 w/rr, Drake jingles, u/KGBM (Blake Lawrence, Canon Cy, Co.)
890	WHNC-NC	On for some sort of local emergency well o/WLS all AM 11/6 (Page Taylor, Butler, N.J.)
930	WLLI-Va	Noted on ET w/ ID 0450 w/ OC. Off 0453, MM 11/3 (Dave Schmidt, JIST-land)
990	WNOX-Tn	Strangely atop channel w/ no sign of regular WIBG 0020, 11/10 (RJE)
1110	KFAB-Nb	In well u/WBT 11/10 0050 (RJE)
1190	KRDS-Az	Noted very strong w/ c&w mx, 0100 on 11/2 (Page)
1230	KLAV-Nv	On top w/ID 0500 11/2 (Lawrence)
1240	KMBY-Ca	Good w/rr 20-20 nx, @ 0340 10/25 (Lawrence)
* 1250	CKOM-Sa	Hrd w/ pop mx 0422 11/2, apparently AN. (Lawrence)
	WREN-Ka	Atop freq. w/rr 0410 11/2 (Schmidt)
1300	WZLZ-Ca	Hrd on ET w/ID 0433-0528 thru WZLZ 11/3 (Schmidt)
X 1320	WVOJ-Fl	Atop channel even o/WKAP 0030 11/10 (RJE)
1350	WSMB-La	Alone 11/2 0433 w/nx (BL)
1370	KEEN-Ca	Good 0324 10/25 w/ c&w (BL)
1380	WLCY-Fl	Almost alone w/ nx 0055 11/10. Hrd w/ ID in ET/TT 0226 MM 11/2 (Page)
1390	WFMJ-Oh	Had ET/TT on & off all AM 10/23, few ID's. (Jerry Starr, WHOT-land)
1410	WONT-Al	Hrd 10/25 0400w/ nx o/WERN (BL)
1430	WHIL-Ma	DX TEST in fair w/ c&w & TT, lotsa QRM de CKFH,WIRE,WVAM, (Starr)
	WEIR-WV	Off 00010 MM may be AN-6 (Schmidt)
1460	WOKO-NY	Off MM's 0405 (Boyd, via Schmidt)
	WENS-Ch	Off MM's 0000 or 0100-0300 (Boyd via Schmidt)
1480	KBOJ-Tx	Alone w/c&w 0443 11/2 (Schmidt)(Lawrence)
1490	WROL-Tn	Caught MM s/on 0500 11/3 (Schmidt)
	WABJ-MI	Is either AN-6 or-7 (Boyd, via Schmidt)
	WARD-Pa	Logged atop channel 0013 11/10 for logging #1000 (RJE)
1520	KOMA-Ok	Hrd weaker than usual w/ ET, ID "testing 50kw XR" (BL)
1550	WKBA-Va	Hrd w/ carrier on AN 10/27, found out ID @ s/on (Starr)
	WIRV-Ky	Had ET 0110 w/ mx 11/7, and later w/ TT (Bruce Zuckerman, Clark, N.J.)
	unID	RR hrd 0110 after CBE off 11/7 u/WSHN-1550 f/c & WIRV ET. (Zuckerman)
1580	WVNO-Ch	Hrd on ET TT w/ s(9) sigs. Thought was semi-local WCRV. (Page, RJE)
X 1560	WIRG-NC	Hrd 10/25 w/ET 0040-0103, verified. (Walt Rogers, Concord, N.C.)
1580	WANB-Pa	ET w/ ID 0100 after TT 11/6 (Page)

**sunrise & daytime**

- 740 WGSM-NY Hrd w/ mx o/u WCAS 0840+ 11/4 (Rogers)
- 810 WPED-Va Hrd w/ sports 11/8 0740 o/u WGY (Page)
- 1090 CHR8-Qu O/u WILD w/ nx, 0903 11/3 (Rogers)
- 1140 WJJD-IL Hrd w/ wx @ 1200 11/8 (Page)
- 1170 WWLE-NY Hrd 0910-31 w/ QRM de WVVA & much fading 11/3(Rogers)
- 1170 WSAW-Pa ID after NBC sports 0830 11/4 (Rogers)
- 1180 WCFR-Vt Atop channel w/ c&w mx 0827 11/4 (Rogers)
- 1570 WPGM-Pa ID after sports 0745 11/4 then into religion (Rogers)
- 1570 WHRF-NY Hrd Id in mess here 0756 11.4 (Rogers)
- 1580 WCRV-NJ Mostly atop WPAC w/ ER 0803-11 11/4 (Rogers)

