

# ★ ★ ★ DX MONITOR ★ ★ ★

PUBLISHED BY  
THE INTERNATIONAL RADIO CLUB OF AMERICA

NOVEMBER 24, 1973      VOLUME 11, NUMBER 9

**BROADCASTING INFORMATION**

(as compiled by Mike Worst)  
from the November 5, 1973 issue.

WAFC 900	1-D	Staunton, VA	requests WKDW
KGUD 990	1-D	Santa Barbara, CA	granted KTYD
NRRB 1060	1/4-D	Lockhart, TX	" KCLT
RHDN 1230	1-D 1/4-N	Hardin, MT	s/off 7pm
new 1410	1/2-U DA	Cleveland, TX	requests KJCH
WOPK 1450	1-D 1/4-N	Meridian, MS	granted WTNK
new 1500	5-D	Buford, GA	CP
WBJJ 1530	1/4-D	Elmhurst, IL	granted WKDC

all powers in kw.

Mon. Dec. 3	0200-0300	WEVP 1230	Leaver Falls, PA	1/.25kw	U1
	0300-0330	KMAV 1520	Mayville, ND	.25kw	D1
Tues. Dec. 4	0100-0110	WVAM 1430	Altoona, PA	5/1 kw	U2
Mon. Dec. 10	0130-	WHLM 550	Bloomburg, PA	1kw	U4
	0300-	WRUF 850	Gainesville, FL	5kw	U
Sat. Dec. 15	0300-0400	KWED 1580	Seguin, TX	1kw	D
Mon. Dec. 17	0200-	KI-NY 800	Juneau, AK	5kw	U
	0200-0210	KXOX 630	St. Louis, MO	5kw	U
	0430-	WDAF 610	Kansas City, MO	5kw	U1
Thur. Dec. 20	0230-	KFFA 1310	Greeley, CO	5/1 kw	U2
Mon. Jan. 7	0100-0530	KEUC 1310	San Antonio, TX	5kw	D2
	0300-0330	KPCA 1580	Marked Tree, AK	.25kw	D1
Mon. Jan. 14	0200-	WDEC 680	Escanaba, MI	10/1kw	U1
	0600-0800	WKRT 920	Cortland, NY	1kw	U2
Mon. Jan. 21	0300-0400	KALQ 1350	Albuquerque, NM	5/.5kw	U2
Mon. Jan. 28	0400-0500	KCRA 1320	Sacramento, CA	5/1 kw	U4
	0515-0545	WTSO 1070	Madison, WI	10/5 kw	U4
Mon. Feb. 11	0200-	WHIS 1440	Bluefield, WV	5/.5kw	U1
Sun. Feb. 24	0230-0300	KGVO 1290	Missoula, MT	5kw	U3

**DX CALENDAR**

All times are Eastern Standard Time

Sat. Nov. 24	0145-0200	WLCL 1490	Levittown, PA	1/.25kw	U1
	0200-0300	WPDC 1600	Elizabethtown, PA	.5kw	D3
Mon. Nov. 26	0030-0100	KFUC 850	Clayton, MO	5kw	L1
	0100-0200	WMEA 1460	Ambridge, PA	.5kw	D3
	0115-0300	WSAR 1480	Fall River, MA	5kw	U4
	0330-	KRCO 690	Prineville, OR	1kw	D1
	0515-0530	WFLN 900	Philadelphia, PA	1kw	D3
Sat. Dec. 1	0000-0100	KWOC 930	Poplar Bluff, MO	5kw	D2

WECB will have a frequency check with 1000 hertz tone. Reports go to John P. Super, Chief Engineer, P.O. box 1490, Levittown, PA 19054. Information from NARC's Gene Peterson.

THE INTERNATIONAL RADIO CLUB OF AMERICA--a non-profit club devoted to listening to distant radio stations on the broadcast band (540-1500 khz). IRCA is a member of the Association of North American Radio Clubs (ANARC), dedicated to promoting cooperation between the radio clubs in North America.  
**CLUB OFFICERS:** President: Richard C. Evans, Box 2048, Gary, IN 46409 (219-981-2121); Secretary-Treasurer: Carl Dabelstein; Board of Directors: Bob Foxworth, Nancy Gantzer, Percy Kes-teen, Ed Krejny, Bill Nittler, Father Jack Pejza, John Zondio. Membership dues in IRCA: \$2 a year.

**DX MONITOR:** The official magazine of IRCA, published 34 times a year by IRCA. Weekly from November to March, three times in October, twice in September, April, and May; and once in June, July, and August. Publishing Staff: Executive Editor: Father Jack Pejza, 3256 Nutmeg St., San Diego, CA 92104 (714-282-0076 or 282-2184); Publisher: Grant Manning, 12536 Arabian Way, Poway, CA 92064; Dave Stroup, John Kolb, Randy Seaver, Albert Lobel.

**SUBSCRIPTIONS:** For IRCA members: \$7.50 per year (plus \$2 membership dues) first class; \$11 (+\$2) airmail to North America; overseas seairmail \$7.50 (+\$2); airmail to Central and South America \$18 (+\$2); Airmail to Europe and Africa \$23 (+\$2), Oceania and Asia, \$28 (+\$2). To non-IRCA members: \$10 first class, \$14 airmail to North America; \$10.50 seairmail; \$26 airmail to Europe and Africa; \$21 to C. and S. America; \$31 to Oceania and Asia airmail. Sample copies 50¢ or 3 International Reply Coupons. Make all checks and money orders payable to IRCA. Canadian members, please use Postal Money Orders payable in US funds. Other foreign subscribers please use International Money Orders payable in US funds. Send all funds for memberships and subscriptions to IRCA, 12536 Arabian Way, Poway, CA 92064. Please include self-addressed stamped envelope in correspondence with publishing headquarters if reply is expected.

IRCA publishes the IRCA Foreign Logs, listing over 1500 foreign stations heard on the broadcast band. Vol. 1, \$2.25, Vol. 2, \$3 to members; combination offer, \$5.

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Poway, CA 92061  
Address correction requested

EXP 4/6/74      V11N28      1  
 Michael G. Worst  
 3608 Phinney North  
 Seattle, WA 98103

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# FIRST CLASS

WPDC will be on with FM transmitter as well, on 106.7 mhz. No program information available. Write Leo Salter, Engineering Consultant, P.O. Box 1600, Elizabethtown, PA 17022. Arranged by Gene Peterson, NNRC.

KFUO-- no program details available. Reports go to Chief Engineer, KFUC, 801 DeMun Ave. St. Louis, MO 63105. Arranged by Jim Lovell, NNRC.

WMBA will use rock music with many IDs, both voice and jingles. Pre-paid phone calls are welcome to 412-266-1110. Reports go to Richard Allen Pantaleo, CE, WMBA, Ambridge, PA 15003. Only reports with return postage will be answered. Rich is interested in seeing just what his 500 watts will do, so make a real effort and try! Arranged by Dave Schmidt for NNRC.

WSAR will use daytime directional array, code IDs, and station jingles every 4-5 minutes. They will pay semi-rock pop albums. Write to Robert Wotzig, CE, P.O. Box 927, Fall River, MA 02722. Arranged by Frank Testa for NNRC.

KCRO gives no program information. Write to C.R. "Eob" Matheny, President, KCRO, P.O. Box K, Prineville, OR 97754. Arranged by Stephen Pitts for NNRC.

WFLN will have a frequency check with 900 heriz tone. Write WFLN, 8200 Ridge Ave., Philadelphia, PA 19128. Arranged by Gene Peterson for NNRC.

KWOC-- no program details available. Reports go to Leland D. Shaffner, General Manager, KWOC, Valley Plaza Shopping Center, Poplar Bluff, MO 63901. Arranged by Jim Lovell, NNRC.

WEVP will feature music and announcements. Write James Roush, Chief Engineer, WEVP, 1400 Seventh Ave., Leaver Falls, PA 15010. Arranged by Gene Peterson, NNRC.

KMAV-- no program details given. Send reports to Austin Kramer, General Manager, KMAV, Box 918, Mayville, ND 58257. Arranged by Carl Dabelstein for NNRC.

WYAM will give extra IDs during its usual frequency check. Reports go to Chief Engineer Bruce McCray Schiller, 2727 W. Albert Drive, Altoona, PA 16602. Arranged by Gene Vonderembse for NNRC.

WALM-- no program details available. Send reports to A. F. Hogg, WALM, 107 W. Main St., Bloomsburg, PA 17815. Arranged by Gene Vonderembse for NNRC.

WRUF will have an equipment test with station IDs, tones, and recorded music. Write E.A. Slimak, CE, WRUF, P.O. Box 14444, Gainesville, FL 32601. This is a University of Florida station. Arranged by Gene Vonderembse for NNRC.

KWED will use MoR music with many IDs. Reports go to Lowell E. Huffman, KWED, P.O. Box 989, Seguin, TX 78155. Arranged by Ariele Bigley for IRCA. KINY probably won't get out too well, as the CE told Larry Ledlow, Jr. of NNRC who arranged the test that the station lost its tower some years ago, and is now using a 1/4 wave longwire. No details on programming available. Write Dave Moore, CE, KINY, Juneau, AK 99801.

KXOX-- no details on programming available. Send reports to Art Jablonsky, Chief Engineer, KXOX, 4255 South Pine Blvd., St. Louis, MO 63108. Arranged by Jim Lovell for NNRC.

