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DX CLUB
Established 1933
32 issues per year
\$13.25 Airmail
\$10.00 First Class
\$7.50 Third Class

DX News



OFFICIAL PUBLICATION OF THE
NATIONAL RADIO CLUB

P. O. BOX 99
CAMBRIDGE, MASS. 02139

VOLUME 38

AUGUST 28, 1971

NUMBER 31

"My sincerest thanks for a job well done! DX NEWS is a tremendous source of BCB info & continues to improve every issue." (Prof. S. D. Squibb, U. N. C.)



IN THIS ISSUE...

DX From the Twilight Zone - Phil Sullivan
Foreign Contest Results - Russ Edmunds
Geographical Patterns in BCB DX Reception During Periods of High Auroral Activity - Gordon Nelson
Final Convention Information - Don Kaskey

NEW NRC MEMBERS THIS ISSUE...

*Kenneth H. David, Hilo, Hawaii
*Dave Christensen, Seattle, Washington
*Floyd B. Walker, Fort Wayne, Indiana
*Mrs. E. B. Roach, Auckland, New Zealand
*Robert E. Garrett, Binghamton, New York
*Ellis Hart, Fairfield, Ohio
*Ja. Markiewicz, Winnepeg, Ontario



Welcome to the NRC, gentlemen, we hope to be reading of DX activities often here in DX NEWS!

RENEWALS...

Squibb... Roys... Oldfield... Coleman... Reh... Slater... Rattay... Reser... Shannon... Eddie... Ham... Rader... Hunt... Jacoby... Gray... Rugg... Hardester... Breville... Myers... Romstadt... Moore... Bloomberg... Merriman...

APOLOGIES TO THE IRCA CONVENTION COMMITTEE

During the confusion of getting out DXN last issue we inadvertently neglected to run the invitation from the IRCA ConComm for the NRC membership to attend their Toledo Convention. This was strictly an oversight on our part; a call from Dan Myers alerted us and, since the current issue would be too late to be of use, we did the next best thing and sent off a set of our NRC mailing labels to be used in mailing IRCA Convention info to our membership. We sincerely apologize for any trouble our oversight may have caused.

PEND ALONG WITH THE P. O. . .

We're still awaiting final word on our Second Class permit. Things are still more than a bit confused in Washington: those who read the Times know that one of the first items of new business before the new Postal Service is a complete revamping of Second Class service. The magazine publishers are screaming but it probably won't do much good. . . Readers of 73 Magazine noted that they've raised their rates from \$6.00 to \$10.00 in anticipation of the increased Second Class postage rates. . . You'll be seeing a lot more of that, we predict. . .



'Yes, I'd like it insured for the amount of the postage'

FM STATION ATLAS IS PUBLISHED. . .

The country's top TV-FM DX club, World TV-FM DX Association, has just published an atlas of US and Canadian FM station information for all DX'ers. If you ever DX FM, buy one and put it next to your NRC Logs. . . Available for \$2.00 from WTVFMDXA, P. O. Box 5001-NR, Milwaukee, Wis. 53204. Enclose 25¢ for a 15 page introduction to FM DX complete with predictions; another quarter will get you a sample of their bulletin too! They also say there will be a TV log coming out soon; we'll let you know here in DXN.

THE INCREDIBLE MAP BOOK PROJECT!

The man asked a couple of issues ago what we could do to top the NRC LA and Domestic Logs. . . It, fine folks, will be the NRC BROADCAST BAND PATTERN BOOK, now being compiled. Those who've seen one of the very few existing commercial pattern books at Conventions or DX gatherings know that they're incredibly useful but impossible to obtain. The NRC Pattern Book will consist of large legal sized 8-1/2" x 13" maps for each BCB channel showing the directional patterns, both day and night, for all the stations on the channel. Together with several pages of articles on patterns from Paul Hart and a set of auroral maps from GPN, the Pattern Book will run about 70 pages long. . . We'll bind it with a GBC comb same as in the NRC Logs and will sell it on a reserved basis to the NRC membership as we did the LA Log. Price will probably be in the \$4-5 range; it's impossible to tell this early. This project is headed by Ernie Wesolowski in Omaha (see Musings for his address); other workers on the project include Paul Hart, Jerry Starr, Wes Boyd, Russ Edmunds, and GPN. IF YOU WISH TO RESERVE A COPY OF THE PATTERN BOOK YOU MUST SEND US A NOTE TO THAT EFFECT OR YOU RISK LOSING OUT!

THANK YOU, ELECTRON MAGAZINE!

Said ELECTRON, Canada's largest electronics magazine in its March issue: "NATIONAL RADIO CLUB. This club has just got to be the best organized one, covering any segment of our hobby's attractions that you are apt to run across. . . If you have any interest at all in the BCB. . . write them!"

N R C

'71 CONVENTION, W. SACRAMENTO, CALIF.

Only for 4 days: Sept. 3, 4, 5, 6

Monogenerations & novices alike!

Series on display at the rancho hotel. . .

FBI revealed!

The registration will be \$13⁰⁰

Insipidity at its highest.

Orthogenic services for teenies. . .

Next year's site will be chosen: you can vote too (just like in NRC)

Learn what **ERBA** really is!

MUSINGS



Street & Co.
432 East 21st Street, N.Y. 10037

1970-71 FOREIGN CONTEST RESULTS

Division A - North America

1. Objio	257	(2)	
2. Burger	0		
Silvera	0		
Reynolds	0		

Division B - Carribbean

1. Conrad	589	(4)	\$3.25
2. Taylor	562	(3)	
3. Edmunds	542	(3)	
4. Objio	337	(2)	\$2.00
5. Pejza	127	(1)	
6. Kerfoot	60	(1)	\$1.00
7. Parsons	32	(1)	
8. Silvera	0	n/e	
Hathaway	0	"	
Kenney	0	"	
Moore	0	"	
Katz	0	"	
Erickson	0	"	
Southend	0	"	

Division C - South America

1. Objio	504	(4)	\$3.25
2. Taylor	144	(1)	
3. Edmunds	132	(1)	
4. Conrad	120	(1)	\$2.00
5. Pejza	32	(1)	
6. Parsons	28	(1)	\$1.00
7. Hathaway	0	n/e	
Moore	0	"	
Katz	0	"	
Erickson	0	"	
Southend	0	"	
Silvera	0	"	

Division D - Europe

1. Taylor	548	(3)	\$3.25
2. Edmunds	305	(2)	
3. Kelley	136	(1)	\$2.00
4. Parsons	16	(1)	\$1.00
5. Reynolds	0	n/e	
Hathaway	0	"	
Grant	0	"	
Moore	0	"	
Katz	0	"	
Erickson	0	"	

((NOTE: CESAR OBJIO PLEASE CONTACT ME AS TO HOW TO SEND YOU PRIZE MONEY AND TO WHERE!!!))

Division E - Africa & Near East

1. Burger	144	(1)	\$3.25
2. Taylor	136	(1)	\$2.00
3. Edmunds	36	(1)	
4. Parsons	8	(1)	
5. Reynolds	0	n/e	
Hathaway	0	"	
Erickson	0	"	
Grant	0	"	
Moore	0	"	
Katz	0	"	

Division F - Asia

1. Pejza	20	(1)	\$3.25
2. Reynolds	0	n/e	
Kamp	0	n/e	
Hathaway	0	"	
Erickson	0	"	
Southend	0	"	

Division G - Oceania

1. Pejza	32	(1)	\$3.25
2. Reynolds	0	n/e	
Hathaway	0	"	
Erickson	0	"	
Southend	0	"	
Kenney	0	"	

Note: "n/e" denotes no entries

PRIZES: Contest rules were altered slightly to allow each entrant two prizes instead of original one, due to large number of no-shows.

Total entries : 62
Total entry fees : \$31.00
Total prizes due : \$30.50
Mgmt. Costs : .50

If anyone else desires to manage a foreign contest for 1971-72, please contact me immediately, as I have plans drawn up for one or can give suggestions. If no takers by convention time, I'll be glad to serve as manager again next year, but I also won't mind handing over the reins,

TONY LAGATTUTA - Box 6291 - Portsmouth, Virginia - 23703

Just a line or two for July 1 deadline. (It missed -ERC) DX is not much lately as I am trying to save a bit of money. I hope to visit N.Y.C. this August & meet Ernie again after about 13 years, also Bernie Duffy, @ Staten Island. There is some chance I will be able to bring two young friends of mine to see the Big City. These are Paul, 13 then, and Glenn, 12 then. Recently, I DXed some at Nags Head (on the ocean), N.C. Following NRCer Marc DeLorenzo's tips. Long Island stations (most of them) were semi-local. WADK-1540 & WPRO-630 were strong. No sign of WVLC-1170, only WELW like a local. It seemed that more from R.I. & Mass. would come in. This was all on daytime. That's all for now; written in a hurry to meet 7/1 deadline. Best DX.

DICK TRUAX - 5101 Tamarock Drive - Charleston, West Virginia - 25312

DX since last Muse has been almost nil, hence no Muse for over two months. Lack of activity here is due mainly to the WORST CX ever experienced BCB-wise during the Summer period. Continual high electrical storm activity persists, and when it is quiet there is nothing on worth bothering with. Total additions for the month of May: WOLD-1330 Va. s/off @ 8:30pm 5/29. Total new loggings for June: WSVS-800 Va. s/off @ 8:30pm 6/27 w/semi-local null. One thing worthy of note, and the only new logging for July so far is brand new WPKS-1080, Hurricane, W. Va. which went RS for the first time today, 7/2. Very potent signal, but then 5,000w at only eight miles' distance tends to pin most 8-meters. It should be an easy catch @ 800 for most N/A-WA. Hope there will be more to report by next Muse. Oh yes, no sign of new WSLB-10, White Sulphur Springs, W. Va. as of this date.

ERIC DIRCCO - 540 Gallion Avenue - Pittsburgh, Pennsylvania - 15226

Greetings from the site of the 1972 Convention; if the NRC is lucky, that is. Consider the location: Nearby Pittsburgh, itself a DX Center, is Youngstown, DXers' Paradise. Here in the area it is not only possible to see girls, but log all 50 states on your AM radio. Needless to say, we can receive Cubans too, hi. People talk about the wonderful atmosphere around Pittsburgh, but (wheeze, cough), we DXers here are of the opinion that smog & haze help DX! Just look around you. Some of the NRC's pride and joy evolves from those big smog-filled cities like: Boston, New York, San Francisco, Dallas, Ringoes, and Youngstown, hi. Anyway, back to DX. CX aren't getting worse here, they couldn't! Hi. In fact for Summer they're quite good. Everyone should try some Summer DX! Since re-starting my DXing last week, I've been able to up my totals to 720 stations. Look out, 800, here I come, hi. Looking back on the '70-'71 DX Season I am quite pleased. Just 16, and using a Sylvania five-tube job for half the season, (HQ=100 the other half), I was able to log over 500 new stations, including 16 new countries. As yet I still have all the f/cs to get. That is, those that can be heard. As for verie totals this year, I went from 66 to 173, with (hopefully) a few still out. I just ordered a mechanical filter, and HQ permitting, I should have it by next season, hi. Anyway, space is running low, so 73s and CPY: That's Convention in Pittsburgh-Youngstown Next year.

DUANE CIESE - 1919 East Elm - Springfield, Missouri - 65802

Long time that I've been in these pages. Not much DXing done since Feb. due to lack of time. I'm presently in SW Mo. & will be in this general area till the last of August then back to Cal. Two questions: 1) Anyone who needs a ride to the NRC Convention, I have room for at least two. I'll be leaving 8/28 from Springfield Mo. & anyone along the way who needs a ride, please drop me a line. 2) I also would like to share a motel room with someone to keep the cost down for me. So anyone interested in sharing a ride to the Convention or a room, write, at 1919 East Elm, Springfield, Mo. 65802 & I'll get it. I hope to see many friends, new & old, there. IXLII.

ERNEST J. WESOLOWSKI - 1416 Pasadena Avenue - Omaha, Nebraska - 68107
 We had a wonderful time on vacation this July with the highlight at Cape Kennedy. Our family was given a private tour with an NASA guide. On the way down I really cashed in on old verie holdouts: KCHR-1350 WMC-790 WONA-1570 WEKN-1410 WMOX-1010, and how about this one, fellows? WSJC-810 for that 1969 Hurricane Camille Emergency broadcast which wouldn't answer for anyone that I know of. Then WHHT-1440, now WREE; WLIQ-1360, WLCY-1380, WIMG-860 & WCIS-1580 after three mail reports failed. Some of these reports go back to 1960. Two others I called didn't show by mail yet. I will not be in S.F. but will arrive in Toledo on 8/18. The CM idea is in the wind again. See more info on this elsewhere in DX NEWS. Country Music is #1. (Not in N.Y.C. alas -ERC)

CHARLES WEHCKING - 10531 Kennerly Road - St. Louis, Missouri - 63128
 Hi gang! Contrary to popular demand I am well and living in the wonderful St. Louis bi-state area, home of southern corn leaf blight and the St. L DXA. Not much DX here on AM due to FM, broadcasting, that is. I'm now working at WCBW-FM, 104.9, Columbia, Ill. (a beautiful Illinois farm town). We are considered St. Louis market since our XR is four miles from the St. Louis Gateway Arch. If any of you fellow FM DXers get WCBW RR's I'll verify them. Send them to my home address or to the station with my name on it so it gets to the verie department (me, myself, and I). On the AM scene, I went to Rolla, Mo., home of the best engineering school W of the Mississippi and saw KCLU-AM-FM and KPTR, & passed KPUI on H-66 in Sullivan, Mo. More DX next time. 73. (They'd make terrific DX TESTS for NRC, hi -ERC)

CONCERNING CONVENTIONS OF CERTAIN DIMENSIONS

WORLDWIDE TV-FM DX ASSOCIATION. This will be in East Lansing, Michigan, at the University Inn Motel. It will be on 8/14-15, and info came to us from the NNRC Bulletin and the IRCA Bulletin. NNRC says info may be had from Box 5001, Milwaukee, Wis. 53204, and IRCA gives the address as: Roger Brown - 1617 Linden, East Lansing, Mich. 48823.

IRCA CONVENTION. Send your registration for attendance at this annual event to Dan Myers - 2650 104th Street - Toledo, Ohio, 43613. It's for the weekend which comes two weekends ahead of our Convention, or to be more specific, August 20-22. There are tours of WTT0 and WTOP, possibly WOH0 also, and a possible side trip to Detroit & Windsor to visit WJR & CKLW, and WXYZ. Perhaps there is more on this elsewhere in this issue, from our Boston group.

"AN" SITUATION

ALL ONS: 560 W I S MoR, AN6. 1430 W N J R SPU, NN, on MMs.
 880 W C B S All NX; NSP. 1550 W O K J SPU, NN
 1400 W W O C Ex-WHII, NN, AN-6

REMEMBER, a DX TEST r/c from KWYS-920, West Yellowstone, Montana, on Friday AM, August 27, from 3:45 to 4:00 a.m., E.D.T., for IRCA. This is quarterly; always on the 27th - next TEST on Saturday, November 27th.

WEST SACRAMENTO beckons to all - we havv all read what a wonderful time can be had at the El Rancho Hotel-Motel in this famous DX city! Don Kaskey will be hoping for a big turnout. There are more details elsewhere in this issue certainly, but let this merely serve as a reminder that that Labor Day weekend is looming on the not-so-distant horizon, even as you read this! Act now and get in on the fun - and find out (if they'll tell you, that is) what ERBA means. And at this NRC Convention, there'll be DXers whom you have NEVER met before! That's guaranteed! And there will be scads of fun, you can bet on that. pack up your bag and head for West Sacramento! Read those details up ahead somewhere!