**sunset & evening**

- 550 KCRS-Tx Hrd 1833 11/1 o /KRAI (BL)
- 580 CKY -Ma Fair w/ nx pop mx 1904 11/2 (BL)
- 620 KMNS-Ia On top w/ mx 1845 11/1 (BL)
- 650 KIKK-Tx Hrd @ s/off SSB 1845 10/30 u/WSM (BL)
- 750 KSEB-Ok Inw/s/off no SSB 10/30 1900 (BL)
- 820 WATT-IL Even w/WBAP 1830 s/off 11/1 (BL)
- 860 KWHO-Ut Hrd w/ nx, wx., 1855 10/28 (BL)
- 900 KJSK-Nb S/off 1849 10/29 (BL)
- 910 WLAS-NC Hrd @ 1700 s/off 11/10 (RJE\*)
- 930 KWOC-Mo L&C w/ c&w mx 1830 11/3, abruptly off 1837, pattern change 7 mins. late (Starr)
- 940 WCPG-Ms Hrd 10/30 w/ carpet ad, 1755 (Page)
- WFNC-NC Ad for American Motor Lodge 1708 11/1 (Page)
- 990 WBTE-NC Noted w/ s/off 1702 11/1 (Page)
- 1090 WKTE-NC Hrd s/off ~~1632~~ 1632 11/1 (Page)
- I 990 WANT-Va Hrd s/off 1703 11/1 (Page)
- 1140 KSOO-SD O/WVVA 1730-1801 pwr/cut 11/5 (Starr)
- KPWB-Mo w/C&W mx 1730-1800 s/off u/KSOO, o/WRVA 11/5 (Starr)
- WJBA-Fl Hrd 11/2 1724 w/ mo sign of WRVA w/ SS call ID's (Page)
- WBZY-Pa Hrd ID 1641 11/3 o/u WRVA (Rogers)
- 1150 WJUN-Pa S/off w/SSB 1702 11/3 o/WOOP (Rogers)
- 1290 WTUX-De Hrd 1645 s/off 11/7 (Page)
- 1320 WJOK-Oh ID in DJ pgm., hrd 1636 11/3 (Rogers)
- 1330 WASA-MI Hrd 1645 s/off 11/7 (Page)
- 1390 WJSC-SC Atop channel 1716 11/10 (RJE)
- 1450 WKXL-NH Noted off 2240 11/1, engz sez per FCC order off 2215 Sans., tho' 2317 weekdays (Rogers) Hmm. -RJE
- 1470 KEKP-Co Hrd for first time 1830 11/3 (BL)
- 1520 WXPQ-Ga Hrd 1730-45 s/off 11/9 w/ r&b, soul, rr (Page)
- WDSL-NC Noted 1715 s/off simultaneously w/ WXPQ s/off (Page)
- WJNT-Ga Hrd 11/9 s/off 1730 u/WXPQ. (Page)
- WTTO-Oh Atop where WKBW usually is 11/10 1739 (RJE)
- 1550 KEND-Ka Hrd 1851 10/28 w/mx (BL)
- WYTH-Ma Hrd s/off 1630 no SSB after SS lang. pgm 11/1 (Rogers)
- WCTW-In Presume the one hear as call sounded close at 2310 s/off 11/9, tho' listed 2215... (RJE)
- 1560 WRIN-In Hrd u/WXPQ w/ clear ID 1814 10/30 (Page) Here we go again... (RJE)
- 1570 WJOL-NY Hrd s/off 1632 11/1 w/SSB (Rogers)
- 1580 WESY-Ma Hrd s/off 1830 10/30 (Page)
- 1590 WJSO-Tn Hrd 10/30 s/off 1800 (Page)

**changes**

- + 1340 CJLS-MS CP is on,
- ++ 1560 WTRQ-NC Per verie is nowon RS (Starr)
- 1570 WDNL-Oh Towers are up, should be testing around 1/1 (Starr,Schmidt)

1st Sat: WCII-1380; WSHY-970 (0115-0130 w/TT); WJAN-1190(0115-0200 w/TT);  
 2nd Sat: WJLI-970.  
 1st Sun: KNOX-1310; MHHN-1370  
 2nd Sun: WQVA-1490; WPTN-1450; WFUV-1580  
 1st Sat: WSHN-1550  
 per verie, WKHL-710 Al has f/c DT 0100-0195 2nd & 4th Thu. AM's (Starr)  
 \* denotes new check : add to list.

That about does all the info we have here presently. Once again, Broadcasting hadn't shown up as of Tues., last time it came in about 2 wks late... Also, I haven't yet culled out the f/c's listed in misings this past issue, (i.e. one rec'd 11/10) so that'll hold to next time, too. We expect to get the log corrector out for the first issue in Dec. or maybe the second, and the huge updater should follow around 1/1 or so, then we'll be back to normal on the DDND Updater section monthly. Cooper-Trent info, too has been sparse of late, so expect a raft of that stuff soon. Thanks go to Rich Reald & Steve Bohac for typing up the Corrector (in progress) and to Bob Ligon, who'll be doing the Updater, probably on his holiday vacation, hi.

RJE *RJE*

The continuing adventures of Dr. Harriet, late of BPC, in Paris...