#### FLASH TIPS

Skip Dabelstein reports that a request to KKAL-1590, Denver City, TX, was returned marked "Off the Air." Can anyone verify that this station is no longer on?

We regret to announce that Raleigh Biss of Palm Springs, Calif. passed away in his sleep of a heart attack on November 6. His health had been poor for the past year, and he had been hospitalized three times. Raleigh was a long-time DXer, having started as a youngster in Minnesota in the early days of radio. His achievements in the hobby will be long remembered by those who met him. His wife, Vera, had indicated that she must sell Raleigh's TV repair business at inventory. Anyone interested, please contact her at 3541 Sunny Dunes, Palm Springs, CA 92262. May he rest in peace.

#### GEOMAGNETIC INDICES

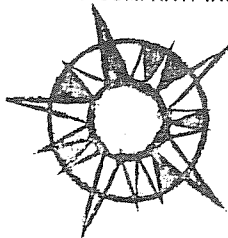
Nov. 7-13 20 9 9 7 4 3 7

Propagation conditions should be good until about Nov. 25, when a period of unsettled conditions is expected to begin.

#### SUNLAND BROADCASTING COMPANY, INC.

470 S. GLENWOOD  
P. O. BOX 10035  
EL PASO 91, TEXAS  
PHONE 772-5211

I. T. COHEN,  
PRESIDENT &  
GENERAL MANAGER  
ROGER F. MOORE,  
VICE PRESIDENT



CBS RADIO FOR INTERNATIONAL CITY

# KIZZ

1150 ON THE DIAL

WDAF-- will have suitable announcements made, according to the Program Director. Write Chief Engineer James P. Schmidt, WDAF, Signal Hill, Kansas City, MO 64108. Arranged by Jim Lovell for NNRC.

KFKA-- no program details available. Write to J. Roger White, Staff Announcer, KFKA, 1025 Ninth St., P.O. Box K, Greeley, CO 80531. Arranged by Gene Vonderembse for NNRC.

KEUC will test with 30/50/100/400/1000/5000/7500/10,000 hertz tones with different modulations; C.W. music, and many IDs. Program will test the 5 kw main transmitter as well as the 500 watt PSA power. Reports go to Howard E. Hettinger, KEUC, Box 20267, San Antonio, TX 78220. Arranged by Ariele Bigley for IRCA.

KPCA-- Skip Dabelstein, who arranged the test for NNRC, will suggest to the station that the test consist of a series of one minute TTs, C.W. music, and code IDs. V/s is Dale Sanders, KPCA, Box 550, Marked Tree, AK 72365. Mr. Sanders is quite enthusiastic about the test, so give it a try.

WDLC-- no program data, but the station will use 10,000 watts for the test. Write Robert Haslow, WDLC Radio, P.O. Box 419, Escanaba, MI 49829. Arranged by Eugene Vonderembse for NNRC.

WKRT will also broadcast on 99.9 mhz FM. The program will consist of regular programming material, during regular station hours, but IDs and mentions of NNRC will be added to assist in identification. Reports go to Bruce L. Mackey, CE, WKRT, 292 Tompkins St., Cortland, NY 13045.

The same program will be on AM and FM; Mr. Mackey is especially eager to get FM reports. Arranged by Ken Lenner, NNRC.

KAEQ is a Spanish language station, but will give IDs in both English and Spanish. The station operates with 500 watts with a null 190 west of true north. Write Hubert Beavers, CE, KAEQ, 1309 Yale, S.E., Albuquerque, NM 87106. Arranged by Eugene Vonderembse for NNRC.

KCRA will play Beatles records with IDs in CW and voice. They will mention NNRC. Reports go to Gary L. Wann, KCRA News, Radio 132, 310 Tenth St., Sacramento, CA 95814. Arranged for NNRC by Eugene Vonderembse.

WTSO-- no program details available. Write to Sherman Stern, Chief Engineer, WTSO, 5721 Tokay Blvd., P.O. Box 44, Madison, WI 53701. WTSO tries to have a 15 minute test every Monday morning starting at 0530 EST. Arranged by Eugene Vonderembse for NNRC.

WHIS-- no program details available. Write Chief Engineer, WHIS, Broadcast Center, East Cumberland Road, Bluefield, WV 24701. Arranged by Eugene Vonderembse for NNRC.

KGVO will use adult contemporary music, with full station ID between records. This is a normal on-the-air time for KGVO, which signs off at 0300. But the station will give extra IDs to help DXers and other information as in a test. The CE is very interested in reports. Send reports to Tom McGinley, Chief Engineer, KGVO Radio, Drawer M, Missoula, MT 59801. Arranged by Eugene Vonderembse for NNRC.

#### CPC MEMBERS

CPC members are reminded to notify both National Radio Club and Newark News Radio Club of tests which they have arranged. NNRC publishes only once a month, so try to give them as much lead time as possible.

NNRC, Box 127, Boonton, NJ 07005

NNRC, c/o Tom Sundstrom, Box 205, Willingboro, NJ 08046.

### Radio Stations Broadcasting THE DOLLY HOLIDAY SHOW

The midnight 'til five broadcast service of the Holiday Inn System

Agency New York		WHRL-FM 103.1
Atlanta, Georgia		WLTA-FM 99.7
Baltimore, Maryland	WBAL 1390	
Charlotte, North Carolina	WBT 1110	
Dallas, Texas	WRD 1310	
East, Wisconsin	WBIZ 1400	
Grand Rapids, Michigan		WJFM-FM 93.7
Houston, Texas	KXYZ 1320	
Lancaster, California		KOTE-FM 106.3
Leamington, Ontario,		
Canada	CHYR 730	
Leesburg, Florida	WLBE 790	
Los Angeles, California		KNOB-FM 97.9
Memphis, Tennessee	WMC 790	
Miami, Florida	WOCN 1450	WOCN-FM 94.9
Nashville, Tennessee		WSM-FM 95.5
New Castle, Indiana	WCTW 1550	WMDH-FM 102.5
New Orleans, Louisiana	WHOE 1060	
Pittsburgh, Ohio	WPAY 1400	WPAY-FM 104.1
Raleigh, North Carolina	WPTF 600	
Sacramento, California	KFBK 1530	
Scranton, Pennsylvania	WICK 1400	
Westerly, Rhode Island	WERI 1230	
White, Kansas	KAKE 1240	

WHRL-FM Holiday Inn Directory (Feb. - Jan. 1972)  
ALBERT S. LOBEL



(LVF)-Larry Flegle, 1004 E. Powhatan, Tampa FL 33604  
 (JAD)-James DeYong 1514 Greenbrier Dr., Huntington, WV 25704  
 (PRM)-Paul Mount, 471 Emerson Ave., Teaneck NJ 07666  
 (JMP)- Jim Potterba, 949 Queens Dr., Yardley, PA 19067  
 (TRS)-Thomas R. Sundstrom, Box 205, Willingboro, NJ 08046  
 (PRD)-Paul Daplyn, 830 Denison Crescent, Ottawa, ON K2A 2N5  
 (mrm)- Ye Editor.

\*\*\*\*\*  
 Well, that's it for another wk. One note: the week of 11/5 was extremely good for SSS DX due to a very strong SSS Aurora. Hope alot of ya got to take advantage of it!! Once again, I would appreciate it if EVERYONE pull ALL r/c'S, and list them SEPERATLY at the end of your reports! It sure would make the job easier at this end! 73's, and good DX!

**CENTRAL**

Editor: Richard C. Evans  
 Box 2048, Gary, Indiana

**OF SPECIAL INTEREST:**

1550 WAAY AL Huntville, has gone NSP, beginning 10/1. (TB)  
 \*\*\*\*\*  
 550 CPNB NB Frederickton, 2109-2112 11/6 poor to fair u/KTSA w/Nx and talk show. Not many Canadians hrd here. (PH)  
 KFYR ND Bismarck, about 6 spots mentioning Mandan and Minot 0015 11/8. Het (assumed CMAN) kind of "absorbed" WKRC; looping straight west brought this one in over het. Lost to KSD by 0030, but did anyone else ever find a Cuban het useful? (JCK)  
 570 WKYX KY Paducah, 11/3 0152 being its usual pesty self, fair signal. (MLF)  
 WMCA NY New York, with "Long John" and area code 212 phone no. o/mess, 0050 11/8. (JCK)  
 620 KTAR AZ Phoenix, fair u/WHEN w/NBC Nx 0300 11/12, a good bet for AZ now that they are NSP. (DP)  
 WJDX MS Jackson, good w/Bill Tanner Show until pattern change 1815 11/3.  
 WHEN NY Syracuse, on top all MM (JCK)\* w/rock 11/12. (DP)  
 680 WCBM MD Baltimore, fair w/LSU-Ole Miss FB 1725 11/3. (JCK)  
 690 WAPE FL Jacksonville, QRM'ing WVOK with "Great Ape" ID 1723 11/1. (JCK)  
 WTIK LA New Orleans, o/u WVOK w/record spot 1733 11/1. (JCK)  
 710 KEEL LA Shreveport, w/spot for sears incl. Bossier City 1745 11/8. (JCK)  
 730 WLOR GA Thomasville, 1641-1645 11/6 fair o/KTRU w/s/off ID as "Georgia Giant". (PH)  
 860 KOAM KS Pittsburg, ID & NBC Nx w/much CJBC QRM 1800 11/8. (JCK)  
 920 WMEL FL Melbourne, steady w/light pops w/ K\*RN nulled 0233 11/5, correct NP book. (JCK)  
 WGST GA Atlanta, 11/3 0255 good signal, armchair copy, fair catch, but after 15 min. I realized I'd never get 3 items out of them for a logging. (MLF)  
 930 WMGR GA Bainbridge, good o/WGNT/WKCT w/ rce's favorite Mx 1824 11/7. (JCK)  
 940 WCIT OH Lima, 250 watts at s/on 0700 fading signals. 11/8. (MH)  
 WCSW WI Shell Lake, in fair o/WGRT slop with s/on 0700 11/9. (DP)  
 990 KNIN TX Wichita Falls, w/"K-nine Wx" 1813 11/8. (JCK)  
 1060\*\*KHYM\*\*TX\*\*Gilmer, on the air 11/5 repairing xmtr, said lightning hit off the air for 6 hours working on it. Good signal, taking cleect px(??-rce) from all over the country. Said they would QSL to anyone. Hope many hrd this one. 0400-0430:  
 1070 ???? ?? UNID, 11/3 0210 very good (TB) signal. My LW receives N-S, and they were playing some really funky Mx such as "Billion Dollar Babies" by Alice Cooper, "Adventures of Panama Red" by New Riders of the Purple Sage, "To a Black-Hearted Woman" by Allman Bros.,