SUGGESTION: How about someone who subscribes to "BROADCASTING" writing a letter to their Letters column, explaining Monday Morning DX and trying to gain some co-operation from some of the stations which are making it so difficult?? -ERC

KEN ONYSCHUK - 1643 Olive Road - Homewood, Illinois - 60438

Hi again. I just got my portable radio fixed 7/24, and decided to put it to the test. My seventh 1600k station, WARU, Peru, Ind. 7:20-7:40pm 7/26 over two other "fadians". 7/24, Driving southbound on the Dan Ryan X-way in Chitown, I picked up WKNX-1210 Mich. 9:05-9:15 u/WCAU Cubs-Phillies' game. Three Other catches to note: WMUS Muskegon, Mich. 7/10 11:50-noon; WOKY Milwaukee 9:10-9:25pm 7/20 and first Tulsa skip of season, 7/22 on 1170, Oilers vs. Wichita BB for 1/2 minute @ 9:35pm, then fade to WWVA. On 1130, WISN-Wis. 50kw. to 9:30, then cut power, then Astros BB on KWKH. What's with KFAB-1110 at night? They came in clear w/good mx, WX, NX, last Fall - now I get a weak WBT N.C. signal. (Last year KFAB was non-directional after a storm knocked out their towers -ERC) I'm still trying @ SSS for new signals daily, on the portable or car radio. I've got to go now, deadline today 73 till August.

JAY MURLEY - 1733 Candlestick - Newport Beach, California - 92660

Eastern DXers wandering out to West Sac a few days early, with sight-seeing plans in the Southland prior to the Convention, are most welcome to check in! Office phone in L.A. is 213-388-1271, home is 714-548-2914. In any case, I hope to see a large group at the El Rancho. You'll be interested in Kaskey's bar-tending ability and checking what goes wild in the rest of West Sacramento. Mucho new gear here - the NC-125, supplemented by a BC-453-B is now standby as it enters its 20th season of use. Key AM RX is an ARB, with a Sanserimo loop. On SW an SB-310 is fed by an old Moseley trap direly in need of replacement. Due to Summer static, I've gone to SW most of this Summer. Whoever heard of a DXer using ORTF-Tahiti on CCB as cocktail party background music? But it works well on SW! The new L.A. Log is great. If you haven't ordered one, and if GPN has any left, and if you mess around w/LAS at all, consider that investment. One last note - 1970-71 season verie return ratio - 100%. I wrote for primarily to check a tentative!

GEORGE KELLEY - 118 White Street - Belmont, Massachusetts - 02179

The OC that sometimes runs AN on 900 appears to be CKTS, Sherbrooke, Que. 7/22-WERT-1230 R.I. finally heard, good signal w/BI show & ID @ 3:30am, an eight-year holdout. I've now heard all R.I. Try that, DeLorenzo! 7/23-WIRM-1530 Mich. good signal @ 3:25am w/ET, ID given @ 3:45. Test consisted mostly of OC. MM 7/26 found a strong pirate on 1620 @ 3am, this must be the Yonkers, N.Y. operation again. He was playing light ci mx (that's a real switch) & his audio was excellent. He rambled on about how he detested rr & insipid Top-40 ERC, are you in the pirate radio business? Good DX. (Naw, George - just that word "Pirate" is distasteful to a MET fan! -ERC)

ERNEST R. COOPER - 438 East 21 Street - Brooklyn, New York - 11226

Not much going on here in the DX hobby - Mondays are getting like any other day of the week, thanks to AN-6s going NSP, one by one, like WCBS-880, for example. I've tried most MMs, but they've been awfully noisy. MM 6/7, someone on 1370 on f/c-ET, ID @ 1:25, but missed - a W. Unn WTAG-580 was ETING w/OC mostly @ 1:50. 6/8 - I looked for r/c of WMTD-1380, no show - anybody know when they do f/c? MM 6/28- UNIX ETER on 1320 w/rr, no announcements, 1:35. WGOE-1590, unnn WT @ 1:25. WABY-1400 atop w/RS-MoR @ 1:30. WJAS-1320 heard s/off @ 1:58. Local WWDJ-970 noted AN-rr. I heard a TT_r on 1450, give what sounded like poor keying of CW, letters soundee like KTCM - anybody find out who this was? 7/12 - I finally logged WGMF-1500 on r/c-ET 12:01-12:10 o/WDEE/KSTP w/ WTOP already off. WRN-1050 was not on RS but had OC on, 1:09. WNJR-1430 was noted silent @ 12:20am. WRAW-1340 was on top @ 12:25, s/off-SSB. WBAL WWVA WKYC & WBT were ALL off by 12:25am! CIERD-1480, unnn, s/off 0 Canada @ 1. WNJR was silent for about 11 days, but I had the chance to tune only one twilight and all I heard were WHLL (s/off 8:15 in July) WENE & WNAV. They came back on Thursday 7/29, & were AN/ET on MM 8/2, bah. MM 8/2 - The AN situation deteriorated here to 600, w/WLW-1430, newly returned to the air, on w/NN, plus the CBC network with Apollo-15 coverage, plus WBAL-1090, possibly for the same reason, as they weren't HI-ing but had light rr. I heard a mixture of ZDK & a Venezuelan on 1100, both seemingly ANING - gone were the two former holders of this channel, the two Colombian Relojs. That's it - see you in August.

KARL SCHULTE - 1504 Wilson Point Road - Baltimore, Maryland - 21220

Hey y'all! Greetings from Chesapeake Bay Country, the Land of pleasant living. How 'bout them Ch-ree-oles! Ain't the beer cold! Y'all be sure to look us up when you come to the Big B for the World Series. 686-8905 after 5:30. DX is almost non-existent around here in the Summer due to the fact of the heavy QRM from Crab Feasts, Iced Beer, the Rockfish are running (Stripers to you Yankees). Bass are hitting the surface now, soft shell clams (Manoes) are being shipped north to be passed off as "Genuine" New England clams, etc. The WX here is normal, humidity 99 44/100% soggy. Space Magnet is in. Seems to be OK, too much QRM to fool with it. L.A. Log is something else! It should prove a real lifesaver. For those of you who occasionally drift up to SW, I am one of the few proud possessors of a verie from Cable & Wireless Ltd., address & v/s on request. The N/S LW will have to come down. Utility Co. wants to take down tree it is attached to. Some sort of blight hit all the Gum trees in the area. None survived. Probably something somebody brought back from Up North. (Move North to N.Y.C., Karl, where the wires are all underground! -ERC) Many thanks to the BPC for the address correction, #30 arrived here Monday w/a Saturday postmark. I bet they ain't all Ynkees on the BPC. (nope, Big George is from South Boston!)

DICK NORTHPUP - 530 Midway Street - Hendersonville, North Carolina - 28739

This must seem like a voice from the past to some of the older members who may recall my Musings, reports, and even CPC work during the 50s and early 60s. However I have maintained an interest in DX over the years, even though I have not been very active in the last four or five. I have just moved to the above address in mid-April upon taking an early retirement from the Iowa Geological Survey in Iowa City, after completing 20 years of service. The western North Carolina mountains seem to be a pleasant place to live, and while CX have not been good since settling here, I have managed to pick up a number of new catches. So far I have added the following new ones, the underlined having verified: WCBX-1130 WQQC-1090 WLYE-1190 WCCB-1580 WZOO-719 (N.C.'s newest station, I think) WSGC-1400 WJUN-1580 WVOY-1000 (asy @ SSS here) WPAS-1400 WAVC-1350 WACY-1500 WPEB-1130 WEGY-1080 WYFZ-1070 WYNE & WYWC-1240 WYDK-1480 WKYE-1550 WMCT-1390 WQOK-1060 WBLN-810 WECO-940. Reports out to WJBE-1430 WAAK-960 WBRO-1310 WMAC-1360 WGMF-1500 WANI-1540 and WFIV-1080. From 9/70 to 2/71 the following were added from Iowa City: WWDA KRCK WIVS KCHF WCRV-TEST HCJB-DX WILY KHAD KOZN KCMW WDMP (after three previous attempts) WRDN KEGG & WAUK, all verified. I hope to report on a reasonably regular basis now that I am retired. I still have my old NC-88 purchased late in 1953 so you see it is pretty antiquated now. I just received my new Space Magnet from NRCer John Worcester two days ago, and consider it a wonderful buy. WSB in Atlanta, formerly only fair here in daytime now comes in like a local. All clear channel daytimers to the E of us as far as Charlotte and a way beyond seem to do very well. I hope to purchase a Hammarlund or other good modern RX by Fall. I will welcome any suggestions. Best of DX to all and will send more later. 73z

ROBERT E. FISCHER - Box 94 - Newark, Delaware - 19711

DX here has been slow in Summer. Static and other noises. In two weeks I take a camping trip (for two more weeks) and of course, my Sony portable & Space Magnet will accompany me. No locals up around the Cranberry Lake area. I was up there last Summer and an ordinary table radio picks up practically nothing on BCB in the daytime there. Maybe ten stations, most too weak to read. It will be interesting to see what the Sony and the Space Magnet antenna can do. For a kick I might try daytime DXing atop Whiteface or Mt. Washington. Only trouble with "MW" as we meteorologists know it, is that WMTW-FM has their XR there and it might overload me completely. As they say in Easton, Pa. WEST - Wipe (out) Eastern Standard Time (in Musings). Let's keep things simple, I'm in favor of GMT in all Musings, DDXD, IDXD, etc. It's the one universal time. We have to fuss around with three different times in our ~~area~~ (EST EDT & GMT) and it's a big pain. Let's vote for GMT in '72 (or earlier)! I'd like to hear other opinions. That's it for now, next time I'll report results of my DX-pedition, provided I don't drown in the 630 water. Both the blue cover log & the LA Log are terrific. (Cranberry Lake is in the Adironecks).

DUE TO CIRCUMSTANCES BEYOND OUR CONTROL, FOXY'S IDXD SECTION WILL NOT APPEAR THIS ISSUE. WATCH FOR IT NEXT TIME.

INTERNATIONAL DX DIGEST

PROPAGATION
& FEATURES

Gordon Nelson, 19 Irma Ave., Watertown, Mass. 02172

*GABON. Libreville has been recently positively identified by both Page Taylor and the Editor as the African being heard many nights on 1554 kHz after Nice had faded out. This one comes on at 0420 with an OC; a TT usually begins about 0425, followed by IS and s/on at 0430. Page tends to hear his best audio around 0500; here they're in best at s/on usually. Fade-out is about 0518; programming in French with lots of West African music. Be very careful with this one; as the season advances there will be more and more audio there from Nice, also in French. Check the SW parallel on 4777 kHz if you're having trouble IDing this one. Gabon was logged as Page's 94th country on MW; #123 for the Editor.

*OTHER SUMMER AFRICANS. Both Page and the Editor had very good signals from Nigeria on 1088 kHz about 4 weeks ago on MM; Page also got them on 1358 the same night. Try for this one around 0430 s/on. Page also reports hearing West African music on 1434 around 0500; this is very likely Bamako, MALI which was widely heard several years ago. Page's station is on an hour early for Mali's published schedule, which is something new... Taylor also reports a real newie - an African on 1578. The carrier appears around 0550 and an IS has been noted at 0600. This one is listed as a low powered station in the IVORY COAST; this one really bears watching!

SAUDI ARABIA. Jidda is now operating on 1183 with high power; this replaces 647 kHz. (Editor)

URUGUAY. Radio Oriental's new high powered transmitter on 770 is operating with 135 kw according to the station. It does not ID as "WABC", however, and it'll require a good auroral night to make it to the East Coast. It might be heard on the West Coast before dawn however...

BRAZIL. The Europeans report hearing split-frequency Brazilians on 1468 and 1472 kHz; anybody hear them here? (SDXK)

PHILIPPINES. DZHH, the Philippine Air Force Time Station is now operating on 1570 with 10 kw. This one has been operating illegally since May 1970 but just got a license. This is probably the unid station recently heard in New Zealand thought to be Norfolk Island. (Lars Ryden, visiting Philippines)

FIJI. Sigatoka on 1210 and Lakasa on 680 are due on the air soon. (SCDX)

INDIA. South India's most powerful station is to go on the air at Alleppey, Karala on July 17th; freq unknown so far. (Editor)

GUYANA. Radio Demarara's old call of ZFY (which they've never used over the air to the best of our knowledge) has been replaced by "8RG" which presumably will also never be used. Note DX trivia freaks... (Editor)

DX from the twilight zone

Phil Sullivan

One popular type of BCB DXing, and one that is generally at its peak in late summer and fall involves the receptions that occur around the times of sunrise and sunset, when either the receiver or transmitter or both are in twilight. This article is intended for the newer DXer, to help him better understand why he hears certain stations during these times and show him some tricks to aid him in logging needed stations.

The first point to be covered is: "Why this time of year?" Basically there are four main reasons: 1) It is during the months around the equinoxes that the times of SR and SS are most rapidly changing, resulting in the greatest discrepancy between the actual and FCC defined average times for these events. 2) Sunset tends to occur at a convenient time in the afternoon for those returning home from work or school. 3) Daytime ionization levels are getting less due to shorter days and lower solar altitude - this generally improves reception. 4) This is the traditional time of the year for MW DXers to resume their hobby again after a summer of better things to do than listen to distant thunderstorms.

What about the kinds of stations that can be logged by this type of DXing - what can you expect to hear at SR or SS that may be difficult or impossible at other times? Basically it can be said that these times give some of the best chances for logging domestic daytimers in the 100-1000 mile range and some quasi-daytimers (stations that greatly reduce power and/or restrict their pattern at night, e.g. WSJC-B10 50000/500 and WPLI-1070 50000/1000) as far away as 2000 miles. Also certain classes of foreign stations may be heard best during twilight.

Which are the best frequencies for SR and SS DXing? Most BCB channels will yield one or two possibilities at SR or SS - the best frequencies seem to be the regional and Canadian clear channels with a lot of U.S. daytimers - the author has had rather good results on 540, 790, 1330, 1580 and 1600. Particularly where the dominant station is in the midwest certain U.S. clear channels also give good results, e.g. 780 which often gives good reception of WBBD, WCKB, WAVA and EBVI all along the EC before WBBM fades in.

When is the best time to listen for sunrise skip (SRS) and sunset skip (SSS) signals? If you answer "at sunrise and sunset" you are only half right - there is more to it. Consider figure 1 which shows a typical curve of SR/SS times for moderate north latitudes for August thru November. (It is plotted for 42°30'N, 71°45'W - Leominster, Mass.) The discrepancy referred to above between the actual and average times for SR and SS comes about as follows: The FCC requires many stations to make some changes in operation at SR and SS - sign on or off, change power and/or pattern. However rather than have the stations follow the minute by minute changes in these times the FCC requires that the changes in operation be made at "uniform sunrise and sunset times (for) each month". This uniform time is the actual SR or SS time on the 15th of the month in 1946 in the center of the city of license, rounded to the nearest quarter hour. Fortunately SR and SS times haven't changed much in the last 25 years and the transmitter is usually near enough to the center of the city for our purposes here. Referring again to figure 1, we see that SS in Leominster on September 15 occurs at

1758 EST (note: all times in this article are EST unless otherwise noted) so the FCC defined SS s/off time for WLMS would be 1800 for all of September. On 9/1, actual SS in Leominster is at 1823 so when WLMS is signing off there is still 23 minutes of daylight to go - not a very good time to try and hear it. But come the end of the month things change - on 9/30 SS in Leominster is 1732 so on that date WLMS is on for 28 minutes after the sun has set and should be heard several hundred miles away if local QRM and other factors permit. On the next day, October 1, the s/off will come at 1700 - again making reception very unlikely.

The above is presented as an example to show the basic principle of twilight DXing: during the fall it is the last week or so of each month that will bring the best reception. The

first week of a month is usually a lost cause for SR/SS DXing while the middle of a month is sort of so-so, good for some stations, bad for others depending on how much rounding off had to be done to get an even quarter hour for their s/on and s/off times. It should now be obvious that during the spring, when sunrise is getting earlier and sunset later every day, that the first week of the months February, March, April and May are the times to listen at SR and SS.

So what's the best way to go about SR/SS DXing? If you are a beginner and have yet to try much of this type of DXing I would suggest parking your receiver on a likely channel and starting about 15 minutes before your own local SS listen as stations fade in as local SS occurs at their transmitter (approximately - the actual fade-in time depends on other factors too) and then sign off a few minutes later to be replaced by another station fading in - on a good channel as many as 8 stations may be heard, one right after another. For SR DX start 1-1½ hours before your local SR and listen as stations sign on and then fade out shortly thereafter.