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 and others. Sounded too good a tone to be a pirate. Any help? (MLF) (Whatever happened to the groups like the Fleetwoods,hi?rce)  
 1100 KREX CO Grand Junction, 11/5 2320-0100 has SS programming during this period, SS speaking anncr. Good reception. (DAB)  
 1110 WBCA AL Bay Minnette, s/off w/SSB 1815 10/30. (JCK)  
 WKRA MS Holly Springs, Nx and appeals to conserve power 1818 10/30, fade before s/off. (JCK)  
 1150 WGGH IL Marion, 1745 11/5 with s/off. Good signal here. (PH)  
 WGOW TN Chattanooga, 1525 11/6 good at Times w/RR Mx. Unusual to hear station at such a time. (PH)  
 1220 CJRB MAN Boissevain, 11/5 0117-0130 Exc. on RS w/"Classics til Dawn" //-CFAM,CHSM; best of the 3. (DAB)  
 1230 CJOK ALB Fort McMurray, 11/5 0108-0110, exc. at s/off w/YL anncr. S-9 on meter, clear, easy copy. (DAB)  
 1240\*\*WHBU\*\*IN\*\*Anderson, "operating on assigned freq. of 1240 khz" app. testing, in jumble 0208 11/3. (JCK)  
 1260 WGWR NC Asheboro, Nx and Wx w/WNDF nulled 1805 11/7. (JCK)  
 1270 KADL AR Pine Bluff, good, s/off mentioning FM 94.9, 1759 11/2. (JCK)  
 KFYJ TX Fort Worth, in o/WXYZ 2209 11/2. RR Mx, promo for Sat. FB game, two movie ads.  
 1300 WRBC MS Jackson, Bombing in o/semi-nulled WOOD w/RR Mx, ad for a jeans store frequent jingles. 2010-2115 11/2.  
 1330 WJPR MS Greenville, 11/2 2007 end of Newscast, Wx, ID 2007.  
 \*\*WFBC\*\*SC\*\*Greenville, w/ET/TT from 0031 11/12. (KDF) (JCK):  
 1360 KXOL TX Fort Worth, Nx and Wx 1828 11/2  
 1370 WKIK MD Leonardtown, poor signal u/WSPD w/s/on 0601 11/11. (DP)  
 1400\*\*WNSL\*\*AL\*\*Decatur, 11/12 w/ET/TT ID 0452(KDF)  
 WGIL IL Galesburg, made an afternoon appearance 11/9 1744 w/spots and Wx. (KDF)  
 1410 KBUD TX Athens, 11/8 1825 poor w/Nx, hrd on FT at RK's 1 1/2 years ago. (KDF)  
 1440 WAJR WV Morgantown, w/Miami/WV FB 0140 11/3. (JCK)  
 1450 KSIW OK Woodward, s/on 0700 (0800 Sun), s/off 2315 after Nx & Wx. 1000W-D, 250W-N. (DR)  
 1480\*\*WJBM\*\*IL\*\*Jacksonville, on ET per TM tip 0601 w/various tones & ID 11/6, hrd by several C.A.D. guys.(KDF)  
 \*\*KLEE\*\*IA\*\*Ottumwa, ID o/WLEE 0130 11/3 app. testing. (JCK)  
 KBEA KS Mission, 0700 11/5 at 0800 strong signals. (MH)  
 KLEO KS Wichita, C&W Mx, jingle hrd 1909 11/1.  
 \*\*WMAX\*\*MI\*\*Grand Rapids, 11/12 0233 noted w/ET with music. (KDF)  
 KBOX TX Dallas, 1949 11/2. Had "K-Box Bulletin Board" (PSA's), followed by jingle and C&W Mx. (JCK):  
 1490 WLEE VA Richmond, fair w/Rock 0103 11/3  
 KOTN AR Pine Bluff, noted here 0237 11/5 fair signal Nx & Wx, new here(TB)  
 KTTR MO Rolla, 11/8 1822 booming in almost even w/WOP^ a/Nx, not such a good catch afterall, hi. (KDF)  
 1500 CKAY BC Duncan, 11/5 0312-0315 very poor at s/off way u/KSTP, Difficult to copy w/KSTP partially nulled.  
 WBRI IN Indianapolis, on for NRC //(DAB)\* test, great signal, religious and march music. 0300-0330 11/5. (TB)  
 KOKN OK Pawhuska, on tempo. w/info on man hunt w/info and C&W, good signal. Anncd. as day only spec. on request from local police 2000-2130. 11/8. (TB)  
 1530 KMAM MO Butler, 11/6 1757 fair w/CLs in mess. (KDF)  
 1540 WSWG MS Greenwood, 1700 11/6 w/IN & Nx(PH)  
 1580 WDQN IL DuQuoin, 11/8 1748 in briefly with s/off. IL #90. (KDF)

1590 KGVB KS Great Bend, s/off u/WAKR 0015  
 11/1. (JCK)  
 1600 KMDO KS Fort Scott, 11/9 1815 poor with  
sign/off. (KDF)  
 KNCB LA Vivian, 11/8 1814 poor with  
s/off, unn. (KDF)

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NOVEMBER 24, 1973

at 0300. S/off mentioned they are the radio voice of "Cosmopolitan Vancouver," and that they would return at 0830. (JAB-CA)(11/12)  
 Burbank w/rr during SSS 11/4 1854, fair sig, nuthin' else. (BH-WA)  
 Lodi, s/off in EE, then SLOW choral SSB 11/11 1958, after end of RS in SS. (BH-WA)

**A TIP OF THE HAT THIS WEEK TO:**

- DAB - DARRYL BELANGER, Box 498, Swan River, Man.
- PB - PHILIP BOERSMA, 15570 Cleveland Street, Spring Lake, Michigan 49456
- TB - TOM BUTAS, 5612 Alta Dena Drive, Huntsville, Alabama 35802
- KDF - KARL FORTH, 630 S. Ardmore, Villa Park, Ill.
- MLF - MARK L. FISHER, 3032 Boynton Avenue South Bend, Indiana 46615
- MH - MIKE HOGAN, 4811 Euclid, East Chicago, Ind.
- PH - PAUL HEFLIN, 231 Valley Ridge Drive, Jackson, Mississippi 39206  
 (Welcome to the column, Paul!)
- JCK - JOHN C. "CHARLEY" KELEHER, 3924 Sleepy Hollow Lane, Port Wayne, Indiana 46804
- DP - DAVID PETERSON, 800 Humboldt, Winnetka, Ill.
- DR - DAVE ROGERS, Box 348, Buffalo, Oklahoma

1500 KROQ CA  
 1570 KCVR CA

New Veries: v/l KJOY, KFIV, v/f KRNK for April TEST, v/q KGA, JOBB-830, v/CM KPHX. Well ex improved much this past week, so I hope to see more of you reporting to your DX column westerners. Until next time, '73's

# DX FORUM

EASTERN  
 EDITOR: BRUCE HEINBURGER, 1710 CALDWELL RD., ANN ARBOR, MI 48104

George W. Jensen - 4604 Annapolis Ave  
 Baltimore, MD 21206

A good turnout this time. DXM is here consistently on MM's via airmail, two days after being mailed. Ron and Mike, your first columns look good to me. Interesting to note that Ron Schatz and I both have the same make of typewriter's, though type style is somewhat different, as he has the polyglot keys I don't need. New terminal is supposed to be finished 11/15 (tomorrow as I type this). I can be moving anytime after that, though I understand now that they are apt to give me only a few days notice. Must be going. 73.

After a dull summer of DX (or lack of it due to poor cx), cx here of late have really improved with the addition of several new IAS & 1 new state (KS). Hope it continues. Intend to handle the job of Elections Chairman to best of my ability & then some. Fairness & honesty will be more than just guaranteed. No bunnies pulled out of trick hats, just plain simple directions when it comes to any ballots & voting. A few veries rec'd are as follows: v/q WRGM YVOZ WTOD KOAM; v/l WISUN KPDP CJLM KLTR XEX WMPM WNST WGBR WENL; v/f HLR ZFB. Tom Sundstrom - Box 205 - Willingboro, NJ 08046  
 IRCA CPCers are requested to notify me of Tests as quickly as possible for the WNRRC (bulletin is monthly) & S9 (60 days leadtime, deadline 1st of each month). WNRRC missed published some early ones just by 12 hours; I mailed stenils in the a.m. & DXM came in the p.m. On another point, the Heath SB-620 panadaptor was finally fixed & returned to me 11/6. In this continuing auroral activity, the SB-620 is not only fascinating in detecting splits, but it makes adjusting the SM-2 for a compromise between maximum signal pickup of the desired stn & minimum splash from adjacent channels infinitely easier. And finally, I am beginning to doubt if R. Free America will ever return to the air. Press rpts indicate the xmtr was unloaded in Cape May 10/23 & the ship returned to the owners in FL as "being unsuitable" for Broadcasting; there is nothing to suggest progress so far, in securing another. In a conversation w/ Dr. McIntire 11/3, he only verified the press rpts while discussing another matter. Watch press rpts for the progress of a 2nd bill, this time by Rep. Hunt of 1st district, NJ, to grant WXUR its license renewal. 73.

WESTERN  
 EDITOR: JEFF BRASIER, 10341 SHIRLEY AVE.,  
 NORTHBRIDGE, CA 91324

**This week's supporters are:**

- (NG) Nancy Hardy..er..Gantzer- 3122 Simpson Ave., Apt. 1, Hoquiam, WA 98550 HE-30 w/SM-1
- (BH) Bill Hardy- 303 W. 10th St., Aberdeen, WA 98520 HE-30 w/SM-1
- (GP) Gary Parton- 959 Rich Ave #13, Mt. View, CA 94040 Kenwood 2120 w/spiral loop
- (JAB) Jeff Brasier- 10341 Shirley Ave., Northridge, CA 91324 HQ-129-X w/box loop

- \*\*\*\*\*
- 590 KHQ WA Spokane in o/KFXM, CMW, KUGN w/c1 mx 11/7. ID at 0219. (JAB-CA)
  - 620 KTAR AZ Phoenix is now 24 hrs-SP-SM. (JAB)
  - 740 KTRH TX Houston 11/12 0621-0625. Hrd local nx w/Howard Finch rptng for KTRH. KCBS off for ET. Xlnt sig. (GP-CA)
  - 870 KIEV CA Glendale 11/13 2015-2030 SSS. Gud strong sig coming in up to s/off. MoR format. 5kw Day serving LA. (GP)
  - 910 KURY OR Brookings 10/24 0900 s/on followed by "Early Bird nx", gud. (NG-WA)
  - 930\*\*KYSS\*\*MT Missoula f/c 11/5 0325-0330, Xlnt testing w/c&w mx. F/c list says TT. (NG-WA)
  - 970 KOIN OR Portland 11/13 0100-0115. CBS nx on the hr, then local nx, sports, wx. Gud recpt. w/MoR mx. (GP-CA)
  - 1000 WCFL IL Chicago in fair w/s/on 0600 11/12. KOMO off, but another OC was noted in there. (JAB-CA)
  - 1090\*\*KING\*\*WA Seattle in poor w/TT o/SS stn., 11/12 0442-0453, 0616-0619. XEPRS off for the 3rd MM in a row. WBAL and KAAY didn't show. (JAB-CA)
  - 1130 CKWX BC Vancouver 11/13 0300-0330. I hrd them just as a local, local & clr. Nx on the hr, then DJ Trevor Graham w/a rr show. Gud stn from Canada. (GP-CA)
  - 1300 KOL WA Seattle 0253-0300. Hrd the DJ ann. the stn ID w/rr mx. Clearly hrd then faded out. (GP-CA)
  - 1370 KGEN CA Tulare in w/s/off 1945 11/13. (JAB)
  - 1410 KRML CA Carmel w/spot for store in Monterey. Fair o/u KERN, KKOK 1950 11/13. (JAB)
  - 1440\*\*KEWI\*\*KS Topeka ETing most of MM w/rr mx. Played Gary Puckett records over and over. ID at 0345 11/12. (JAB-CA)
  - 1470 CJVB BC Vancouver in fair Sun. Night, MM o/ KELA until their s/off at 0205, then o/u KNDE. Had Canadian nx until 0220, then cl mx until their s/off

Paul Mount - 471 Emerson Ave. - Teaneck, NJ 07666  
 Greetings grupe. Been logging everything in sight lately. More on that later. Only a couple a veries and an odd thing at that. On 4/20 I sent a rpt to WJAS 13Q & never hrd from them. Then on 6/9 I sent a rpt to WKPQ w/no reply. Then last week I got 2 cards, one in an envelope w/out a postmark, both saying WKTQ and 1 for each of the above date, tho neither was to WKTQ. How do I count these. Also got v/f+CM from CPGO only 55 days. How do you get WUOC WINDR WHDH WLSR WOMB WCTC WRC CHUM WDIC WIBC WIIIH WNHG WMMN to verie? All of these sent o/3 months ago w/RF & no reply. Ideas, suggestions welcomed. If you want some old 1973 SCs send a SASE. 73s for now.

Jim Poterba - 949 Queens Dr. - Yardley, PA 19067  
 Greetings all! Just a brief Forum rpt to relate the latest activities. The discussion of long-path Okinawa reception is most interesting - keep it up! FJP's idea to re-start the 'preview' type article is good - I hope it's followed up. Latest activity here: veries-BBC-908 SWF-1016 Lopik-746 BR-1602 VOA-1196 HCPA2-540 YVLT-830 WLEO KBUY CKLY WMLP WCCR WKYB WKTQ WVLC WLSV WBBC WTOD WTCR WTCW WSAI WGHQ WMBI & WWHY. Lately auroral cx have seemed to prevail here, see DXR for details on some rare SSS catches! (At least they're rare to me, h). The call-copies in DXM make it all the more interesting to read - keep up the good work.

Old Markewicz JA. - CFS Lac Ste. Denis  
Quebec JOT 1NO

After rejecting the CBC big plans for Radio 1 & Radio 2 which would have seen the development of complementary AM + FM networks, the CRTC gave approval of 6 FM stns the CBC applied for but were rejected last March. This means that the double network concept for CBC is alive again. Also CFOX Montreal, has changed their format from all C&W to a mixture of country & pop in the hope of improving their very poor ratings.

Dave Schmidt - 42 Chelwynne Rd.  
Castle Hills - New Castle, DE 19720

This season seems to be moving right along these days. Varies from WCCR WEZY WNGA all v/ls. Got a strange v/n from WKDQ-1320 for my rpt w/ppc to WEPQ. Maybe they don't want to admit they ever had the call WKDQ, hi! Will send a rpt to WRTQ when I get an evening off & manage to stay home. Very strange day opening noted 11/7 around 1500. Things like WAKR WNTN CHIN WENE were all atop the regulars here, had one on 1570 w/snow tire sales, racing rpis from Greenwood, & MoR, later mentions of Utica, NY were hrd, but OKLM managed to pull the AN nest bit at 1515 & kill any hopes for an ID. By 1545 WTOW/WBUX were battling it out as usual. As to looking at the DX Calendar, NNRC isn't doing such a fantastic job. Over 50% of the stns they have listed have either run past tests for the IRCA or NRC, most are plain frequency checks (& really can't be counted as a "special" broadcast/test since it's scheduled), & most of them lack what type of material the test will consist of, something that is very needed by someone who wants to know what to listen for, because they may very well need the stn. The CPC has been rough for myself, 5 requests out, 2 haven't answered, 1 said no completely & one agreed, the other was just sent out w/this DXF rpt. And what has happened to the IRCA's CPC this year? Make sure you try for WMBA. If he runs the modulation as high as in the past on EPs, they should do very well. 73s for now.

Paul Mount - 421 Emerson Ave. - Teaneck, NJ 07666  
Nov. 6th started as any normal day. I was trying to go to sleep, woke up around 0100, sleepy-eyed dialed 1430 & hrd WVAM's tone in a lotta QRN. Then that night while dialing around for some nonlocal mx, I hit upon WZIX, just changed from WORK bombing in w/election results. Then I dialed down hoping to hear Jackson Armstrong on 130. I hrd him, w/other mx, IDs sounded like WCLJ & WPOJ. Looked up all W Js, found FL. No ID at 2200, so I invested my 70z & called. I asked if they have a DJ named Ron Evans, & was told I was speaking to him. I told of my QTH & we both went crazy. Myself, I was happy to log FL, had hrd WSUN, WIOD, & WMBR shortly b4. So there's 3 new ones unintentionally, & I stay up MMs w/no new ones. Ironic. Varies in: WOOK, CE John Hofstetter seems to be a DXer, but he's hrd nothing (besides WOOK) on the graveyarders. Also WCRO from DX Test, v/f. Up to around 70 varies. Others to be mentioned later. 73s.

Bob Foxworth - GEO 2111 - New York, NY 10001  
(cont. from last issue-Brn) Some examples of midveering reception (wore vs. loop) are on 560, WHYN & WGAN mixed w/WFIB, while unloopable WFIL nearly alone w/loop; on 590 I had WBEI o/Cuban vs. the opposite; on 630 the wire gave Canadian (either CFCY or CFCO) & WPRO as against Cuba & WPRO on loop. On 640, the wire gave me a fair CHN. On 990 I had a bit of CBY seemingly // CBA-1070 w/contnt; inaudible on loop thru the hash. On 1000 a fair CKBW & on 1220 a good CKCW, again, much better than on the loop. 1280 gave CJMS & 1490 gave WSAR thru locals WADO & WHOM; after 0900 WFOR was sometimes atop 1490 & so forth. At the same time I was hearing ZDK through & sometimes o/WWE between 2000 & 2200 w/calypso. Paradise-1265 was o/powering adjacent domestic channels, again, both were hrd better than w/loop. However the LW is a lot more sensitive to noise.