After you've gained some experience with twilight DXing it is time to start a more systematic approach and try for the stations that you need. The first thing to decide is which is better for a particular station, SRS or SSS? Generally if the station is west of you SS will be the time, if east then SR. The next thing to do is determine the FCC defined SR or SS at the station. If you are fortunate enough to be able to obtain a set of SR/SS maps for the U.S. (published a few years ago by Ernie Wesolowski) you need only look at the map. If you can't get such a map there is still a way to do it - compute it from the definition with the aid of Table 1.

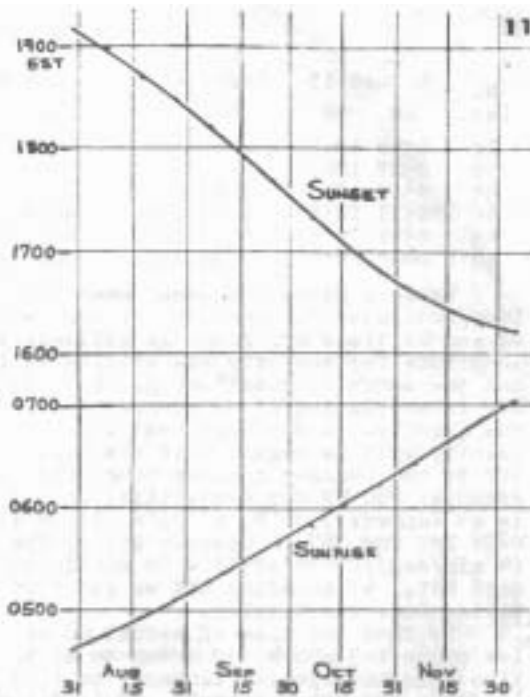


Figure 1

Table 1

N. Lat.	August 15		September 15		October 15		November 15	
	SR	SS	SR	SS	SR	SS	SR	SS
20	0540	1829	0547	1803	0554	1737	0608	1720
30	0527	1842	0544	1807	0602	1730	0624	1705
35	0519	1849	0542	1808	0605	1725	0634	1656
40	0511	1858	0540	1810	0610	1722	0644	1645
45	0501	1908	0537	1812	0614	1716	0657	1632
50	0448	1928	0534	1816	0621	1710	0711	1617

Table 1 gives the local mean time (LMT) of SR and SS at various latitudes for the 15th of the fall months. The FCC defined SR and SS times are found as follows: 1) Determine the latitude and longitude for the city the station is in. 2) Using the latitude and the month in question, go to Table 1 and find the LMT of SR or SS, interpolating if necessary. 3) Correct for longitude by adding the quantity: $(4 \text{ min/deg})(\text{West longitude} - 75^\circ)$ - note that this quantity will be negative if the station is east of 75°W . 4) Round off to the nearest quarter hour, the result will be in EST. For example: FCC SR for Evansville, Ind. for October - 1) Evansville is at (approx.) 38°N , $87^\circ30'\text{W}$. 2) Interpolating in table 1 we get 0608 LMT for 38° on October 15. 3) The longitude correction is: $(4 \text{ min/deg})(87^\circ30' - 75^\circ) = (4 \text{ min/deg})(12.5 \text{ deg}) = 50 \text{ min}$ giving 0658 EST. 4) Rounding off we get 0700 EST as the FCC SR in Evansville, Ind. for October.

To find the time of actual SR or SS on a particular date follow steps 1-3 above for dates on either side of the date in question then interpolate linearly to find the actual time. Continuing with the above example, SR in Evansville on 11/15 is 0730 so on 10/31 it would be $0658 + (16/31)(32 \text{ min}) = 0714$. All of which says that a DXer in the midwest wanting to hear WKY should try 820 between 0700 and 0714 on October 31.

The above techniques can also be used to determine when the QRM from certain stations will be gone, thus allowing a better prediction of optimum reception time.

Two other, more complete, tables of LMT of SR and SS are available and can be used in lieu of table 1; they are: The Nautical Almanac (available from the Superintendent of Documents, Washington, D.C. 20402 for \$4.00) and a set of tables published in DX News 4/26/69 (available from your friendly NRC reprint service).

What about foreign twilight DX? While this type of DX is primarily useful for logging domestics, certain foreign stations can also be heard at such times. One such group are the stations in the Lesser Antilles where in the fall and winter months SS comes at 1630-1645, about the same time as in New York and New England despite about 10° difference in longitude. This may make reception of stations like ORTF-640 Guadeloupe possible before any QRM fades in. (SS in Havana comes about 1 hour after Guadeloupe). Other stations to try for on the EC would be ZDK-1100, WWT-1000 and ZBVI-780. DXers in the west might expect to hear some Central American stations at this time of the year at SS.

The times of SR and SS are good times to add many otherwise difficult catches to your log - hopefully the above help you better understand and take advantages of the quirks that make twilight DX possible.

GEOGRAPHICAL PATTERNS IN BCB DX RECEPTION DURING PERIODS OF HIGH AURORAL ACTIVITY

*Gordon P. Nelson

I. Introduction

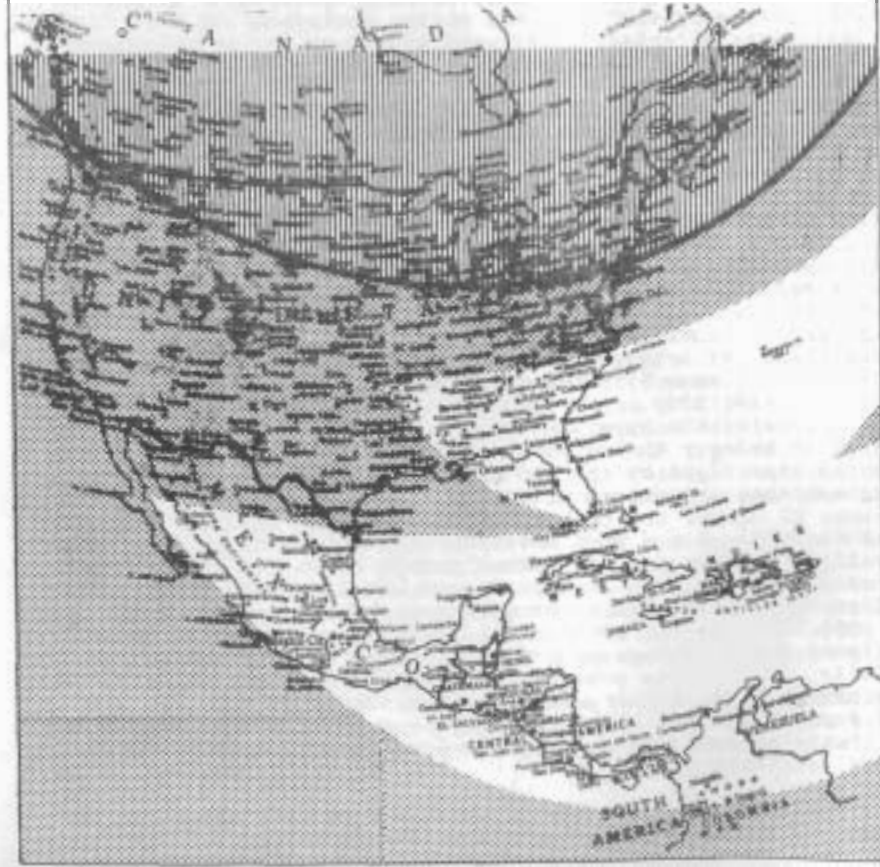
More so than on any other band, DX reception on medium-wave frequencies is greatly influenced by auroral storms and disturbances. For many years MW DX'ers have used the informal term "auroral" to describe peculiar nights which feature highly enhanced MW reception from the Southern U.S. and Caribbean areas, together with an almost complete loss of signals from stations to the north, west, and east. During an extreme "auroral night" DX'ers in some areas have even reported a complete loss of all signals except those from nearby locals and, strangely enough, a few otherwise rarely heard stations in the Deep South and Caribbean. Following the onset of a severe auroral disturbance, MW DX conditions can deteriorate so rapidly, in fact, that many a DX'er (this author included) has been fooled into switching off his receiver and giving up for the night in the mistaken belief that a tube had burned out!

In the previous DX NEWS articles describing our research into the relationship between auroral/geomagnetic activity and Transatlantic MW reception, we briefly touched on this striking and very characteristic pattern in domestic reception and explained that it was due to the southward advance of the "Auroral Zone". In this article we will explore in more detail just how auroral/geomagnetic activity produces the "auroral conditions" so important to the domestic DX'er, and show how the DX'er can actually take advantage of the aurora to add otherwise impossible-to-hear catches to his log. After explaining our theoretical model for the origin of "auroral" MW conditions, we'll compare the predictions of our theory with several hundred reported receptions (and nonreceptions) made by NRC members during the major auroral storm of March 23-24, 1969. In addition we'll compare the location and behavior of the auroral zone as determined by the reported receptions and our theory with related ionospheric measurements made the same night by the U.S. Air Force's network of satellite and ground-based research stations.

We believe, based upon several years of research and experimentation, that we now understand enough about the effects of the aurora on MW reception to explain and, to a certain extent, even predict MW reception patterns during auroral/geomagnetic storms. Now that WWV's hourly geophysical broadcasts can bring the DX'er an almost immediate measure of the A-index of auroral/geomagnetic activity, it's become possible for the DX'er to use auroral information to actually guide him in his DX'ing. To this end we will explain how the DX'er can prepare maps like Figure 1 for his own location to aid in logging and identifying stations during auroral disturbances.

A full technical version of this article will appear in the Journal of Geophysical Research sometime next year.

This map predicts the MW stations which will be rendered inaudible by auroral absorption on a night when the southern edge of the auroral absorption zone is located 180 miles south of Boston. The area with vertical shading represents the auroral absorption zone; the southern edge is shown by the heavy black line. The auroral model outlined in this article predicts the stations in the dotted areas will be absorbed by the aurora; only those stations in the crescent-shaped areas should be audible. The predicted reception areas agree with those observed here in Boston extremely well. Note that these crescent maps will predict the effect of the aurora only for the receiving site for which they have been drawn, in this case Boston. In the appendix of this DX NEWS article we will provide curves and instructions for the construction of similar maps for any particular receiving site desired.



II. A Model to Explain "Auroral Conditions"

As we indicated in our previous articles here in DX NEWS, the fundamental cause of "auroral conditions" is the unusual southward expansion of the auroral absorption zone from its normal location far to the north of the United States. The strong absorption experienced by a medium-wave signal passing through the auroral zone is due to the presence of large numbers of auroral electrons; these electrons are produced by the collision of highly energetic charged particles with the upper atmosphere. These charged particles fall or "precipitate" along the lines of the Earth's magnetic field which extend from the Earth's surface far into space.

During periods of low solar and geomagnetic activity (as during the years of sunspot minimum) this charged particle precipitation is limited to a slight "drizzle" of low energy particles falling from the Van Allen radiation belts into the classical "Auroral Zone" in the Far North,

Following certain types of explosive disturbances on the Sun, a shockwave of highly energetic solar particles may result in severe deformations of the Earth's magnetic field. In connection with such a magnetic disturbance particles with greatly increased energy begin to precipitate into the atmosphere and, due to their additional energy, they may fall along magnetic field lines far to the south of their usual quiet paths. The first equations relating the energy of a falling charged particle to its final path along the Earth's field were worked out around the turn of this Century; since then they've been studied and verified in great detail. Readers interested in more details should consult the references cited at the end of this article; in the meantime we'll give the following basic rule to be taken on faith:

▶ The more energy a charged particle carries (i.e., the greater its speed), the further to the south it can fall along lines of the Earth's magnetic field.

For any particular particle energy, the line defining the southward limit of precipitation should theoretically be a line of geomagnetic latitude on the ground. Due to the eccentric shape of the Earth's magnetic field (recall that the North Magnetic Pole is located some 980 miles from the geographical Pole), a line of geomagnetic latitude does not follow a line of geographical latitude.

Figure 2 shows several lines of geomagnetic latitude for North America. The heavier an auroral disturbance the more energy the falling particles will carry and the further to the south the auroral absorption will extend. Note that the eccentric shape of the Earth's magnetic field means the precipitation zone extends farthest to the south along the Eastern Seaboard. Thus, while Richmond, Virginia is on the same geographical latitude as San Francisco, as far as the aurora is concerned it's on about the same geomagnetic latitude as Seattle! Along the West Coast the zone is so much farther to the north that many WC DX'ers never really get to experience the full glory of a massive auroral upset...

Figure 2. From its normal location in the Far North, the auroral absorption zone expands and moves southward with increasing auroral/geomagnetic activity. Here we have shown the location of the auroral absorption zone for moderate, high, and very high levels of disturbance. (The curves are the intersections of three values of Gustaffson's 1970 corrected geomagnetic latitude with the 60 kilometer level)



It's most important to appreciate the fact that simply knowing the exact location of the southern edge of the absorption zone is not sufficient by itself to determine just which stations will be absorbed by the aurora at a particular DX'er's location. This is because even the most powerful auroral particles falling into the atmosphere rarely penetrate to depths within about 35 miles above the surface of the Earth. Below that level there is no significant MW absorption.

Were the auroral absorption to extend all the way down to the surface of the Earth, the job of determining just which signal paths would or would not suffer from auroral zone absorption would be trivial: any great circle signal path from transmitter to receiver passing north of the edge of the zone would be absorbed, period!

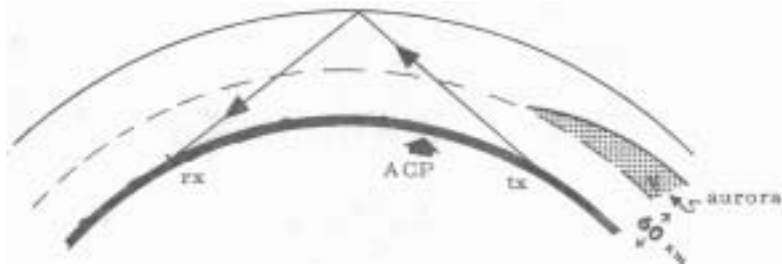
But the presence of the "clear" region underneath the auroral absorption means that it is possible for some signals to skim in under the auroral absorption at low angles and thus reach the receiver unscathed.

Therefore we need to know something else besides the actual location of the auroral zone before we can say whether or not a particular signal path will be absorbed or not - and this is where the auroral control point comes in. The auroral control point relates the angles of possible signal arrival to the location of the auroral zone, thus taking into account the possibility that a signal may skim under the aurora through the absorption-free region.

Since the auroral control point is really the key to understanding "auroral conditions", we'll try to make it as clear as possible. While it's easy to visualize with the aid of a three dimensional model, unfortunately we'll have to limit ourselves to two dimensions in Figure 3 since that's all our printer can handle... Beyond the range of a MW station's groundwave signal (a few hundred miles typically; roughly the daytime range of the station), all reception takes place by means of skywave signals reflected back to Earth from the reflecting layers of the ionosphere.

MW signals are reflected from two levels at night during an auroral disturbance: the night E layer at a height of about 110 kilometers (about 68 miles), and the nighttime F2 layer at a height of about 400 kilometers (about 250 miles). [Because all ionospheric heights are expressed in kilometers by long tradition, we'll stick to convention; this will make cross reference to other articles and texts much less confusing. Furthermore the layer heights which we will use may seem a bit high in comparison to the values commonly used in the standard textbooks and references; this is because these layers move to higher-than-normal levels during a major auroral disturbance. The actual reflection heights are routinely measured 24-hours a day by the Air Force using a special type of ionospheric radar called an ionosonde; the values which we will use in this article are actual height levels measured from a site near Boston on 3/24/69.]