C.M. "Stan" Stanbury - Box 218  
Crystal Beach, Ont. L0S 1B0, Canada

Re my comments in the 10/27 DXF, which were slightly altered, it should be made clear that Hunt's book is consistent w/my DECEMBER article on R. Swan/R. Americas in 2 specific areas - the multi-site capabilities of the stn & (much more important) the basically military nature

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of the operation. I am most certainly not endorsing Hunt's overall political philosophy as the editing of my previous report inadvertently made it appear. For those who are interested, a more detailed review of the radio aspects of "Give Us This Day" will be found in the Nov. CIDX MESSENGER, and of the military aspects alone in the 9/30 NY Times. Also, in view of what is going on outside the DX sub-culture (in the real world) I think it appropriate for me to note the significance of 2 such philosophically different publications as DECEMBER & "Give Us This Day" providing collections of evidence which both lead to the same factual conclusion. (CMS: I am sorry that my editing altered partially the meaning of your report. It was done solely to reduce that matter to approximately the 15 line limit per rpt-Brn)

Fred Precht1 - 6128 Glade - Cincinnati, OH 45230  
With all this talk about the energy crisis, lowering thermostats, limiting the use of air conditioning, reducing highway speed limits, not having Christmas display lights, etc., I have a suggestion. There are probably not more than a "mere handful" of people that listen to the radio all night long. Therefore, I believe it should become mandatory that all full time radio stns shut down from midnight to 0600 in their own time zone, w/ perhaps a few exceptions. Grant special permission to a few 1-A clear channel stns that have a wide coverage, to stay on all night, for the "few" that do listen to the radio during the wee hours. This would be beneficial three ways. 1-This would give the "night owls" something to listen to. 2-It would conserve energy. 3-It would be the greatest thing that could ever happen to us DXers, since radio was invented. 73s & good DX.

CENTRAL

EDITOR: JOHN ZONDLO, SHALES HALL, BOX 120, MUNCIE, IN 47306

Michael Hogan-4811 Euclid Ave.-East Chicago, IN 45314

Seems like the members of IRCA are a little lazy to send reports, seems like only 25% of the club members are really active. Let's wake up and report to our sections and features more often. An active club is a healthy one. I'd like to congratulate the CPC on the DX tests so far, looks like some really needed catches are among the tests. 73's and good DX to all!

Paul Heflin-231 Valley Ridge Dr.-Jackson, MS 39206  
Greetings again. DX this season is off to a good start, especially daytime DXing. 11 new stations heard, bringing totals to 323/55, 32/25, 2/0, 8/1. (Section of report cut here- remember, Paul, this is CDXF, not CDXR. Lists of stations heard and reports sent to are not meant for this column-jz) New veries are v/q KGBA, and WAAK via Tom Butas. After 3 f/up reports, still no sign of WBOX verie. Well, that's about it from here. Until next time. 73.....

Bill Bates-5938 White Hill Dr.-Jackson, MS 39206  
Hi gang, this is my first report, so here is my intro. I'm 14 and a freshman at Council #7 High School. I've been in the IRCA for about 5 months. I've been DXing on ECB for about nine months. My equipment is a Hallicrafters S-53A and a GK-1. My totals are a meager 359/77 (meager?-jz). I caught the WRIX, WBRI and RHYM tests. (CDXR material deleted-jz) Latest veries are KXYZ, WREC, WPT and WIBV. Has anybody got WMIK yet? 73's. (Welcome to IRCA, Bill. Report often.-jz)

Philip Boerema-15570 Cleveland St.-Spring Lake, MI 49456

Hello, I'm back again. The reason for this note to CDXF is to comment on Gene Martin's letter to the Denver Post, reproduced in 10/11 DXI. Gene's got a point about nobody listening to the early-morning AM programming (except us DXers, hi), and therefore it would seem a waste of electricity. But sometimes one seems to get the impression that the FCC has over-regulated the broadcast industry on it is. Dr. McIntire is a case in point. If there were some way to pressure the industry into voluntarily shutting down stations for 4 or more hours a day, it would probably be better. One thing the FCC could do, tho (and has done in the past) is give a freeze on all new-station applications for awhile. The FCC is already too crowded. 73's.

D X W W W  
ORL  
IDB

Ron Schatz § Box 2814, AMF § Miami, FL 33159  
AC305-945-4915 eves § Deadlines: Tuesdays

Support this week is relatively contracted, tho the PADXR still predominates. I've had one of those incredible weeks when everything goes wrong, so I won't complain too loud, hi. § As a point of info, this is being typed with an IBM carbon ribbon. It's use by ALL editors will help us secure 2'nd-class postal rates. § Some reporters are contributing info on foreign-language domestics to this column. This is all new to me, but I think it a good idea - within limits. As I see it, the idea is to note those stations that could easily be confused with true foreigners, especially full-time SS's in Miami, NYC, etc. This does NOT include the likes of a station in Buffalo broadcasting in Polish on Sunday AM. For now I'll limit these reports to SS under sky-wave propagation conditions and request that anything else be sent to the various domestic round-up columns. Even this much inclusion of domestic data may be in violation of our Editorial Policy, but I'll risk it and wait for a court decision, hi. Comments on this, and on wether to list the domestics separately or w/in the PADXR section, are solicited. § The big news this week, DX-wise, is MALAYSIA on 1475 kHz:

Trans-Pacific DX Roundup

9 items from Bisquera (HI), Hardy (WA), Gantzer (WA) Lobel (S.Dgo), Peterson (SFO), & Seaver (S.Dgo)

- 620 RSFSSR, Kemerovo, Sun. AM 1601, M & F alternating ID, followed by F w/nx in RR, fair reception (Bisquera, HI) Date? (RFS)
- 635 KOREA-N, Pyongyang, Sun. AM 1608, F in KK? sounded like nx, very good (Bisquera, HI)
- 650 HAWAII, Honolulu 11/5 0804 ending ABC (Harry Reasoner) anmt. Off MM 1000-1500 (Gantzer)
- 750 JAPAN, Sapporo, JOIB 11/5 1015, female w/ID, then EE lessons by M & F. Some QRM de WSB & unID LA. Fair to poor signal (Lobel, SD)
- 1040 CHINA, Shanghai, w/CC-style Oriental mx. ID in CC 11/5 1230. Was in quite strong at abt S-8. Some QRM de WHO, but was able to block WHO out for at least a few minutes (Lobel)
- 1120? UnID, Sun. AM 1616, Female in RR, sounded like nx. Like local, good reception. (Bisq.)
- 1310 HAWAII, Kahului, KNUI s/off w/no QRM 11/5 1001 w/big choral production number. S/on time not given. HI no. 10 here (Hardy, WA)
- 1475+ MALAYSIA, Sabah, Kota Kinabalu (per CAT) This station heard 11/5 1057-1202. From tune in 1057 to 1100 a 14-15 note IS was played,

chimes or xylophone, each lasting 10 seconds, 4 per minute. MoR mx until 1130 w/man speaking between songs, vocals & guitar instrumentals. At 1130, 6 short pips, then more talk. What seemed to be news was broadcast until 1140 when 2'nd announcer took over. Several mentions of Malaysia & one of New Delhi. At 1200 an anthem was played & the station went off the air at 1201:30. The language was probably Malay or similar, the cadence was quite similar to EE. Deep fades throughout, generally on 5-7 minute intervals. No +tive ID heard. This is an open frequency for this signal to travel over 8000 miles & could provide a very good opportunity to investigate long-distance overwater reception characteristics. By the way, scratch my previously claimed receptions of RSFSSR on 1475 this fall, another example of "automatic" identification (Seaver, San Diego) § Not necessarily, Randy; Art Peterson seems to think otherwise: § On a tip from Ralph Sanserino who was alerted to this by Bill Trumbee in Hawaii J listened to this frequency from 1055 to 1200 11/5. There were chimes 1055-1100, then voice (male), likely a s/on message, & lots of mx following. At 1130 Malaysia was distinctly mentioned, & it would be easy to convince oneself that "Inilah Radio Malaysia" was what was said (which is the ID for Malaysia stations), but the caution of experience prevents me from jumping to that conclusion. There was a long talk 1130-54 in a SE-Asian-type language (NOT CC-type), mx following, including the "Mission Impossible" theme mx. Much of the mx I heard featured or at least included guitars. At 1200 there was a merch-type an-

them, & the station apparently left the air at its conclusion. I am very tempted to say this is an unlisted Malay. The time was after sunset in Malaysia. The WRTH sais the Overseas Service of Malaysia has a chime IS. The language certainly sounds like the Malay I heard overseas. "Malaysia" was mentioned at ID time. The 1972 WRTH indicates 3 50-kw xmitters planned at Johore Bahru. HOWEVER, I suspect this is actually the USSR-1475 station broadcasting to Malaysia & vicinity. First, Malaysia is in the GMT+7.5 time zone, so programmes in Malaysia would start on our half-hour; this one did not (§ Pse excuse the interruption, but my FB-IS time-zone table lists Sarawak/Sabah at GMT+8! -RFS §). And the xmitter was on the air for only an hour, hardly a logical pattern for a Malay station during prime-time hours, but corresponds perfectly with the old pattern on USSR-1475. Also, the anthem heard at the end sounds like a USSR-type anthem & like nothing I heard overseas from Malaysia. In addition, there should have been 6 pips at 1130; there were none (§ Not per Seaver above, who was listening simultaneously §). Lastly, the signal was strong during fairly poor TP conditions - more like 100 kw from Asiatic USSR than 50 kw from Johore Bahru (§ or how about 100+ kw from Kota Kinabalu, 1400 km. closer?? §). During the period there was infuriatingly heavy QRM from semi-local KNDE-1470; would some Sacto DX'er arrange for a power failure at KNDE at 1050 next MM?? Frequency measured as 1474995 Hz (Peterson, SFO) § We're requesting DF & frequency measurements from C.A. Taylor, s'il vous plait. Do you concede, Art?? (RFS)