Figure 3. The top figure shows a typical skywave signal being reflected back to Earth from the ionosphere and arriving at the receiving site. The point below the intersection of the signal path and the level of lowest auroral absorption (60 kilometers here) is the AURORAL CONTROL POINT. As



long as the auroral absorption is located north of the ACP the signal will not have to pass through the auroral absorption even though the absorption is overhead at the transmitter location. If the auroral zone moves south far enough to reach the ACP, however, the signal will intersect the auroral absorption layer and be greatly weakened if not completely wiped out.



The exact location of the ACP depends upon the separation between the transmitter and receiver as well as the height of the ionospheric layer responsible for the signal reflection. Under normal auroral conditions the ACP may be as much as 500 miles south of the northern end of the signal path (the transmitter and receiver could have been interchanged in the drawing above).

Figure 3a shows a typical skywave signal path with a single reflection from one of the ionospheric reflection layers we've just mentioned. The lowest height of significant auroral absorption (which we'll take to be 60 kilometers) is indicated by a dotted line. THE AURORAL CONTROL POINT FOR THIS PATH IS THEN THE POINT ON THE GROUND DIRECTLY BENEATH THE INTERSECTION OF THE SIGNAL PATH WITH THE HEIGHT OF THE LOWEST EFFECTIVE AURORAL ABSORPTION.

In the first drawing the general level of auroral activity is low and the auroral absorption zone is located to the north of the auroral control point for this particular path. [We'll abbreviate auroral control point to ACP from hereon to conserve space] Thus, even though one end of the signal path is actually located underneath the auroral absorption, the signal path is nevertheless unaffected by the aurora because the skywave arrives at a low enough angle to pass under the absorption.

In the next drawing the auroral activity has increased and the absorption zone has moved southward. Since the absorption now extends south of the ACP, the signal must pass through the auroral absorption and will be greatly weakened if not totally wiped out.

The paramount importance of the auroral control point should then be obvious: if the ACP for a particular signal path is located south of the southern edge of the auroral zone, transmission along that path will not be affected by the aurora. If on the other hand the absorption extends far enough south to reach the ACP, the signal will be subject to auroral absorption. It's then clear why just looking at the location of the auroral absorption zone on a map like Figure 2 will give the DX'er only a limited idea of which stations will or will not be absorbed by the aurora - the possibility of low-angle paths under the auroral absorption is neglected! The ACP must be known in addition to the location of the absorption zone if the fate of a particular signal is to be predicted.

Let's take a real signal path as an example, say the path from KMOX in St. Louis to Boston. The length of this path, measured along the ground, comes to about 995 miles; for the possible skywave reflection from the F2 layer at 400 kilometers a quick calculation on the computer shows that the signal will arrive at Boston at an angle of 22° above the horizon and that the ACP is located some 86 miles down the path from Boston. On a particular "auroral" night we'll then expect KMOX's F2 skywave to be audible and unaffected by the aurora unless the auroral absorption extends as far south as the ACP, which is located near Hartford, Connecticut.

As we indicated earlier, nighttime reception may also occur as the result of reflection from the night E layer at 110 kilometers. Substituting this height into the equation gives an arrival angle of 4° and an ACP located 322 miles down the path from Boston. The ACP for the E-layer reflection is thus in a different place than the one for the F2-layer signal.

Since the E-layer ACP for this path is located south of the F2 ACP, southward auroral expansion will first black out the F2 signal; then, if it advances as far south as the E-layer ACP, the E-layer

reflection will go also. In this case the E-layer ACP is the most southerly of the auroral control points for the various reflection heights which may contribute to the reception of KMOX in Boston. Once the aurora has gone as far south as the E-layer ACP in this case, KMOX's signal must suffer auroral absorption * since all possible skywave reflections must traverse the aurora.

Because of the basic difficulty of identifying the type of reflection responsible for any particular reception (the night E layer is not always present), we'll take the most southerly of the possible ACP's to be the limiting auroral control point (LACP).

While we may not know for certain which reflection layer is involved in a particular reception, by locating the ACP's for all possible reflection modes and then selecting the one furthest to the south we can be certain that all possible paths are closed if the absorption extends as far south as the LACP.

In summary then our model to explain auroral-produced patterns in MW DX reception is built upon the following assumptions:

1. Auroral-induced absorption may be located as low as 60 km during high levels of auroral/geomagnetic activity. Below this height there is no appreciable absorption.
2. Nighttime MW propagation during auroral disturbances may take place via reflection from the night E-layer at 110 kilometers, the night auroral F2 layer at 400 kilometers, or both.
3. MW signals passing through the auroral absorption layer will be very greatly reduced in strength if not totally absorbed.
4. For purposes of simplicity we will assume that the south edge of the absorption zone is very sharply defined, that is, that signals which just graze the auroral absorption zone will experience full absorption.
5. Effective reciprocity exists on these signal paths, that is, the transmitter and receiver sites may be interchanged without any difference in the path absorption caused by the aurora.
6. For any particular level of auroral/geomagnetic activity, the southern edge of the absorption zone will lie along a line of constant geomagnetic latitude.

[* For long signal paths the possibility of propagation by means of "multiple hop" reflections must be taken into account. For the sample KMOX-Boston path the multihop ACP's would all be located north of the respective single-hop points; the LACP is still the one for the one E-layer hop. For the March 23-24, 1969 data to be presented in the next section we have included double skips in the determination of the LACP's.]

Based upon these assumptions, for any particular transmitter and receiver site we may then calculate the location of the auroral control point for the reception resulting from reflection from layers at any particular height. The auroral control point which is located furthest to the south is the limiting auroral control point (LACP). If the auroral absorption zone is located south of the LACP for a particular reception path the signal must be subject to auroral absorption since all propagation modes must pass through the absorption layer by virtue of the path geometry.

The LACP locations given in the next section were calculated on the computer with the equations given in Appendix 1 of this article. We have also presented several graphs in Appendix 2 which will enable the DX'er to determine the same information for signals heard at his location without the necessity of actually evaluating the equations.

III. The Great Aurora of March 23-24, 1969

In order to test our theory we have carefully gathered together all of the reception information reported in DX NEWS and DX MONITOR for the night in question. In many ways that particular auroral disturbance was ideal for studying auroral effects on the broadcast band. The disturbance spanned a Sunday night and Monday morning which had been preceded by a period of excellent MW DX conditions. Some outstanding domestic receptions were noted on the Sunday morning before the attack and quite a few members were prepared for an excellent Monday morning. The auroral storm hit very suddenly and hard during the daylight hours on Sunday the 23rd and persisted at a high level until about noon on Monday. Thus the entire darkness period on that date in North America featured extreme "auroral conditions". This was the morning of the KMAM-15 DX Special and many members tried for that particular test.

Beginning with sunset DX on Sunday night it was obvious that we were in the grip of a very severe disturbance. Bill Alisuskas in New Jersey reported many remarkable loggings of stations in the Kentucky-Tennessee area shortly after sunset, and the author in Boston logged the only Transatlantic of the period, Dakar-764, at 1835 EST. During the evening and MM hours quite a number of DX'ers tried listening but gave up in the belief their receivers were acting up. Those who stuck it out reported quite a number of unusual receptions, mostly from stations to the south; most important for us, many members made note of the absence of many of the static which are normally well heard such as the 50 kw NSP'ers. And, strangely, Pat Martin in Oregon reported reception from at least 40 Australian and New Zealand stations that MM!

East Coast DX'ers reported a general absence of the regular powerhouses such as WPTR, CBM, KDKA, WOWO, etc. Many otherwise rarely heard outlets in North Carolina, Virginia, Mississippi, and other Deep South states were heard on the East Coast that night, though, and the KMAM (Butler, Mo.) Test was widely heard.

On the West Coast the big EC 50 kw'ers like WBZ, WCBS, and KDKA were completely gone, as were all but a handful of Canadians. The

regular Midwest stations like WJR and WCCO were heard weakly on the West Coast, if at all, but the Texans, New Mexicans, Cubans, and Mexicans were in well. Jay Murley (Newport, Ca.) heard WPTF in Raleigh, N.C., and Don Kaskey logged WIBW in Topeka from West Sacramento. Latin Americans, especially the Cubans, Colombians, and Venezuelans were heard throughout most of North America except in a few locations far to the north. John Hoogerheide in Marquette, Michigan reported that only a handful of stations were audible the entire period, and that the entire band above 900 kHz was dead after midnight. John happened to be in a very important position that night by virtue of his northern location, and several of his brief receptions made before midnight are of considerable scientific interest, as is Waldon's reception of WPOP, Connecticut from New Jersey. We'll get back to these receptions later.

How do the receptions (and prominent nonreceptions) of that period compare with those expected on the basis of our model? While a general tendency for southern stations and paths is evident at a glance, many of the reported receptions are not so obvious. Should Northam have been able to hear Billings from Portland, Ore.? Could 40 DU stations have made it to Oregon even though WJR and WCCO were inaudible? And, most important of all, where was the auroral absorption located that night?

Figure 4 shows the calculated LACP for each of the receptions reported during the darkness hours from sunset on the 23rd until sunrise on the 24th. The map was made as follows. Each of the stations positively heard (tentatives have been eliminated) by the 40-plus DX'ers who supplied information was first checked against our transmitter antenna pattern book to eliminate receptions which could have been due to groundwave (this eliminated receptions of WABC in Philadelphia, etc.). The LACP was then calculated for each reception and its location plotted on the map as a dot. Our criteria for including receptions was conservative; if the DX'er reported even very weak reception compared to normal we still counted it as a reception even though there was obviously some auroral absorption.

Where do we expect these points to fall on the map? Remember the significance of the LACP: if the auroral absorption is south of the LACP for the path in question, skywaves on that path must be subjected to auroral absorption. Therefore, if a particular path was open on that night, the auroral absorption zone must have been located north of the LACP at the time of reception. If the assumptions of the model are correct, we expect the northernmost LACP's on the map to fall along a line of geomagnetic latitude which will then locate the approximate edge of the auroral absorption zone on that night!

The heavy line on Figure 4 is such a line of geomagnetic latitude (55° geomagnetic); it will be seen that the agreement is quite good. The author's reception of Dakar-764 should indeed have been possible, but TA's on higher paths should have been gone (they were). Mike Northam's reception of Billings should have been free of auroral absorption, as well as Pat Martin's 40 DU stations. The receptions from the West Coast of WCCO and WJR should have been marginal, since the LACP's for those paths should have been right on the edge of the zone (all reported very poor signals). The 5 brief receptions shown by stars were the result of a very special and rare propagation mode; these receptions will be discussed later.

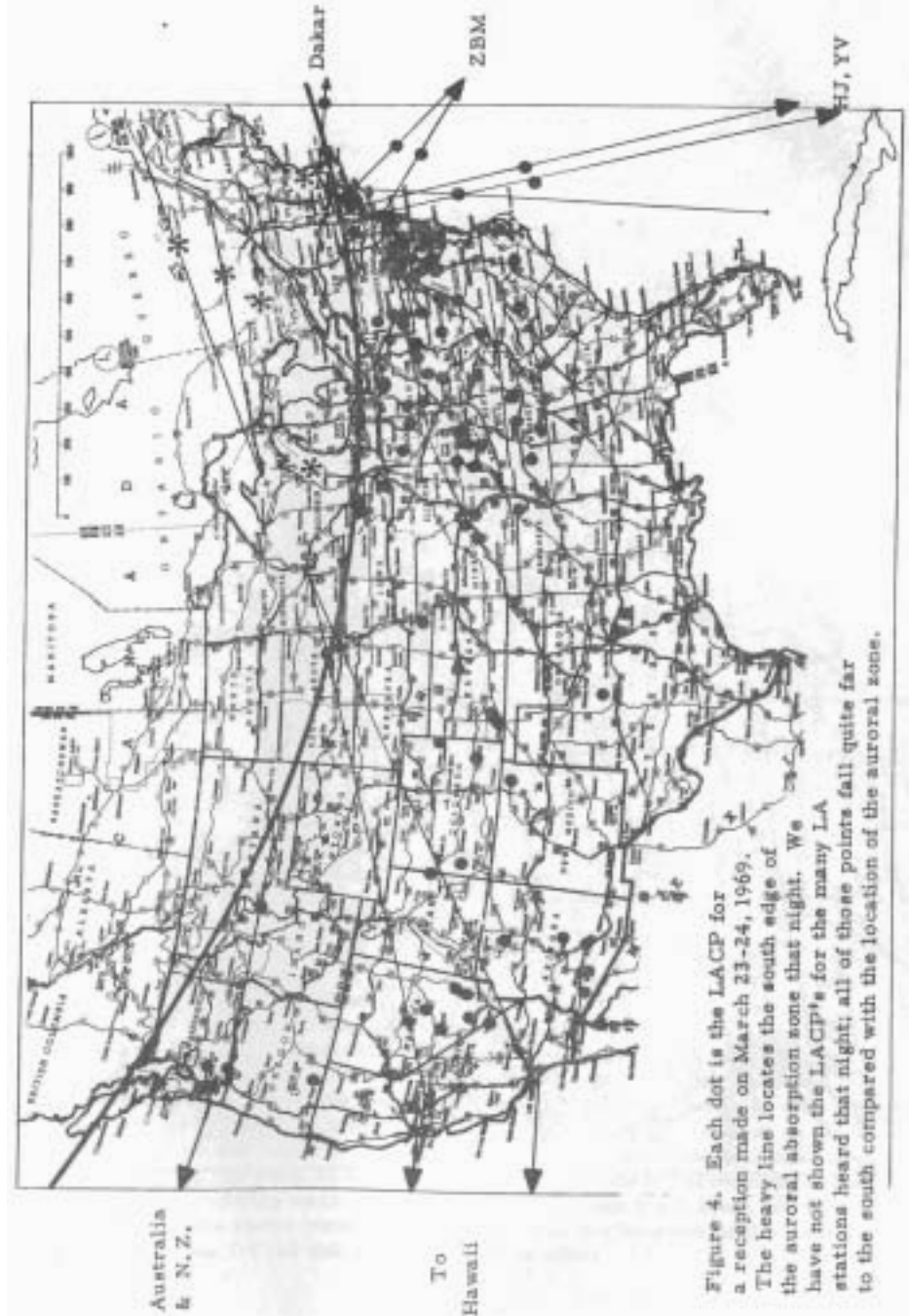


Figure 4. Each dot is the LACP for a reception made on March 23-24, 1969. The heavy line locates the south edge of the auroral absorption zone that night. We have not shown the LACP's for the many LA stations heard that night; all of those points fall quite far to the south compared with the location of the auroral zone.