(SEE BOTTOM OF NEXT PAGE)

Trans-Atlantic DX Roundup

6 items, all from Elliot Strauss (NJ):

- 683 SPAIN, Sevilla, RNE 0335 tune-in drums, SS singing, 0345 light orch. mx, 0350-0400 cont mx, no tx (talk? -RFS), US pops done in light pop style, "Can't Get Used to Losing You", "Puff the Magic Dragon. 0400 ID as R. Nac. Espana, ment. of Madrid, Barcelona in nx b'cast at 0400. Still going at 0415, 0615 checks 11/7.
- 737 SPAIN, Barcelona, RNE 11/7 0635-45 SS, telephone talk show, chimes between calls, frequent mentioning of Barcelona.
- 818? UnID, def. TA noted w/AA chants 0537 tune-in, possibly Morocco or Egypt. Both listed as on air this hour. Fairly well buried in QRM, N by 0545.
- 944 FRANCE, Toulouse, ORTF at 0550, OM in FF, ment. ORTF, fair signals, still going 0625 check 11/7, better after CBM s/off at 0610.
- 953 SPAIN, Madrid, R. Intercontinental 0600-10 SS, singing, eds, mention of Madrid, fading, noise by 0610. Fantastic TA night - best ever for me; must be the R-390 11/7.
- 1196? UnID, definitely FF here w/man talking 0705 -0715 f/out. I don't know whether VOA is in FF at this hour. § Change in Agadir Berber Service?? (RFS)

On to politics and religion:

"Was looking thru my copy of IRCA Foreign Log, Vol. 2, & noticed a mis-spelled word. The person reporting this station probably guessed at the spelling. The word is the name of the Israeli National Anthem. It should be spelled "Hatikva", not "Haticghva", as it was spelled. Just thought I'd bring this info to all who might be concerned. I know I am right - I am Jewish & should know how to spell "Hatikva". (Albert S. Lobel; San Diego) § The CORRECT way to spell the word can't be rendered even on this typewriter, hi (RFS)

Pan-American DX Roundup

Over 40 items from 13 reporters:

- 595 DOMINICA, Roseau, R. Dominica 11/7 w/exc. signals in EE, playing US standards such as Peggy Lee, Nat "King" Cole, etc. ID & TC 0216 (Sundstrom, Phila)
- 620 COLOMBIA, Cali, R. Tricolor, SS, OM tx, mentioned Bogota, 0740 11/5 (Strauss, NJ)
- ...? CUBA, unID noted AN 11/3 //640. Who's this? (Merrill, OH) CMKF in Baracoa, Orte. (RFS)

640 CUBA, Habana, CMQ, 11/1 1945 good signal w/ some skit by 2 men that probably would have been very funny if I understood SS, judging from the canned laughter (Fisher, IN)

660 COLOMBIA, Cali, R. Uno L&C w/US oldies & LA mx. SS ID 0743 11/5 (Strauss, NJ)

....? UnID, poor signal w/African mx after "Your Radio Doctor w/Pasadena, CA. ad 0114 10/23. ID between pgms unreadable. (Boyd, OK) R. Lumière in P-au-P or the new R. Soleil in St. Lucia, WI. (RFS)

670 COLOMBIA, Bello, R. Tricolor 0745-50 L&C w/ dance-type mx, YL SS anc 11/5 (Strauss, NJ)

675 COSTA RICA, San José, Sonora, LA mx, SS, deep in noise 0320-22 ID as R. Sonora 11/7

680 PUERTO RICO, San Juan, WAPA 11/6 topping several other SS stations w/ID noted 0107, into mx, good signals (Sundstrom, Phila)

700<sup>c</sup> JAMAICA, Montego Bay, JBC, good signal in aurora w/no sign of WLW, w/JBC - Voice of Jamaica ID & back-back MoR 0432 10/21 (Boyd, OK)

720 COLOMBIA, Barranquilla, O433, Omasoras Unidas, HJAN 11/6 with apparently a nx report giving town names, many Barranquilla, as datelines for news stories, ID & announcements 0056-58, then back to nx. Good to exc. signals over WGN. New. (Sundstrom, Phila), also below:

750 COLOMBIA, Bogotá, R. Melodía, HJCU 11/6 w/SS pop mx 0605, continuous thru announcements & complete ID 0615 atop freq. w/exc. signals.

...<sup>q</sup> MEXICO, D.F., XEX returned in about 3.5 weeks for 2 IRC's & SS report form. Sent personal letter in SS. V/s: Jorge Galina Veraza, Director de Continuidad y Operación, XEX, Radiodifusora México, S.A., Av. Morelos 16 - 6<sup>o</sup> piso, México 1, D.F. (Jensen, Balt)

740<sup>v</sup> CUBA, Pinar del Río, CMAQ (ID corrected by RFS) noted 11/7 o/CBL 0215-30 w/in a few hundred Hz of being on freq., but back on 742 11/8 0030+ (Sundstrom, Phila) § Again, note: 740 is CMJL Camagüey, 742 is CMAQ P. del Río.

750 COLOMBIA, Medellín, La Voz de Antioquia, HJDK 11/7 0437 Caracol & Colombia mentioned way o/WSB. HJ no. 5 (Hardy, WA) 11/5 0755-0800 SS, LA mx, ads, TC, 0800 "noticias de Colombia" & "una voz en el camino" (Strauss, NJ) 11/6 o/WSB 0620-30, ID, w/all mx otherwise, good to exc. signals New. (Sundstrom, Phila)

760 CUBA, Habana, Reloj Nacional, CMCI, good signal w/nx & TC every minute, ID w/female anc. 1100. Some QRM de WJR. WRTH lists this station as CMCD, Vane Jones lists it as CMCD, station ID was CMCI. I suppose the station must be right, WRTH & VJ must be wrong! (Lobel, S. Diego) The ULTIMATE authority is the RFS Cuban List, which claims CMCI (RFS)

800 NED. ANTILLEN, Bonaire, PJB 11/1 1850 w/"What's New" show, fair signal. Surprising enough, none of the R. Nederland shows are listed on the pgm guide of PJB; wonder why? (Fisher, IN)

725 SURINAME, Paramaribo, SRS L&C in Dutch w/OM talk 2240, nx in progress, ID 2242, Paramaribo mentioned 11/6 (Strauss, NJ) Out of seq/

810 COLOMBIA, Bogotá, HJCY, R. Sutatenza & Acción Cultural Popular ID's, heard at 2300 10/30. § UnID station heard under HJCY 10/3 0141-0227 SS ID as "Radio Reportado Mundial, sounded like a continuous news pgm. ID'ed every few minutes. Many long fades during reception; HJCY had no fades (DeYoung, WV) § Remember, times in DXWW are GMT/CUT, which is EST + 5.

... MEXICO, Tampico, Tams., XEFW 11/5 0350 good w/many ID's, news on the hour. Strong considering KGO blasting in like a local but slightly looped out (Lobel, San Diego)

830<sup>?</sup> UnID 2250 in SS u/WNYC, who was also in SS 11/6 (Strauss, NJ) Must be HIJB Sto. Dgo.

870 CUBA, Guantánamo, CMDL 11/6 w/SS pop mx, woman anc, "La Voz de Cuba" ID 0637 w/WWL completely nulled, new (Sundstrom, Phila)

960<sup>q</sup> BERMUDA, Hamilton, ZFB1 (Pembroke used to be announced location - RFS) sent 2 form letters by air in about 2 weeks for 1 IRC. V/s: Delano Ingham, CE, & Marlene Butterfield, Dir. Public Relations. Address: ZFB, Capitol Broadcasting Company, Ltd., P.O. Box 652, Hamilton (Jensen, Balt)

980<sup>?</sup> UnID LA u/KFWB. Good signal, but faded as KFWB's rose in strength. Could not hear any ID's, in SS. Any ideas anyone? (Lobel, S. D.)

970 MEXICO, Cd. Juárez, Chih. fair signal but o/ the mess w/ID & spot for something "aquí en Cd. Juárez". 0312 10/10 w/local KAKC off w/ tower down (Boyd, OK)

....? UnID noted 0123 11/7 w/"R. Península" slogan. I have none such listed, but then again I don't have the IRCA LA Log either. Who could this be? Suspect YV- (Merrill, OH) Sí (RFS)

990 MEXICO, Mexicali, B.C., XECL 11/4 0234 stg signal, no CBW, w/XECL call given & several "R. Mundo ID's, spots for Mexicali (Gantzer, WA) 11/7 0420-38 playing US rr & living strings stuff, about 50/50 w/LA mx. "XECL Radio Mundo" ID 0436 with a few mentions of Mexicali. Signal was fantastic 0430-38 w/aurora killing, CBW. Very light KKIS (?) QRM, but co-channel from CKNW & KOMO & TVI didn't help. Most frequently used word seemed to be "Sonora"; that means "Dream Radio"? (Parks, Vancouver) How about a noisier sleeper?