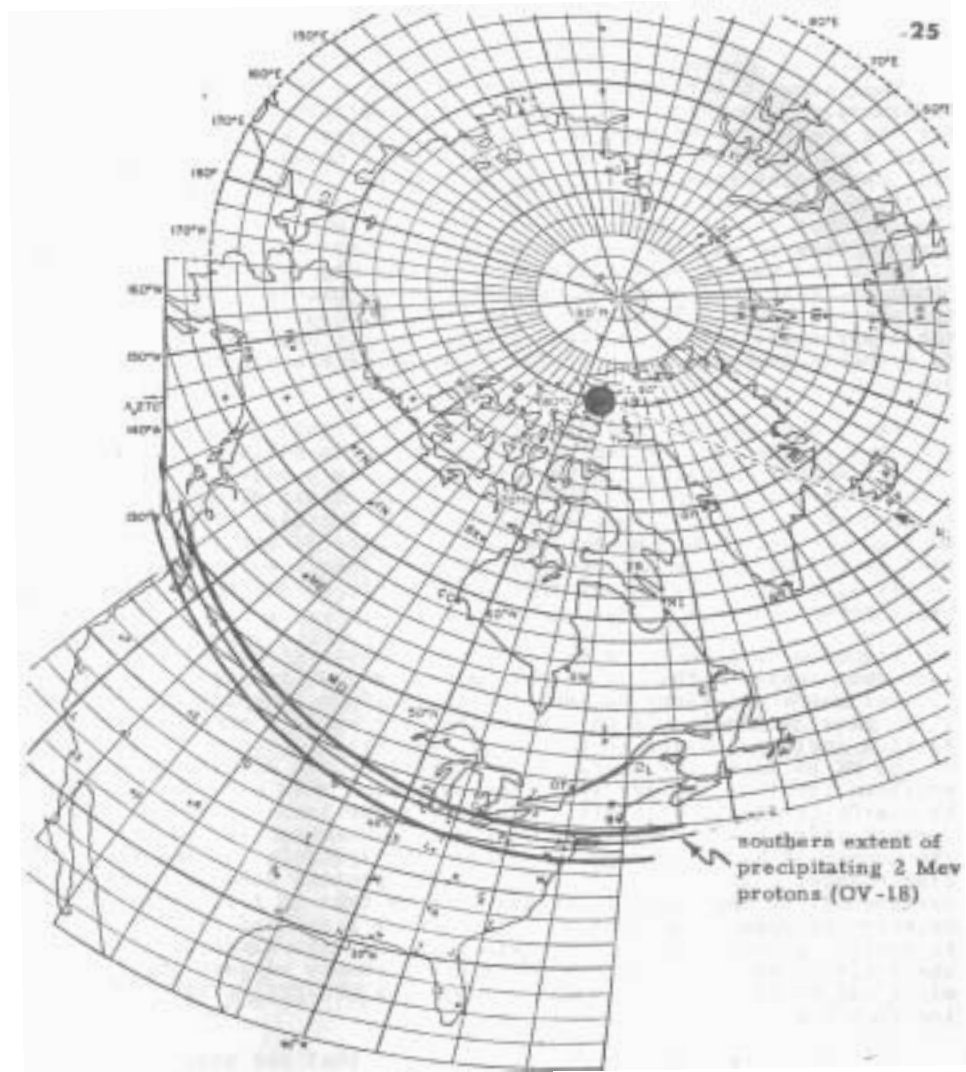
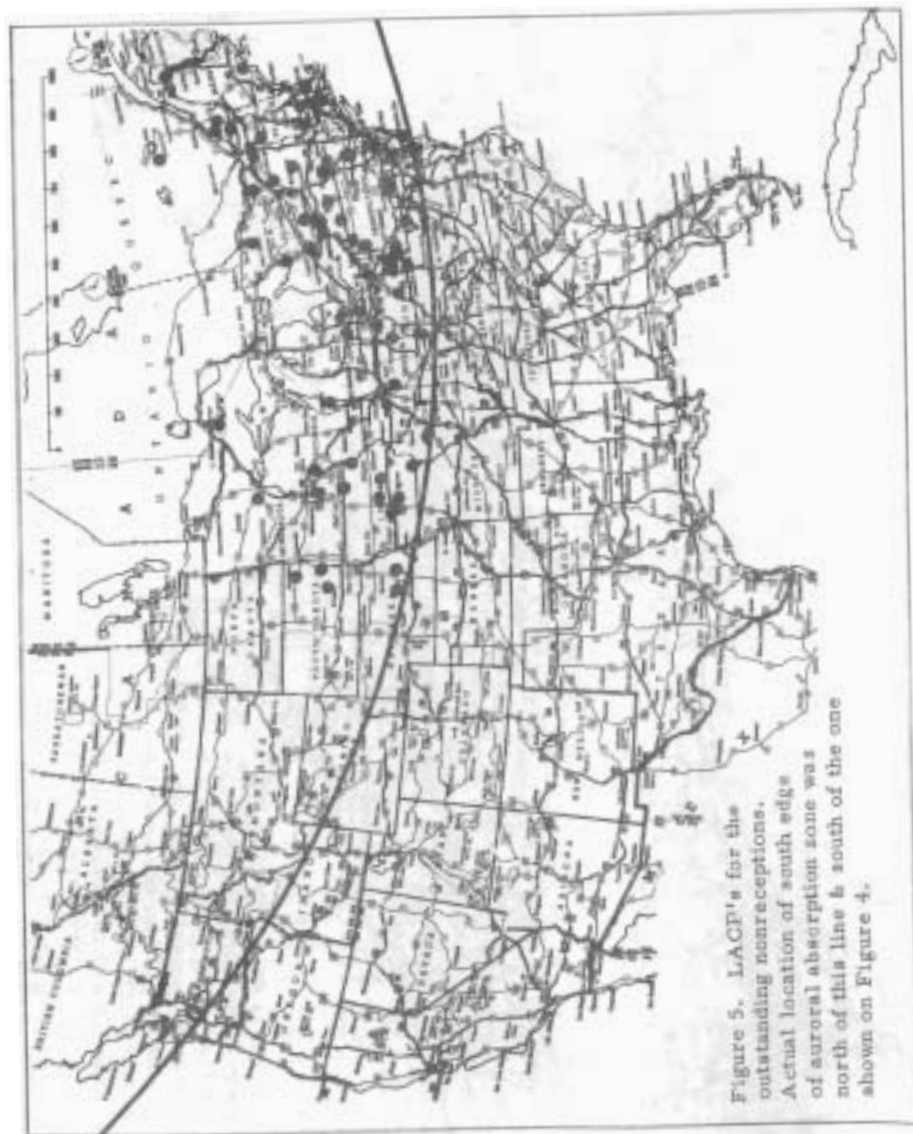


Figure 6. On this special map used for USAF auroral research, lines of geomagnetic latitude appear as circles centered on the heavy black dot near the top of the map. The first of the heavy black circles represents our determination of the southern edge of the auroral zone on March 23-24, 1969. The second heavy curve is lower limit of the possible zone location as we have determined from the LACP's for nonreceptions; our best determination of the southern edge of the zone on that night is then somewhere between these two heavy curves, probably nearer the top one rather than the bottom one (see text for details). The curve running between ours is the location of the zone as determined by the OV-18 orbiting research satellite.

What about the reported nonreceptions; can we get any useful information from them? In Figure 5 we have plotted the LACP's for the nonreceptions reported that night; these were regularly heard stations whose absence was conspicuous enough to make note of. Note that these points also fall along a line of geomagnetic latitude, though one further south than in Figure 4 (52.5°). The significance of the LACP's for the nonreceptions is a bit more complex than in the case of receptions. They are the points south of which the aurora will knock out all possible reception modes. Since at least some of the nonreceptions presumably resulted from the absorption at ACP's north of the LACP without propagation on the lower-angle paths, the zone defined by the nonreception LACP's is probably somewhat south of the location of the actual absorption zone.

Where then was the zone exactly on that night? Well, we can't tell exactly because we can't be certain of the reflection heights for the actual signals; furthermore the southern edge obviously has a somewhat "fuzzy" edge as shown by the WC WJR and WCCO marginal receptions. Our best determination of the location of the south edge of the zone over the entire course of the darkness hours is that it was perhaps a bit south of 55° and likely north of 52.5°. In all likelihood the actual edge moved a bit during the evening; we'll return to this point.

Figure 6 is a map showing our determination of the absorption zone once again. This is a very special map projection used in auroral research; lines of geomagnetic latitude look like circles - which does decidedly odd things to the geographical projection. We have indicated where we think the zone was located as determined by the MW DX data; the third curve represents the actual measured southern limit of the precipitating particles that night as observed by the OV-18 research satellite which was overhead during the auroral storm. The OV-18 was in a polar orbit and was counting the number of highly energetic protons precipitating during the disturbance. The cutoff limit for 2 Mev protons seen by OV-18 corresponds to the curve in Figure 6; note that it falls right between the upper and lower limits which we determined. In addition to supplying independent confirmation of our determination of the location of the zone, the OV-18 measurements suggest that it might not be necessary to spend \$18 million orbiting a satellite to locate the edge of the auroral zone...

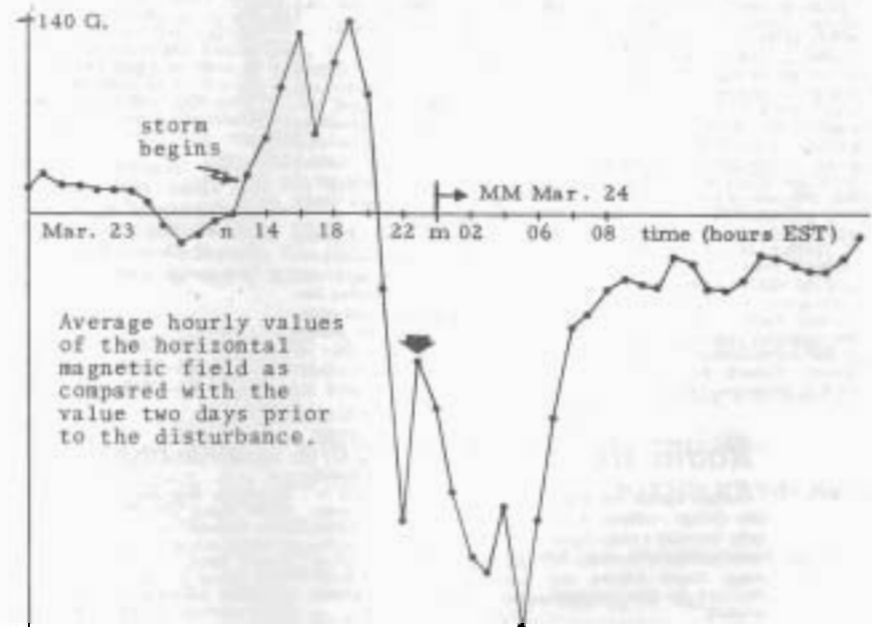
In summary then, it would indeed appear that our model to explain "auroral conditions" in MW DX reception is supported by the reception reported during one particular auroral disturbance. For the DX'er it means the possibility of predicting which areas will or will not be audible for a particular level of auroral activity - thus aiding greatly with unidentifieds, etc. From the other point of view, it means it may well be practical to use MW reception data to provide scientific information on the location of the auroral zone of a sort that is presently difficult to obtain.

IV. Reception by Auroral "Sporadic E"

The seemingly impossible receptions indicated by stars on Figure 4 are of particular interest. While the rest of the band was

effectively completely dead, Hoogerheide was surprised to note several unexpected strong signals prior to midnight. CKCV-1280, a 5 kw station in Quebec was heard at 2230; CKBL-1250, 5 kw in Matane, Quebec at 2240; CFLV-1370, 5 kw in Vallyfield, Quebec at 2300; WTTS, 500 watts in Bloomington, Indiana at 2300; and CFGT-1270, 1 kw, in St. Joseph, Quebec at 2310. After a period of brief strong reception, the band again went thoroughly dead again. These odd short-term receptions are shown with stars at the LACP's on Figure 4. One similiar peculiar additional reception was reported at about the same time: WPOP, 5 kw in Hartford, Conn. was noted briefly at 0000 on 1410 kHz by Frank Waldron in New Jersey; it too rates a star on Figure 4. These 6 receptions have several things in common: all occurred at about the same time; the frequencies are not too different; powers are in the low-to-medium range; and all of these receptions were from areas not heard during the rest of the auroral period.

We can discount the possibility of a temporary northward retreat of the auroral zone right away; had this been the case there would have been hundreds of additional paths opened for DX'ers over a very wide area of the Northeast. If the zone had gone back as far north as the LACP's for the Hoogerheide receptions from 2230 to 0000, the band would have returned pretty much to normal for all of us; in fact it didn't. What then could produce just a handful of receptions during a restricted period of time in a somewhat limited geographical area? In order to answer this question we will have to examine more carefully the evolution of this particular storm. The following graph shows the disturbance to the Earth's magnetic field produced by precipitating particles above Weston, Mass. (data courtesy U.S. Air Force). Note that the storm began about noon



[concluded next issue]

Radio Asks Red Sailor Defection

BOSTON (AP) — Soviet sailors in the Atlantic have been told in radio broadcasts in Latvian that the United States is ready to a policy of granting asylum to political defectors.

A translation of the message was published today by a Boston newspaper, which said 14 East Coast radio stations have broadcast it under the auspices of the Eastern American National Council in New York.

The newspaper said the stations were WGBH in Boston.

The newspaper said the broadcast was legal and done with the approval of the U.S. State Department.

It provided this translation: "Members of the Soviet fleet in the Atlantic: Recently, Simas Kudirka, a Lithuanian comrade of yours, jumped off the Soviet Guard ship 'Vigilant' and requested political asylum."

The American captain and admiral turned him back. They have been punished for this blunder and dismissed from their posts. The American people, press and President were outraged and President Nixon ordered that in the future such requests be immediately brought to the attention of the White House staff and the Immigration and Naturalization Service.

"The President reaffirmed the United States policy of granting political asylum. Four men who jumped from an East German ship near Florida have been granted asylum."

Germans Converting Russian Trawlers

COLOGNE, Germany, July 11 (AP)—East German dockyards are converting Soviet trawlers into pirate radio stations the Russians plan to operate in the North Sea and the Mediterranean, a West German newspaper said today.

Rundschau Am Sonntag from Cologne said the Russian trawlers, converted in Baltic Sea ports, will "stay maneuverable to make it more difficult to locate their positions." It added that their programs are designed to "confuse"

Western navies.

Radio plans list of VD defaulters

BIRMINGHAM, England — Radio Birmingham one of Britain's new local stations, plans to broadcast case numbers and descriptions of venereal disease patients who have failed to report back to local clinics for treatment.

Manager Jack Johnson said any listeners who protested would be told that VD was "an increasing factor in the life of this country," and that the station regarded it as a duty to help the health authorities.

Radio station at Rochdale found legal (ONT.)

Charges against two Rochdale College residents of illegally operating a radio station were dismissed yesterday by Judge Joseph Addison, who described the case as "small potatoes."

Michael Lennick and Paul

Murton were charged with establishing and running a radio station without a licence after four RCMP officers and a Department of Communications inspector seized their equipment in a sixth-floor Rochdale apartment on March 4.

Judge Addison held that

broadcasts from the station, which began last Nov. 15, were intended for Rochdale residents only and not for the general public.

He likened the station's operation to the use of an inter-communication system in a private home.

Roadside Radio?

Since most automobiles are equipped with AM receivers, the Los Angeles Department of Airports wants to use a low-power transmitter to advise motorists of parking space, aircraft arrivals, and similar information at the L.A. International Airport. The FCC has granted permission for a 30-day test involving a 10-watt AM transmitter operating on 550 kHz along a section of the Century Blvd. approach to the airport.

(From 7/71 BM-E)

"VOA" to Stay Five Years

Japan told the United States Wednesday for the first time that the broadcasting facilities of the "Voice of America" (VOA) in Okinawa would be allowed to continue operating for a provisional period of five years even after the islands revert to Japan next year, Foreign Ministry sources disclosed Thursday. The sources said, however, that Japan has yet to work out a final proposal on how to deal with the matter in the reversion accord. Japan's attitude of possibly agreeing to the continued presence of the VOA facilities was expressed at a working-level meeting between Bunroku Yoshino, director of the American Affairs Bureau of the Foreign Ministry, and Minister Richard Sneider of the U.S. Embassy—Yomiuri.

DOMESTIC
X
DIGEST



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Greetings and salutations. Once again DDXD emerges, hi. Due to our unexpected one-month hiatus, we have a fairly good amount of material on hand, even tho' we can't spell, hi. Firstly, tho', a few notes. The next UPDATER will appear in the next issue, which should appear about convention time, I think. In this issue, we'll have another r/c list supplement, and all subsequent changes in that will be held pending a decision as to when to issue the 1971-72 list, and as to how. But, nonetheless, here we go. We'll start with r/c's hrd, and, due to the time lapse here, I'll list by months hrd.

r/c's

- APRIL; 1st WM: WGRA-790; 1st FM: WAMY-1580; 1st SA: WSHN-1550; 2nd MM: WCAZ-990, KRGF-1310; 2nd Tu: WCVA-1490; 2nd WM: KDTH-1370; 2nd TH: WIDG-940; 2nd FM: KOKX-1310; 3rd MM: KEPS-1270; WOKZ-1570; 4th MM: WCLB-1480, WXCL-1350; 4th SA: WABD-1370.
- MAY: 1st MM: KVAC-1490; 1st SA: WEZJ-1440, WBRN-1460; 1st SU: KCII-1380; 2nd TH: WPCF-1430; 2nd FM: KFJM-1370, WNSL-1260, WLIQ-1360; 2nd SA: WCCR-1580, WAFI-1560; 3rd MM: KXKL-1450, KVOP-1400; 4th MM: KTHS-1480, WRAR-1400.
- JUNE: 1st MM: KDLM-1340; 2nd SA: WCCR-1580, KBRB-1400; 2nd SU: KECJ-1360; 3rd MM: WTZE-1470, WDIC-1430, KWLA-1530, KXKL-1450; 3rd TU: WEAS-900; 3rd TH: WNMT-1520; 3rd FM: WLYB-1250; 4th MM: KLEO-1480, KTHS-1480, WTOP-1500, WCBG-1590, WHUN-1150, WEVE-1340, KPUR-1440, KGIW-1450; 4th TU: WABH-1150; 30th of Mo.: KGMO-1550
- JULY: 1st MM: KDXU-1450, KVAC-1490, KDLM-1340, KNOX-1310, KBUM-1450, WFTC-960, KBT-1340, WFLB-1380, WGHN-1370, KQIK-1230; 1st TU: WIOB-1480, KWRF-860, KVOL-1330; 1st WM: WGRA-790, KJSK-900, WEAG-1470; 1st TH: WLO-1480; 1st FM: KFVS-960, WHBG-1360, WWBZ-1360, WSLT-1520, KVCK-1280, WAMY-1580; 1st SA: KOLY-1300, WBRN-1460, WSHN-1550; 1st SU: KCII-1380; 2nd MM: WELI-960; 2nd TU: KCHR-1350, WANZ-1380, WPUV-1580; 2nd WM: KDTH-1370, WHUB-1400, WFLI-1070, WMOX-1010, WBEJ-1240; 2nd TH: WIDG-940; WOTR-1370, WLOP-1370; 2nd FM: KOKX-1310, WNHJ-1580; 2nd SA: WCCR-1580, KJEF-1290; 3rd MM: WDIC-1430, KWKY-1150, KWLA-1530, WOKZ-1570, KGPC-1340; 3rd TU: WPED-810, WGAP-1400, KPLC-1470, WSGO-1440, WEAS-900; 3rd WM: KPFL-1420; 3rd TH: WJZM-1400, WMSL-1400; 3rd FM: WBBK-1260, WLET-1420, WFOY-1240, WLYB-1250, KWAY-1470; 4th MM: WCBG-1590, WCMS-1050, WNAK-730, WTON-1240, KLMS-1480, WFEC-1400, WXCL-1350, KGIW-1450; 4th WM: WHOM-1480; 4th TH: KRGI-1430; 4th FM: KPOS-1370; 4th SU: KCKW-1480; 30th of Mo.: KGMO-1550. (also - out of order: 3rd SA: KSRC-1290).

CHANGES

- + 790 KKON-HA CP: 5000 U1 +700-KBYR-Ak-1400
- + 850 WWJC-MN CP is on.
- 1070 KPDI-KS Lost one tower in tornado, currently running 250 Non-DA nites until repairs completed (W.A. Jeffrey)
- + 1140 CP -WA Yakima, 98902; 1000 D1; 915 So. 31st Ave. (5/26)
- + 1190 KATQ-MO CP is on (W.A.J.)
- + 1220 WEIC-IL CP: 1000/500 U4 (6/3) +1270-KBYR-Ak-delete
- + 1270 WWJC-WI DELETE
- + 1340 KVIC-TX CP: 1000/250 U1 (6/9)
- + KPQE-AZ CP: 1000/250 U1. This apparently a re-assignment of previously deleted facility.
- + 1370 KRSD-SD Will go 24 hrs. in fall (Dave Lewis, KC Mo.)
- KPCO-CA Is back on air again.

30

+ 1400 KILE-TX CP: 1000/250 U1 (6/9)
 + WHDF-MI CP: 1000/250 U1 (6/2)
 + WKDY-SC ex-WHCQ
 + 1430 KLO -UT CP: U2
 + CPFB-ON CP is on.
 + 1450 EPSE-CA Returned to air 6/14, SCH: 24 hrs.
 + WJTB-FL CP: 1000/250 U1 (6/2)
 + EOMB-CA CP: 1000/250 U1 (6/2)
 -XX1430 WJNR-NJ Finally off air after Supreme Court refused to hear case appeal. FCC has granted the City of Newark temporary operating authority for 120 days effective 7/21. As of 8/1, stn. still not re-activated. Speculation is that either city will buy stn. or a new buyer will take over late fall (RJE)
 1470 KVIN-OK Station denied license renewal. Ordered off 7/31, probably will appeal and stay on a la WJNR et al.
 1530 KWLG-OK Same info as KVIN-1470.

call applications

850 Ridgcrest, Ca. req. KZIQ. (To my knowledge, and per all sources, this is only an application or initial decision, not a final granted CP.(RJE)
 1000 WJTB-FL req. WRYZ
 1340 WOVE-WV req. WXEE
 1490 WMDN-MI req. WMPX
 1540 CP -HA req. KISA
 WLEF-MS req. WSWG
 WIOK-IL req. WACK
 1500 KOSG-OK req. KOEN

more changes

1110 WGRG-MA ex-WIOM (CP -Pittsfield, not yet on)
 1440 WBJW-FL ex-WAHR

sunset & evening

800 WCCM-MA Hrd ID, mx 1945 7/24 (Page Taylor, Butler, N.J.)
 980 WCAP-MA Hrd w/ mx 1930 7/24 (PT)
 1000 WRAR-VA SID alone 2010 7/22 (PT)
 1010 WCNL-NH c&w o/ WINS w/ clr ID 2015 7/3 (PT)
 1130 WCBX-NC Hrd w/ ID w/WNEW 7/24 2030 (PT)
 1280 WSUX-DE Hrd w/ Top 40, TC, ID 7/5 2021 atop freq. (PT)
 1430 WHIL-MA Hrd, taped @ 2015 s/off 7/27 (RJE)
 WIVE-VA Hrd relig. mx, ID "WIVE, Christian Radio" 2020, then good s/off annot. 2030 7/27 (RJE)
 WTTT-MA Hrd ID in s/off annot u/WIVE 2029 7/24 unkn.
 WNAV-MD Almost never hrd here, but, as w/ above, WJNR off, hrd clr ID 2031 7/24. (RJE)
 1480 WADR-NY Hrd atop w/ WHOM nulled w/ c&w, Southern DJ 2010 to 2035 and beyond 7/28 (RJE)
 WCFR-NY Hrd w/ clr s/off w/ nulled WHOM & WADR 2029 7/28 (RJE)
 1600 WTYM-MA Hrd w/ ID, ads for Springfield to 2030 s/off 7/28 (RJE)
 WPCR-NY Atop w/ good mx to 2043 7/28 s/off SSB (RJE) Easy to s/off w/ gd mx 7/22 (PT)
 WKEN-DE One of my most-wanted finally broke thru just after WPCR s/off w/ ID 2045 7/28 (RJE)

NOTES AND STUFF: WABC's spurs on 680 & 860 really got nasty around mid-month, so, after Bill Alisauskas & Page called and got nowhere, I lied a bit to get to the right man, who told me their modulation monitor was shot, and it'd be replaced Sun. 7/25. MM 7/26 saw spurs still there, but much diminished and no longer audible on car rx. He (Wynn Lloyd) said he expected that even so they'd

have to set up more wave-traps for those freqs. if spurs persisted. He also asked that any other abnormalities in their signal be reported to him at the stn as I hrd them, so there is still hope, hi. As to the AXR of convention fame, he says that there are already some 26 frequencies wave-trapped for spurs but that they still need more, hi. I'll second that. I also asked him to check the XR logs for malfunctions the time Al Merriman hrd 'em on 1155A. If MM 8/2 shows spurs still there, another call will be in order, ha. Now back on to DX:

midnight to sunrise

570 UNID Hrd w/ cl mx u/WMCA, nulled SE-WV 0110-0200 7/6, not WFAA or WACL. (Eric DiRiccio, Pgh., Pa) ** No ideas, except maybe an LA -RJE
 580 CKAP-ON Hrd testing w/ DT b4 s/on 7/7 from 0523 (ED) ((Youngstown
 900 WLSI-KY c&w mx & local spots 0642-48 well o/CHML-WNYN (Wes Boyd, Oh.))
 WAFB-VA TT 0212-0222 6/28 atop CHML (Boyd)
 930 WLLL-VA Well o/WEOL-WREN 0715-0730 6/18 (Boyd)
 unID 0004-0010 o/u WREN-WKY mess w/ MBE instr. standards, no ID's, but assume WEOL playing again. (Boyd)
 940 WCPG-Me ET-OC w/ ID 0140 7/20 (Page Taylor, Butler, N.J.)
 960 WBOG-MD S/off 0008 w/ SSB, off air 0011 o/WFIR (Boyd) (Boyd)
 WFIR-VA MM SP seems to be 0200-0500, 6/21 was 3rd week so noted.
 WELI-KY Hrd 0100 s/off u/WFIR 7/2 (ED)
 WPRT-TX C&W mx, local spots 0626-34 well o/ WWST-WFIR (Boyd)
 1070 WAPI-AL TT 0225-0230 o/CHOK-WIBC but u/noise level, hi 6/27 (Boyd)
 1150 WGOV-TN S/on SSB mx, top 40 0458:30-0510, no sign of usual WCRK, maybe a new WCRK sked?)Boyd(
 1230 KOZA-TX Picked out ID in R8 0300 6/19 (Paul K. Hart, Ft. Worth, Tx.)
 1270 WXYZ-MI Noted off 0400-0520 6/21 (Boyd)
 WLBR-PA Hrd w/ mx, MoR 0503-0512 well o/KFJZ,CJCB. (Boyd)
 WUOK-MD Top 40, promos, ID, local spots 0650-0702 o/WILE-WXYZ for great tape. Thought was c&w ... (Boyd) ** Seems many of the stns. once c&w are going back to top 40.... whilst ERC will hate it, I much prefer the top 40, hi= RJE
 CJQM-MB Hrd in WXYZ's null 7/1 0105 (ED)
 1280 KLCO-OK Copied 0610 7/8 and again 0627 7/13 for a newie only 200 mi. away (Hart) (Boyd)
 1300 WSYD-NC c&w mx, local spots, PSA's etc., 0631-36 o/WWCH-WERE. 6/26
 WKCY-VA Well o/ WERE -WWCH 0655-0710 w/ mx & c&w (Boyd) -this 6/18.
 WMTN-TN Well o/WKCY-WERE-WWCH 0706-08 w/ c&w & local spots 6/18(Boyd)
 + 1320 WJAS-PA S/off SSB 0200 6/28, change SP. (Boyd)
 + 1340 KSEK-KS Copied s/off 0200 7/12 (Hart)
 + KSET-TX Copied 3 ID's betw. 0200 & 0400 7/12, is now NSP per stn (Hart) w/ Cincy Reds BB 0045-0105, ran PSA's in place of spots, way too much WHOT splash to ID 7/24 (Boyd)
 1380 WTVR-VA Got short log 0110-0115 w/ Coke spot local PSA, jx well u/WAOK KWK etc. 7/24 (Boyd) (Hart)
 + 1400 KXIV-AZ Hrd wk ID 0305 then SSB 0310 6/28. SP per stn is 0300-0800.
 + KYUC-AZ Hrd wk s/off 0400 6/28 (Hart) (Hart)
 + KTFS-TX Hrd s/on 0600 6/28, sked per stn is 0600(0700)-0200(0100)
 1430, WNAV-MD Finally hrd w/ 0105 s/off u/WJNR 7/5 (ED)
 WIL -MO Testing daytime facilities 0405-0415 MoR & standards w/ only 2 ID's 0406:10 & 0411:30 well o/WIRE-WLAK 6/21 (Boyd)
 + 1450 KAYC-TX Copied ID 0300 7/12, now NSP per stn. (Hart)
 KCYL-TX ID 0633 7/12, new log only 130 miles away. (Hart) ** Out there 130 mi. is nothing anyway - hi - my closest unheard is 55 mi. WHOL-1600=PA ...-RJE
 1480 WYDK-NC Hrd 0013-0120 w/ standards, big bands, & 1940's mx, many IDs testing 1kw & .5 kw XRs on 7/24 (Boyd)

- 1550 WSHN-MI Hrd w/ ET 0115-0215 7/3. f/c followed. (ED)
 KEJQ-MD Hve hrd w/ K' BB as late as 0300 when KE plays on WC (Boyd)
 WKYE-TN ET-OC-TT, etc. w/CBE to 0110 a/off, then w/KGMO r/o w/ ID
 0117 as "WKYE, Bristol Tennessee-Virginia" 7/30 (RJE)
- 1560 WDOG-GA ET-ex off 0106 7/25 (PT) -RJE
 WTRQ-MC ET-OC w/ ID 0012 7/4 (PT) ** Seems they always test Sun AM
 ***** 1580 WJDI-PA Pirate anno'd as in Conshohocken Pa (a N. Phila. Suburb -RJE)
 on only 0205-09 w/ complete a/on, comm'l for Acme Packaging
 & storage, 428 Ebony Rd., phone 299-0900 ((which, by the way
 is the same number used for the station anno'd as WJUM-1550
 Harrisburg hrd by ERG & MDeL earlier this summer -RJE)) then
 w/off (PT) this on 7/3. Hrd het 1569A about sunset 7/5, loop-
 ass, called friend in Philly area to check, and it looped
 N. Phila. for him too..... (PT)
- * 1590 WVDH-ME Was one w/ very distorted audio 7/1, called, sed had IR prob-
 lems ((sounds like an understatement -RJE)) w/ 5k XR. 1k IR
 was clear. Really killing WAKR. (Boyd)
- ++++ KEND-TX Copied 2300 7/4 whilst visiting in Albuquerque. Must be call
 change from KEND. Still not hrd in Ft. Worth, tho' (Hart)
 *** I've no record of the change in call, but info rec'd here
 from all change sources has been nearly nil, so will enter
 it now -RJE
- WGGE-VA ET-TT 0223-0230 o/u WAKR-WETT. 6/28 (Boyd) ** They seem to
 ET a lot h4 and after their sked r/o, which, I believe was
 also that AM, and, incidentally, they stick to EST for r/c.
 -RJE.

MISCELLANEOUS RANDOMNESS.....

CE Harold Baumann of WNNJ-1360 writes last f/c was 6/23 (no time stated)
 next will be 9/23. Will get times from him soon. Also, I logged their
 last one 3/22..... is quarterly at whim of monitoring co, he sez... delete
 as regular from all lists, hi.

AM FREEZE LIFT SEEN: per Broadcast Engineering 3/71 : New AM's will be
 granted only in special cases, but emphasis will be placed on improvements
 in existing services, and service to ethnic minorities. (Note my earlier
 comments on WJUR-1430, which, as of 8/1-2 is now AN SPU.....

Per same source but 2/71 issue, CIRC will now permit 40-watt private stns
 on 1450 kHz. Approved application was for 2 yrs. on an experimental basis
 only.