1010<sup>c</sup> MEXICO, Torreón, Coah., exc. signal in aurora 0021 11/4 w/R. Felicidad ID. This is a new slogan, was R. Moderna (Boyd, OK)

1020 VENEZUELA, La Asunción, R. Margarita, noted way atop KDKA at 0110 11/8 (Stanbury, Ont)

1035 HAITI, Cap-Haitien, R. 4VEH 2258 - 2301, fantastic signals, SS, announced end of SS pgms 2300:30 EE ID frequently given by OM, ID as "Evangelistic Voice of Haiti", pgm continued in EE 11/6 (Strauss, NJ) (Strauss, NJ)

1090<sup>?</sup> COLOMBIA? unID 0730, toc low a level for ID, suspect Colombia on exc. HJ night 11/5.

1110 VENEZUELA, Carúpano, YVQT, R. Carúpano 11/6 w/ID's 0021, 0025, 0027 between records, complete ID 0031. Good to exc. signals completely o/WBT, no mean feat here, new (Sundstrom, Phila)

1120 VENEZUELA, Maracaibo, YVMF, Ondes del Lago, 11/6 atop freq. w/several announcements & ads 0005+, mentioning Maracaibo sev. tx, then ID 0010, into mx. At peak very good o/ KMOX completely, but some long fades into jumble, new. (Sundstrom, Phila)

1200 VENEZUELA, Caracas, R. Tiempo 0700 L&C in SS w/LA mx 11/5 (Strauss, NJ)

1265<sup>c</sup> ST. KITTS, Radio Paradise finally +tively ID'ed during 0921-38 11/5 reception pd. AST TC at 0924, 32, 36. At 0928 "R. Paradise, coming to you from St. Kitts in the West Indies with 50 kilowatts of Power". Usual gospel mx between TC's. Country 52 (Seaver, S. Dgo)

1270 MEXICO, San Luis Río Colorado, Son., XEMW 3/on 11/5 1324 w/calls, location, freq. Slogan was "R. Exitos" (Seaver, San Diego)

1380<sup>c</sup> MEXICO, D.F., good signal w/"XEEC - R. Eco" ID, then usual mx 0615 10/7. QRM de WMEE, etc. (Boyd, OK)

C.M. Stanbury reminds us to listen for Venezuelan election returns MM 10 December 1973.

Foreign Domestic DX Roundup

Just one report submitted in usable form. Remember the rules stated on P.1

990 FLORIDA, South Miami, WFAB, "La Fabulosa", 24-hour SS, w/mx, nx, novelas, talk, "R. Voz" continuous nx AM's. "Fabulosa Arriba" phone-answering contest. (Schatz, Miami)

1140 FLORIDA, Miami, WQRA, "La Cubanísima", similar pgm to WFAB-990. 24h SS (Schatz)

1220 FLORIDA, Miami, WCMQ, "Radioalegre", pgm format & SID almost identical w/WKAQ-580. 25C watt days, try SSS or SRS. (Schatz, Miami)

1430 CALIFORNIA, San Gabriel, KALI, 11/5 0040, strong signal in SS with what sounded like a talk show. ID 0045 as "Radio K-A-I-I" in SS. ID was in SS only (Lobel, San Diego)

1450 FLORIDA, Miami, WOCN, "Ocean Radio", SS "good" mx w/some US standards. All SS, but calls & slogan pronounced in accented EE. 24 h, try MM's. (Schatz, Miami)

1550 FLORIDA, Coral Gables, WRIZ, "Radiocentro". Daytimer w/SS PM's only, socn FT SS. Many political pgms. Announces: "La única emisora cubana en Estados Unidos" (Schatz, Miami)

LAST MINUTE FLASH...

ACCORDING TO RALPH SANSENERINO, ART PETERSON NOW AGREES THAT THE 1475 UFO IS MALAYSIA. KEEP WATCHING DXWW IN FUTURE WEEKS FOR FURTHER DEVELOPMENTS.



DXWW has been brought to you by:

- Credo Bisquera; Waianae, HI (ARB w/HQ-14CX, RS loop)
- Jim Boyd; Tulsa, OK (rx??)
- James Alan DeYoung; Huntington, WV (E'rola XR RX)
- Mark Fisher; South Bend, IN (rx??)
- Nancy Gantzer; Hoquiam, WA (rx??)
- Bill Hardy; Aberdeen, WA (Laf. HE-30, SM-1)
- George Jensen; Baltimore, MD (rx??)
- Albert Lobel; El Cajon, CA (DX-150A, IRCA loop)
- Frank Merrill; Toledo, OH (rx??)
- Jon Perkins; Burnaby, BC (Laf. HA-230, SM-2)
- Randy Seaver; San Diego, CA (HQ-180, Sanserino loop)
- C.M. Stanbury II; Crystal Beach, ONT (rx??)
- Elliot Strauss; Bradley Beach, NJ (R-390A/UFR)
- Thomas Sundstrom; Willingboro, NJ (HQ-150, SM-2)
- Art Peterson; San Pablo, CA (EQ-180, SM-1)

73 de RFS

**IRCA FOREIGN LOG**

Copies of the new edition of the IRCA Foreign Log are still available for \$3 to IRCA members. They would make a perfect Christmas gift, so tell your wife, parents, friends, or anyone else, to get you a copy for Christmas. The special bonus package of both Volume One and Volume Two, for only \$5.00 also is still available, but won't be for long, as the supply of Volume One is very limited.

DX FORUM-- CONTINUED FROM PAGE 6

Dave Milton-2632 E. Stanford-Springfield, MO 65801  
Hello everyone! Been in IRCA for a couple of years and thought it time to write QDXP. I'm 13 and very inexperienced, unimpressive totals: 33 states, 4 provinces, about 300 stations heard in all (unimpressive?-ja) Don't usually send in for QSL's but have 50. Rich Eddie wrote me and am thankful for it. Will welcome suggestions, I'll try to write often. 73's. (Welcome to the club, Dave. Keep up the support of the column.-ja)

John Zondlo-Shales Hall Box 120-Muncie, IN 47300  
Greetings. For a change, hope nobody noticed my comments in the DXW a few issues back. Instead of visiting my folks for Thanksgiving, I've decided to stay here in Muncie, working at the 10 watt giant, WBST. I'll be out in Columbus for a Mid-American conference press conference during break, so I should get to see Randy Linnehan and Cathy Woodruff. I'll also get some time off to DX. That's probably the thing I miss most now with my busy schedule. See you next week.....

Gene Martin-3303 E. Evans Ave.-Denver, CO 80210  
Still waiting here for the first European opening, although the Spanish Sahara at 650 was a very welcome new country. Up to Nov. 10, the '73 DXing season has to be rated at very poor when compared to the four preceding years. Maybe we have already passed the low point of the 11 year (?) sunspot cycle and conditions are going to get. Year-round DST will be very unwelcome here for it will take out certain TP possibilities available under standard time. But then who knows what may happen to broadcasting when the energy crisis really clamps down, as it surely will? The government is hoping to achieve a 10-15 percent reduction in use of electricity nationwide, and this may induce some stations to ponder the unthinkable: signing off now and then. Philadelphia, St. Louis and Denver under DST will see their Deep Winter sunrise at 8:22AM. But places like Ohio, Detroit, Louisville and Indianapolis will not see the sun until about 9 o'clock (hooray!-ja). It can be predicted that western portions of the E11 zone will try to move back to GMT, where they really belong.

**WESTERN**

Michael C. Worst, 3608 Phinney N., Seattle, WA 98103  
Deadline: Wednesdays

L.P. Benjamin, 3986 Mesa Cir Dr.- 201, Lompoc, CA 93436  
Hello fellow DXers. I've just recently joined the IRCA, and I'm very inexperienced on DXing the BCB. I will sure welcome any helpful suggestions from all you experienced DXers. I have been DXing the SW bands for quite awhile, but the BCB is a whole new ballgame. Have a Radio Shack DX-150-B and am using an SM-1 antenna, but because of the built in ferrite antenna, my nulling is almost nil. Can anyone out there advise me how to overcome this problem? I have been told that the ferrite antenna can be replaced with a BCB antenna coil, but I need to know, in simple

terms, how to do this. Help! Sorry that I didn't complete my introduction in the beginning. I'm 48, retired after 25 years military service, and went back to work for the U.S. Postal Service so I could enjoy all the nice compliments about the mails that I occasionally read and hear about, hi. If anyone would like to tapespond I have a two track monoral 1 7/8, 3 3/4, or 7 1/2 speed, reel to reel tape recorder, and promise to answer all tapes. Let's hear from you. 73 (Welcome to the club, L.P. Your reports should come to me. mw) (Thnx Bruce)  
Jon E. Perkins, 6137 Service St., Burnaby, B.C. V5H 1V7  
Bill - As usual, UBC has lumped on its annual load of work, so DX is a very infrequent thing here. Have noted some good aurora sessions of late, though. One verie in: CJRC #66 w/two v/q's (identical, except different vists) for my tape report. Still no sign of CBAQ, though. Merry Christmas now, so I won't forget later. 73 & Good DX!  
Bill Hardy, 303 W. 13th St., Aberdeen, WA 98520