There's for now, so 73 until next time - RJE

RJE

FE: ONE major change in format for next season is effective this issue:
 that is the listing of r/c's by months heard. ANOTHER change will be
 the inclusion of all SUNRISE material in the "A" (Mid-SR) section.
 The "B" section, formerly SR & Day DX will be only for DAYTIME DX.
 DAYTIME will be defined (arbitrarily, of course, hi) as 0900 ELT
 thru 1600 ELT. Also, in the absence of sufficient items for the
 "C" section, "Sunset & Evening", items of 2200 ELT & later will be
 lumped in with the "A" listings for convenience of both the editor
 and, hopefully, the users of BMDX. Your editor still welcomes any
 helpful comments or suggestions with regard to format, etc. of this
 column. - RJE

PAUL K. HART - 2105 Muse - Fort Worth, Texas - 76112

33

This has been a very different Summer season so far. Usually the
 NCB falls apart here about the first of April, with the noise level reaching ear-
 splitting proportions, and signals fade into non-existence. This year, results
 were decent through the first of May. I had 19 new logs in the month of April,
 and copied KPOK-1330 on 5/2 for my second Oregon log in six weeks after three
 years of trying for that state without result. Subsequent logs in May include
 WLOL-1330 5/16, KPIN-1260 (IRCA TEST) on 5/17 and KEL-1260 on 5/17. During the
 latter half of May and the first half of June, signals here were very weak, with
 the usual high noise levels. About mid-June the noise decreased & I was able to
 log KOZA-1230 & KELD-1230 on 6/19. A real bash NM 6/28, logging KQIV-1400 (RS),
 KTNM-1400 testing, KNUC-1400 a/ f & KFFS-1400 a/on. All the while WJHO & KPSU
 were avail-ble on the frequency. I don't do much better than that during the
 Winter! Really long-distance loggings do seem impossible; it takes until about
 3am here for KRX-1070 to squeak up to a readable level while during the Winter
 they are usually at least 10 o/9 by then. Shorter range stuff though (about 600
 miles or less) is reasonable, especially E, W, or S. Northerly signals are very
 poor, but in many cases this helps to clear the frequency for stations impossible
 because of the din in the Winter. So far in July, I have KATS-1240 on 7/7, KLCO-
 1280 on 7/8 & WHEL-1260 on 7/9. Most of this is from tape monitors, and many
 nights thunderstorms make any results impossible. On the other hand, the residu-
 al noise level has been reasonable and if it stays down, I will be able to do
 some more serious DXing this Summer. Details on these logs and phone calls about
 skeds and tests are in p00d.

HARRY HELMS - 115 West LeRoy Street - Fort Mill, South Carolina - 29715

Greetings folk. It's been quite a while since I last showed up in
 Musings, due to pressure of school work and a lapsed membership. However, my
 school sked next year will be easier and will allow for more DXing time. Current
 gear is a Hallcrafters SX-110 and 100' longwire, although I plan to upgrade this
 shortly. Current plans for Summer DX include a go in the Electronics Illustrated
 contest. I feel the contest is hopelessly biased in favor of amateurs, but at
 least it gives me an excuse to get all the more common stations I've neglected.
 I'll have to pick up those continental points on SWEC, however. Anyway, the win-
 ner will spend enough in postage alone to effectively wipe out any monetary gains
 from the contest! He-dro time: 18 going on 19, recent sophomore transfer to
 the University of North Carolina from the U. of Ga. I have been DXing since
 7/63, & am an IRCA member and former editor of their Special Features section.
 Other interests include writing, music, and detective work on postmarks. If
 school doesn't interfere, I hope to see everyone at Toledo for the IRCA confab.
 Maybe the EI contest will allow me to log some reportable DX for next time. 73.

BILL COLIMAN - Box 2752 - Raleigh, North Carolina - 27602

Recent verifications from 4VEN-1035, WPJD-1550 Dalay, Tenn. 290w.
 ET 6/21, from 2:45-3am EST. WJAR-1480 Fall River, Mass. 2 $\frac{1}{2}$ 2/15. New SS on 116k
 heard around 1:15am, probably just another Cuban station. WBBQ-1000, Garner, N.C.
 250w. is now non-directional - they were a three tower directional. Anybody in-
 terested in corresponding or exchanging cassettes about the "bootleg" band, 1600-
 1650k? Well, that's it from me. I hope ERG like the double-spacing. Did you
 ever get that mailman straightened out? (Nope Bill; he's still bent over -ERG)
 (WJHO -4)

GREG HARDISON - 17600 Grna Drive - Granada Hills, California - 91344

7/5. DX recently has been unbelievable here, at least for me,
 thanks to a borrowed Hallcrafters S-76 RX. The first night, I picked up an un-
 ID signal of continuous mx on 1115k, possibly Bologna. That was 6/20. Also,
 KING-830 picked up w/r 6/21 @ 7:33. Signal was S-5. 6/28 brought KULP-790 @
 4:05 & KJR-990 @ 4:30. But here it comes. At 7:13, the same NM, R. Portales-
 1180 w/excellent reception, two IDs, & 15 minutes of DX. It was coming in like a
 local. Also, two Texas Panhandle daytimers, KELN-1530 & KGAN-1550 @ 7:36 & 7:47
 respectively. I now have an idea what real DX is like. I would also like to
 mention a recent Memorial Day visit to SW station KEEI in San Francisco. Too
 * no chance for Italy on WC in summer, Greg, suggest it was YNP, Nicaragua.
 GPN

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Twidell, the engineer on duty, gave me a complete tour of the station, including a look at the construction of their new 250kw XR. Late note: KGOE's OC testing @ 7:05 this afternoon, should be on air within a month. Strong signal here at 25 miles with 500w, probably NW beam. Good DX, 73s, Peace.

BILL ALISAUSKAS Jr. - 4 Hoover Road - Oak Ridge, New Jersey - 07438
Hi gang! First off, please note new address - we've been here since 6/1, and happy about it, being 40 miles or better from NYC. It sure has helped DXing quite a bit. For example: 6/1- WIZR-930 8:33pm just under WPAT. WITM-920 8:33pm, now a daytime regular and never heard in Haledon. 6/5- WJZZ-1460 7:33pm. 7/5- Much-wanted WHLW-1170 @ 8:30pm s/off. 7/6- WVLC-1170 8:15pm s/off. 7/7- WCFR-1480 8:25pm o/WHOM, followed by WADR @ 8:30, also o/WHOM. Also a short while ago WEN had a "Nostalgia Game" where they would call people who sent cards in and ask questions for cash prizes. Bob Fitzsimmons (formerly of WRKL-910) called a guy one day who was a sportscaster for WKQW, and after much talking, the guy on the phone said WKQW was planning to return on RS 8/13 or 8/15. This could be a rumor, but it may be worth checking into. That's about all I have. Phone here is 201-697-2491 if anyone ever decides he wants to call. 73, & have a nice Summer.

SCOTT BROCKWAY - 112 North Crescent Drive - Rome, New York - 13440
This must be a first - two consecutive issues that my fantastic commentary has graced the pages of the old Bulletin. It's too bad I haven't any earth-shattering news to relate. Oh well, one item I might relay is that I've begun sending out cards w/info on them to be completed by the CEs or whomever, to 60-some-odd stations that I haven't heard anything out of for my past reports. I'll try anything once. (!) Stations in - yes, Virginia, there are NEW stations to be heard here. WSYB-1380 w/rr @ 9:15pm & WLIH-1400 w/rr @ 1:15am w/mucho QFM from enough of them little buggers that you can never seem to get to ID. Also in, but not a newbie as are the above ones is WHLO-640. Does this one verify? He's getting one of my cards too! Ernie, I don't really seem to find the words to define "grok" but I'll try if you reveal to one and all what ERBA means. Okay? (No deal, Scott- you'll have to go to the West Sacramento Convention to find out! -ERC) It doesn't really stand for the Ernie is Really Fatman Ass'n, does it? Hi. As they say here in Rome, WRNY - Ye're B arily Nts Year-round. 73s from the lightning static capitol of the work and Ban the Bolt!

JERRY BOND - 121 North Fitzhugh Street - Rochester, New York - 14614
Greetings everyone, from the NRCer who's probably the longest overdue for a Musing. It's probably been a couple of years since the last time I blessed these pages with a few of my words of wisdom. For those who don't know me, I'm 24 and I work as an accountant here in Rochester. Up until a couple of years ago I was very active DX-wise hearing 1,330 stations from my former home in Watertown, N.Y. The past few years I've done almost no DXing but I hope to get back into the swing of things later this year. I haven't got any DX to report, but I want to mention that WOTT-1410 in Watertown, N.Y. has been given permission to go fulltime with 5,000/1,000 directional. They got FCC permission despite loud protests from WPOP. WPOP claimed WOTT's nighttime operation would interfere with their coverage and also that they should not be allowed to go fulltime because they wouldn't cover any areas not already covered by their FM station, WNCQ. The FCC rejected the protests & if all goes as planned WOTT will go fulltime in 3-4 months. I suspect they will beam NW w/nulls towards Montreal and Hartford so they could be difficult in the States. Still they will probably be about the easiest of the three Watertown stations to hear. I'll let everyone know through Musings just when they go fulltime. Not much else to report here except that I won't be attending the Convention this year for the first time in four years. I hope everyone can get along all right without me, hi. 73 everybody.

THE NEXT ISSUE, WHICH CONCLUDES ANOTHER GREAT N.R.C. SEASON - OUT 38th - WILL BE COMING ALONG IN FOUR WEEKS. THURSDAY DEADLINE HERE WILL BE AUGUST 26. WE HOPE THERE'LL BE A PIECE IN THAT ISSUE BY YOU! REMEMBER WEST SACRAMENTO.

J. ALEX BOWAB - OI Division - USS Forrestal - FPO New York - 09501
(Norfolk, Va.) I'm Stateside for good - now to ride out my last three months' Service. Locally, WWOX-1400 ex-WHII is back on AN. Aired promos & printed ads say station is neither a Black nor White one, but a "People" station. We Will Over Come remains, however, a Soul mx station. The scene shifts to Jackson, Miss., next location, where the FM of which I own 1/3, WKOT-94.7, will hit the air in mid-August. Reports welcomed from those of you who DX FM. Our station will be Black-oriented, which fact I relay to explain why WOKJ-1550 (the only other station of this type in the city) goes AN today (7/20). They are out to counter the first competition they will have had since their 1954 beginning. We made known our intent to AN only on Sat/Sun, if at all. During last visit to Mississippi, I heard WHII-1570, dunno when RS began. WRBE-1440 is up for sale - beginning 7/11, they said, RS 6am to 9am only - the consideration is obviously an economic one. And while passing through Atlanta, I failed to hear WYNX-1550 - are they off? Jackson formats, by the way: WJDX-620 adult contemporary; WSLI-939 MOR - MOR & c1 mx; WRKN-970 c/w; WRBC-1300 rr; WJQS-1400 c/w; WJXN-1450 c/w; WOKJ-1550 Soul; WWUN-1590 rr. Night DA patterns: WJDX to S; WSLI to SW; WWUN to S-SE; WOKJ to S-SE and NW; WRBC non-DA. Condolences, N.Y.C., the only major market without a c/w station. Jackson has three, plus a Vicksburg FM to boot. Tell ya what: we'll give you WJXN! No one here will ever miss it. GPN may be right about the German station being under construction in Malta - my last time there was prior to the elections which brought opposition to power - and that marked the beginning of some rapid, drastic changes. Perhaps the new government's celerity was applied to the problem so long deadlocked - whether to let locals or foreigners establish a radio facility for the island.

RONALD SCHATZ - 510 N.E. 158 Street - North Miami Beach, Florida - 33162
Greetings & procrastinations! As of four weeks before the IRCA Convention things look definite that I'll be in Toledo. I'll be flying there via Detroit. As of six weeks before the NRC Convention, that's an almost-definite & entirely up to my employer. I will spend some time in SD, IA, SJ, & SF just prior to the inflated ERBA session. I plan to lecture on multi-pattern arrays & demonstrate same at both Conventions, though GPN may have plans of his own. Warning: I am ~~nothing~~ like you have imagined, and if you haven't seen me since I left the Navy, I have changed considerably, both physically & personality-wise. Convention goers have been warned! Re the numerous inquiries sent to me re the LSCA (and loops in general) all info is being submitted for DX NEWS offsetting as soon as it is prepared, so, although I appreciate the interest shown, writing to me will not get the info to you any sooner. I will answer inquiries from our overseas members however, for obvious reasons. Also, please address letters to "Ron" - I am not a "Sir" as I have not yet been knighted, hi. Some interesting Summer DX has been noted here, especially from Africa, thanks to phone tips from GPN. Read all about it in RL's column. Who's that on 1295 & 1405? Wanted: One broadcasting studio with recording facilities (preferably stereo) & a board. Florida location preferred. Object is a tape to familiarize DXers with regional IA mx, pronunciation of place & station names, & NA's. We've got the material, but a radio studio is needed. The tape is designed for DXers who presently can't tell a "vals" from a "cumbion", hi. Of course, a formal bid will be presented in West Sacramento (probably in the Gay-Minties Bar) in support of the Miami area as next year's "place where it's at". See what the Democrats leave behind, hear five daylight countries, visit the VOA, see Radio Americas's studios, swim in an 86° ocean, climb a coconut palm (to string a beverage), visit our picturesque Cuban section, watch SS TV, win at jai-alai, greyhound racing, poker, etc. Date the finest young ladies on earth! All this & more: Would you believe - an ocean-front room for less than \$10 a night? If you must travel far for a Convention, make the trip worth your money. We want only the best for NRC. Fla. & U in '72!

TOM MCCORMACK - 275 Littleton Street - West Lafayette, Indiana - 47906
Not much DXing here lately, though I did manage a few new ones on SRS such as WWKY-1380 WGRD-1410 WGOH-1370 (26th logging on 1370 here) and four new welcome 1430s (despite WIRE NSPer, what I consider a local @ 60 miles) - WFOB,

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 WCLT, WENE, & WENO (98th logging from Tennessee here, my best state). Twenty-two stations heard here on 1430 now, one of my difficult frequencies ARM-wise. 819 veries in the ol' shack now, mostly from long overdue strays. They include: v/l- WHIP-1350 TEST, TIRICA-625 (one million watts!) WIAM-900 (37th N.C. verie here out of 62 heard). v/r- KLIZ-1380 (took 1½ years, only my 20th Minn. verie). v/f- WBRC-960 (my 32nd Ala. verie of 62 heard). v/q- KRKO-1380 (took three months, my sixth Wash. verie), ZBM-1235 (second Bermuda verie), WSPD-1370 (El Pesto Speedy), ZDK-1100 (took four months) KRIA-1110 (six months, my 23rd Cal. of the 31 I've heard) & WJIM-1530-TEST (took 5½ months, sixth N.J. here, also have 'em verified as WELA, v/l & v/q. v/c- WHHH-1440 (I'm 'n their deep null, thanks Wes Boyd for help verifying this guy! I'll be attending Indiana U. this Fall, and the new address will be 100 miles S of here (I will return home to DX when time permits, though, hi). I also will look into possible DX TESTS with Bloomington area stations such as WTIS-1370 WCHK-1540 WBIW-1340 etc. Anyone interested in collecting air checks, SIDs, jingles, and whatever, just send on a tape of your local and semi-local Rockers and I'll do the same (and then some, hi). Totals here remain at 1,722 domestic loggings, 50/50, & 8/8 provinces. Anyone who'd like a copy of my SC, CM, verie & non-verifiers lists - just give me a write and enclose an SASE. I hope to hear Newfoundland this Winter, likly on 740 @ s/on MM. 73, good DX.

MORRIS SORENSSEN - Box 245 - Bala, Ontario

Please note my new address - I moved here from Emsdale on 7/2. For the newer members, who don't know me, perhaps a re-intro is in order. I'm 23 years old and a graduate of Laurentian University (B.A. in History) 5/70 and North Bay Teachers' College 5/71. I've been a "dial twister" since 1962 or perhaps earlier but I didn't actually begin DXing until mid-1964. I've been an NRC'er since 1966. However, I've been rather inactive since 9/67 as a result of attending university & college. I've done absolutely no BCR DXing this Summer except to logCFTR-680 (ex-CHFI) on 6/23, their first day on ev callis. TV/RM DXing is another story but I won't go into that here, hi. The big news here is that I've accepted a teaching position in a place called God's Narrows, Manitoba, on God's Lake, 350 miles or so NE of Winnipeg. There are no roads up there - you have to fly in. I'll be going up there in late August and hope to resume my career as an active DXer again. The school is on an Indian Reserve and I will be employed by the Canadian Dep't. of Indian Affairs and Northern Development. One thing for sure, I won't exactly be plagued by local stations up there, hi. I'm interested in obtaining a Space Magnet but I'm worried about the custom duty in getting it across the border. Does anyone know what this would amount to? DXers sending return postage to Canadian radio stations might be interested in knowing that the standard first class rate went up to 7¢ on 7/1 and will be raised to 8¢ on 1/1/72. Well, I guess that's it for now. 73.

NEW YORK YANKEES BASEBALL NETWORK (from Bruce D. Bennett)

570 W S Y R	920 W K R T	1320 W S C R	1400 W R A K
W M C A	1230 W I N F	1340 W E N T	1440 W J J L
610 W T O R	1240 W S K I	W M S A	1450 W C L I
790 W W N Y	1260 W B N R	W I R Y	W K A L
810 W C Y	1280 W A D O (SS)	1360 W K O P	1490 W K N Y
840 W V P O	1390 W R I V	1370 W A L K	W B C B

CHICAGO WHITE SOX BASEBALL NETWORK (from Ken Onyschuk)

1300 W T A Q 1340 W J O D 1420 W I N B 1500 W G E M 1580 W O C R

* - weekends & holidays only.

NEW YORK METS BASEBALL NETWORK (Ernie Cooper)

970 W W D J 1230 W H U C 1290 W G L I 1450 W N A B

HEARD SINCE LAST ISSUE

680 C F T R Ex-CHFI	1190 K A Y Q Kansas City, Mo.
1000 W K B Q Now 250 D-1	1570 W H I I -----, Mississippi
1080 W P N S Hurricane, W. Va.	

Note: When you report hearing new stations or old ones with new facilities, please give us all the pertinent details - location, Frequency, etc.

BRUCE WINKELMAN - Route 1 - Ellinwood, Kansas - 67526

Congratulations to the people who did the work on the LA Log! I just received mine and it's a fantastic piece of work. DX has been coming in at a pretty good pace since last Muse what with the noise level down to somewhat respectable levels for this time of year. This week saw my 300th station logged in the person of KBWD-1380 @ 11:25pm on 7/18. Other DX to report: 6/20- KNAB-1140 @ 12:26pm. 6/21- KWKY-1150 @ 1:25am w/r/c & a new state logged in the form of KOFT-1180 @ 1:31am. This is my first from Montana. Verie says their null is to the E to protect WHAM and that they have gotten few reports from Kansas due to this. 6/25- KR0D-600 @ 7am; KFNF-920 @ 7:14am & KIXL-1040 @ 7:35am w/WHO nullid. 6/27- KDDD-800 @ 11am w/their 250w. I've had real good luck w/DXing after church on Sunday mornings for some reason. (Using your SKYwire of course -ERC) 7/1- KDSX-950 @ 10:15pm. 7/6- KOKX-1310 @ 10:35pm & KTOW-1340 @ 11:10pm up through the mud on the frequency; then at 11:59pm KOCY popped up on 1340 also. My first loggings on this graveyard. 7/16- KRYT-1530 w/s/off u/semi-nullid WKY @ 10:30pm 7/18- KIWA-1550 @ 7:50am; KFBS-1310 @ 8:30am; WGBF-1280 surfaced w/WX @ 11:01pm; KLOM-1390 @ 11:32pm. 7/20- KRY5-1360 @ 11:57pm w/commercials. Best of luck to Russ Edmunds and get well quick! Glad to hear that GPN and family escaped unharmed from the car accident. I hope everything is back to normal by the time this Muse appears in DX NEWS. I was in Dallas over the July 4th weekend and attempted to call Paul Hart in Fort Worth but no answer. I won't be able to make it to the NRC Convention this year as a combination of factors (economic, academic, and female) make attendance impossible. I hope to boost the log to 325 before I leave for school in about five weeks. I will do more DXing this Winter than last (I hope). 73 and good DX.

GLEN R. NEAL - 1005 North Fifth - Sayre, Oklahoma - 73662

I have had some excellent results with the Space Magnet concerning daytime DX since the last Musing. So far I have had time to tune from 540-590k in detail, from about 11am to 1pm CDT. RX is a Hi-Fi Delmonico AM/FM. It was completely insensitive on the AM band until I went inside and looped about five turns of wire around the AM antenna. This vastly improved the AM sensitivity. That is run, through a connector, to the Space Magnet. Results, by channels: 540 - KWMT Ft. Dodge fair, amazing for 5,000w, 600 miles. 550, KFRM Salina equal to KCRS Midland, both very strong. 560, KWTO Springfield, Mo. fair; 570 WFAA Dallas excellent; 580 WIEW Topeka good, KDAV Lubbock fair. 590, three stations: KCSJ Pueblo fair, equal to KRBC Austin, both u/WOW Omaha, 500 miles. I checked 1110, but no KFAB. I guess the ground conductivity is much less at the higher frequency. I work for KFDO-TV, Ch. 8 near Sayre Friday & Saturday nights. A very nice job to have while going to school. In my opinion, the Space Magnet is the ultimate antenna to have for the BCB if you don't have room for anything else. I'm not sure anything else could beat it anyway. 600-690 next time. 73 from W. Okla.

MIKE BECKETT - Glorieta Baptist Assembly - Clorieta, New Mexico - 87535

I have been a member of NRC for little over a year now & this is my first Musing. I am 24, single, a Navy veteran and am working toward a degree in Electrical Engineering. I have a Summer job working in the cool mountains here just E of Santa Fe. I have been DXing since 1960, most of it on transistor portables w/no external antenna. However, about nine months ago I built the IRC "simplest" loop. And just a week ago I cashed in a whole month's earnings on a Space Magnet. I haven't really got to try it out good yet. Don Kenney's article in the 6/18 issue of DX NEWS is what sold me. Also, I got to meet a fellow DXer in person for the first time about a month ago. I went down to Albuquerque and dropped in on Norm Maguire for a couple of hours. He didn't have any of his equipment right with him but he told me lots of interesting stories. I found out how important selectivity is if you want to DX the foreign stations. I'm still using transistor portables right now. The static from rainstorms is real bad here in N.M. too. I can hardly find a good day or night to DX. So frustrating! I like to DX daytime very much. Here's a little on 7/22. KCRF-570 230 miles, KDAV-580 265 miles, KR0D-600 265, KHEY-690 265, KGNC-710 225, KFYO-790 265, XELO 800 270; KBIM-910 165, KIUP-930 165, KIXZ-940 225, KSEL-950 265, KMIN-980 120.

38 Then itvtapers off as usual at the top end of the band. My best daytime DX so far is WNAD, Norman, Okla. The distance from there to my home in West Texas was 400 miles, on my sister's car radio no less. I hope to have better DX to report later. 73. (Welcome to NRC, Mike, and a fine Musing! Muse often! -ERC)

JOHN TULL - 5539 Oak - Kansas City, Missouri - 64110
Lots of DX due to Telco strike. Unknown child in household broke my 30" loopstick. I now have a 35 3/4 loopstick - works great. New veries: CHML Hamilton Ont. Skw, also KXIS KTOP KPOW WIBV KCHI WAKY WUSI (Who's that? -ERC) WEBZ KNEM & WHEF. I have sent reports to CBL KUULK KONO CJBC XEMO, last three on 860. I was able to null out one at a time to receive the others, CMB WDAY CRB. On CRB I was able to null CFRB. (who're CMB & CRB? -ERC) KNX after nulling out KFDI, KLEY KLIRB KAYQ, new station in Kansas City on 1190 testing. I called the CE & he said they will testagain in the middle of August. They plan to start 9/1. w/1,000w. daytime, 250 night, pattern to the NW of Kansas City. Address is 424 Nichols Road, Kansas City Mo. 64112. I also await veries from KAKE KARE CBE WCIS & KCRG. I just wish the WX stya cool, hi! I noticed Scott Brockway is unable to verify WNAX. I have sent at least three reports to them and nothing yet. Well, so much for South Dakota. 73.

RANDY STEWART - 2951 East Bennett - Springfield, Missouri - 65804
I've been a member since January, and though I haven't gotten any semi-nasty form letters from ERC, I figured I should Muse. I'm 14 and live in a neighborhood with thousands of TVs (or so it seems), no room for a longwire, CB-ers, power lines, etc. All the modern luxuries, hi. I was afraid to Muse 'cause I thought they HAD to be tuped, and I don't have a typewriter, but I found out other members do it. I received a nice card from Ken Lyon on my first month, but he had sent it to Muse, because some one mis-spelled it when it was listed as a new member. I'm one of the lucky ones who got an NRC L.A. Log, and it's great. I've got a cheap RX in much need of repair (a Baylor SD15 six-band portable) w/a BCB antenna in the handle. Maybe I'll get an SW-1. DX, if you can call it that: 7/19- WOC-1420 Ia. @ s/off, 12:06am, good. 7/21- XE0A-570 Mexico on top @ 12:30; WRTH-590 Ill. w/WOW @ 12:36 poor; KPRC-950 Tex. good @ 1:03; WAVE-970 Ky., local quality, killing all @ 1:06; unkn KFJZ-1270 Tex. good @ 1; semi-local KUDL-1380 Kan. excellent @ 12:47. LA hets noted about 10:30 7/20 on 655 675 765 825 834 (and audio) 965 1015 1075 1155 1235 1506k. Veries (hete we go again) v/q- CFRB PUB KSL XELO WSB WIS KFAB KMOX WBAP WCCO KOA CBW WHAS WRVA VOA-1180 WWL KAAY WSM Belize-834 KXEL & WJR! Whew! Also a nice v/l from WRBC-1300 Miss. The CE says I'm at the right age for ham radio. No way! They can take the code test and --- Does Gilfer still have the N C Domestic Log? I need one badly.* 73 & I hope I skipped lines okay for you, Ernie. (U did, thanks! -ERC) (I believe Filfer has NRC Logs as they recently sent a brochure advertising them for sale -ERC)

(* A few NRC Domestic Logs are still available from HQ for \$3.00. GPN)
THOMAS R. SUNDSTROM - Box 205 - Willingboro, New Jersey - 18046

I haven't Mused in quite a while, so I thought I'd take the opportunity to say I'm still around, but BCB DX has been nil between Summer and work. GPN, glad to see family & you OK after someone decorated your car. The NRC L.A. Log and GPN's letter received - thanks. It looks real good. RE ERC's comment to Hayes (7/24 DX NEWS) on P.7, the WTPDA is the World TV-FM DX Association, Box 5001, Harbor Station, Milwaukee, Wis. 53204. It is a TV/FM DX club only, as the NRC & IRCA are BCB only., and is a full member of the ANARC. Also, ERC, re Bennett's Musing (7/24 DX NEWS) P.9, Electronics Illustrated is running (will be over before this is in print) a one month, from 7/15 to 8/14, DX contest. The person who collects the most QSLs, whether SWL or amateur (no distinction), for loggings/contacts during that 30 days wins. It obviously is geared for a radio amateur - contacts can be made faster than a logging & report, and EI doesn't allow for the discrepancy. EI deserves the "Fickle Finger of Fate" award for that one. Suggestion for HQ: I can't remember when my membership expires. How about putting it on the address label as SOP? I have a couple of things for sale, gang, s/a couple of other projects in mind: 1) Knight R-195 AM-SW RX (P. 41D of Allied Radio Shack '71 catalog), 2) Gonset 3-30mg/s SW converter and clipper-

squelch; (3) Morse Code tape player, key, oscillator, and tapes; (4) 108mc to 8 mc satellite converter (or for parts) from '59 PE; & (5) Heath CA-1 Cinelrad Alarm. Details and prices on request; also I'd be willing to swap for test gear or police/fire RX etc. 73.

JIM CHRISLIP - 4472 Barrington Drive - Youngstown, Ohio - 44515
Owing to a sudden renewed interest I've decided to Muse again. As of late I've been working off an HQ-100 & loop thanks to Wes Boud who's lending it to me. Here's the new stuff: 7/12- WESA-940 @ 12:32 w/WGRF nullied; WELD-690 12:40pm. 7/13- I finally logged local WDNL-1570 @ 2:35pm. 7/14- WWOW-1360 @ 1:33pm w/c/w mx, WELF-1370 @ 7:30pm nulling WSPD, WLRO-1380 @ 9pm s/off w/a mess. 7/15- WKEG-1110 @ 7:10pm w/c/w very poor - so was the mx. 7/18- WDMC-1370 @ 6:10 w/NX (?), WAJR-1440 7:12 all gone as WHEH didn't s/on till later. 7/19- WFPJZ-1550 ID for r/c caught at 2:45, good signal for noisy night, WORV-1580 ID @ 3:02 also r/c, WKIG-1580 ID @ 3:32 for r/c also very good, my 39th station on 1580. 7/20- A surprise in KPNC-1560 @ 3:17 w/pretty good signal for Summer, WQGN-1340 @ 3:46 on RS buried in the garbage. 7/24- WYIK-1480 (are they new?) ET/mx like instrumentals, said it was ending and gave the time as 2:04, said power was 1,000w. (Yes, they're new, Jim, and, excuse the expression, they're in YAD-kinville, N.C. - ERC) That's it from this YAD, I hope to be Musing regularly now. 73 y'all.

WES BOYD - WHOT Radio - Youngstown, Ohio - 44505
Some changes for the NRC Domestic Log: WKJG-1380 is 5kw U-4, not 1/5 kw. Also KDSX-950 Texas s/on time is wrong. What kind of time is 0680 anyhow? OK, now to junk. I believe I caught WPRW-1460 w/MoR instrumentals on 7/14, seems to run spots & PSA @ :15 & :45, o/u KSO/WPNX/WOMB/WRAD mess. No sign of him after 12:35am 7/15, CJOY on top. WIS-560 now AN w/MoR junk. On 7/6 I noted Braves BB on 1480 - who be this, Mobile, maybe? WARM-590 for the first time 1:24-1:34am w/rr & "Tooth Fairy Promo"; Noted over the last couple months, both on 1400, c/v AN & an AN Talk show - seems to be towards the E or NE, not enough to get a time check but still pests. (The c/w could be Spartanburg, S.C. ex-WGCC -ERC) Anyone needing South Dakota, try 570, w/WKEN now off @ 1:04 you can grab his NXcast, WX, s/off, hymn, & SSB, off @ 1:10, usually o/WMCA/WFAA here. Or the KSIDR-1480 r/c on first Saturday in August, first heard here on f/c first Sat. in May so CX should be similar. WFEA-1370s/off @ 1:30 last couple of nights. When last heard about three months ago they were running NX/Talk AN. Good old WSPD no longer w/ Dolly but still AN. Bits of new WWDJ-970 heard - sounds good (couldn't have been WWDJ then, hi -ERC), still not enough for report/tape etc, stronger than was WJRZ.

DAVE SCHMIDT - 44 Green Lane - Green Ridge, Pennsylvania - 19014
Greetings. Not much is going on around these parts, DX is nil since I've been very tied up with things. However, the travelling department is open. I've been gettin' 'round. A few months back, I went on a fishing trip to the Western part of Delaware to find it is one of the best listening spots in the whole East. At Seaford, there is only one local, WSUX-1280 and their signal is so bad that WADO is loud u/them until you're five miles away. The Salisbury, Md. stations are also pretty bad signal-wise. At night, nothing. WB0C-960 is the only thing on, and nothing after midnight. On a trip about a month later to Rehoboth Beach, Del., I noted all kinds of strange things. WFEG-1450 is alone about 100 feet away from the ocean and when you're down on the beach, WILM is loud under. I guess everyone knows just how good WETT-1590 gets out. And you probably think their signal is good along the water. Not so. They are so directional that at Bethany Beach, ten miles from Ocean City WEEZ & bits of WISZ are on top! At night, they hardly cover Ocean City. Foxey WSLM is directional due S. They've got about 25w off the back of their array, to protect WHEE. That's it, have a happy Summer. P.S. WEEZ-1590 is now on till 2am. Gregg Darr, GM at WSER said that WZUP-1550 Harrisburg isn't licensed and he didn't know about it. WSER pushed all of their signal in that direction. A new outlay? (I heard 'em as WJUM -ERC) (It's the N. Philly pirate, Dave, see DDXD. GPN)
WHEN YOU READ THIS, THE N.R.C. CONVENTION SHINDIG WILL BE LESS THAN ONE MONTH AWAY!
BETTER PLAN NOW TO BE IN ON THE FUN WITH THE "ERBA" GANG IN WEST SACRAMENTO!