On Tuesday, 10/30/73, an era ended here. That was the day Nancy Gantzer's Lafayette HF-M rx w/Space Magnet arrived from Fredonia. And so, now that I can go over to Nancy's during SSS and evenings, it marks the end of my six-or-so years of DXing with my now semi-famous G.E. C-2510 AM/FM clock radio. Inselective though it was, it brought in two Peruvians, four Colombians, Nicaragua, Haiti, Cuba, a whole plough of Mexicans, 8 or 9 Hawaiians, a tentative from ZCO-Tonga, plus a couple hundred domestics. So you couldn't say my DXing on it was a flop. Not bad for a \$10 consumer radio with only a built-in antenna - some guys haven't done that well with \$150 SW jobs that have a cheap BCB stuck in. The new rx is really not the first time I've had a good rx to DX on. I first got interested in BCB DXing in 1960 w/my dad's Zenith Transoceanic, after switching to BCB from the 5 SW bands on it. He gave it to me, and I used it till '65, when it just quit working after bringing in 200 stas. Now, with a loop for the first time and a god rx again, we'll see if I can get up to Nancy's 860-stn total from Fredonia! 73



Gilfer announced that their new 16 page catalog for listeners and monitors will be mailed in late November. The basic catalog will be updated by periodic Supplement mailings through 1974. The new catalog contains details on receivers, books, antennas, headphones, clocks, and accessories. Copies are free. Gilfer is the agent for many well-known products including Joystick, Barlow Wadley receivers, Telex headphones, Hamgear preselectors, Mosley antennas, Drake receivers, Franklin wall clocks, etc. They are shortly to celebrate their 20th year in business. Perry Ferrell has indicated that the publisher of "Broadcasting Stations in the People's Republic of China" has told him the book will be delayed in printing. They should be available about the end of November. They will cost \$2.95.

**NEW MEMBERS**

- John D. Harris, 1924 Goldsmith Lane, Apt. 56, Louisville, KY 40218
- William Henry Fortier, 113 Barnard Road, Worcester, MA 01605
- David F. Gleason, 7721 E. Wilshire Drive, Scottsdale, AZ 85257  
(Rejoins-- a charter member of IRCA; welcome back, Dave!)
- Erick R.K. Floden, 13 Parkside Crescent, Ottawa, Ontario Canada K2G 3B6 (Rejoins)

"THE TOP BECOMES THE BOTTOM"

Before radio stations broadcast on frequencies, they broadcast on wavelengths as measured in meters. The main dial on my first radio in 1925 was calibrated in meters, 250 at the lower end to 550 at the upper. You can translate 250 into 1200 kc. and 550 into about 545 kc.

Thus, in every city, the station operating at the highest number of meters could claim that it was at the top of the dial. DXers of that era always thought in those terms; the bottom of the dial was equated to the lowest number of meters, and the top to the highest wavelength you could reach. The introduction of kilocycles reversed this concept, for the high wavelengths became low frequencies and the low wavelengths became high frequencies. But even yet in my mind, I cannot help but think of the spectrum from about 700 to 540 as the "upper" portion of the BCB.

The DXers of the 1920's had learned their meters well by the time kilocycles were introduced by the Federal Radio Commission in 1927. WHO was on 535.4 meters, WOR on 422.3 meters, WGN on 305.9 meters, KMOX on 299.8 meters. The meticulous DXer did not round off those numbers, but took pride in remembering them to the tenth part. With the introduction of kilocycles, we had to learn that WHO was on 560, WOR on 710, WGN on 980 and KMOX on 1000. But meters were not to be forgotten; instead, the DXer added the kilocycle number to the active, working memory which our breed develops on all matters concerning stations and the broadcast band.

Before long, the kilocycles-meters table such as Tom White offered in the DXM, May 19, was firmly embedded in the minds of DXers. The translation of meters to kilocycles or vice versa was basic information available instantaneously in the first layer of memory.

Even yet, I can convert one to the other without difficulty, except that the meters-kilocycle memory hardly exists at all from 1500 to 1600 kc. The reason for this is that the BCB did not extend beyond 1500 until about the mid-Thirties.

Radio publications reaching the DXer in the late Twenties and the early Thirties presented their tables of stations by both frequency and wavelength, so the two figures were constantly before the DXer. The oldest publication I still have is a White's Radio Log from January, 1928. To pick one frequency, it shows that 820 kilocycles, or 365.6 meters, was occupied by WOSH, Portland, Me., WEBH, Chicago, and WJJD, Mooseheart, Illinois, a total of three stations, two of them dividing time. (WEBH, long since deceased, was owned by the Edgewater Beach Hotel, indicated in the call letters. WJJD then belonged to the Royal Order of Moose.)

The table of kilocycles and meters introduced by the Federal Radio Commission is slightly different from the findings presented by White in his Monitor article. The FRC table did not carry the meter figure beyond one decimal place. Where White's figures show that 630 is 475.86 meters, the FRC list used 475.9 meters. Actually, of course, the meter figures in the White table are more accurate than the FRC list, but the FRC list of kilocycle-meter equivalents is the one that the old DXer remembers.

The WRTH conversion table of kilohertz to meters also differs from the FRC table and from White's. 630 in WRTH is called 476.2 meters. These slight differences arise because different figures have been used in the beginning for the speed of light. This figure can always be spotted in such conversion tables by checking the meter equivalent of 1000 kilocycles.

The White conversion table shows 1000 to be 299.79 meters, thus the speed of light that entered into his calculations was figured at 299,790,000 kilometers per second. The FRC conversion table was based on a speed of light of 299,800,000 kilometers per second, and, accordingly 1000 kc. was figured at 299.8 meters. The WRTH table converts 1000 into 300.0 meters, a nice rounded-off figure based on a much-rounded-off speed of light.

Over the years, I have found it useful to have memorized the table of kilocycle and meter equivalents. The two figures have applications far outside the BCB. If 700 kc. is 428.3 meters, it is also true that 428.3 kc. is the same as 700 meters. It also follows that 70 meters is 428.3 kc. Furthermore, seven meters is 42,830 kc.

The table of kilocycle and meter equivalents for the regular BCB also equipped me to understand the short waves when I first ventured into that DXing region. For example, here was the 25-meter band located just below 12 Mc. I could understand that circumstance at once, inasmuch as 250 meters was 1200 kc. Likewise, the 31-meter band between 9 and 10 Mc. could be connected to 310 meters, which is about 970 kc.

The connection even extends into television frequencies and the FM portion of the spectrum. Channel 3 is 60 to 66 MHz; the numbers remind a DXer of that span of the BCB from 600 to 660. 600 is 499.7 meters, while 660 is 454.3 meters. Now move the decimal two places to the left: 4.99 and 4.54 meters. Once you convert the meters to feet, you are equipped with a precise understanding as to the optimum length of a TV antenna bar designed for Channel 3.

- Gene Martin, 3303 East Evans Ave., Denver, CO, 80210

Editor's note: Thanks to Gene for another fascinating article on what it was like to DX in the 1920's and 1930's. Gene sent this article in late May - I'm just now getting around to typing it and this was a high-priority item, so you can see I've been a bit swamped! Sorry for any inconvenience caused by the delay in printing this.

The kHz-to-meters table by Thomas White appeared on page 24 of the 5/19/73 DXM. Although it seems like just yesterday, the first two "Early Days of DXing" articles by Gene Martin appeared over a year ago: The first appeared on pages 39 and 40 of 8/12/72 DXM, the second on pages 33 thru 36 of the 9/23/72 issue.

Here's hoping my long delay in getting this article printed won't discourage Gene, or other long-time DXers in the club, from sending in articles about their experiences in the "good old days." I'll try to be a bit more punctual in the future, considering that this is a "space-available" section. Getting married is always a little bit of a hassle, I suppose, but when you're getting married to a DXer ----- WOW. --Bill Hardy, 303 W. 10th St., Aberdeen, WA, 98520.

SPECIAL FEATURES CORRECTION

In Tom Sundstrom's article on Radio Free America, 10/27/73 DXM, page 9, please change the frequency in the next-to-last paragraph to 1608 kHz. Tom advised me via postcard, after I'd already typed up the article and sent it in, that McIntire would be going to 1608, although 1613 was first announced as alternate frequency. --Bill Hardy.

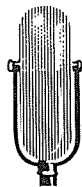
NEW FCC REQUIREMENTS

Beginning November 21, the FCC has dropped the requirement that all AM and FM stations be equipped with a continuously operating frequency monitor. The requirement of making frequency monitor readings every 3 hours was also dropped. Licensees will be required to make frequency measurements at intervals not over 31 days. Stations can do this by developing their own measurement system calibrated against the National Bureau of Standards primary frequency reference source or WWV, or they can use the services of a frequency measuring organization. The new rules allow a station to use a frequency monitor if they want continuous information. However, the monitor readings cannot be a substitute for the frequency measurements, unless the monitor is capable of making a frequency measurement calibrated against the NBS frequency standard.

The main transmitter must have its carrier frequency measured as often as necessary to make sure that the prescribed tolerance is maintained. Successive measurements are to be no more than 31 days apart. Auxiliary transmitters need be measured only as often as necessary to make sure the frequency stays within the prescribed tolerance. But if the transmitter is used daily for more than 31 days, no more than 31 days shall elapse between frequency measurements.

(Information from The Engineer's Corner, a newsletter from the National Association of Broadcasters, October 1973, via Bill Cowles. Bill adds the note that there might be an increase in the number of stations using external frequency measuring companies, especially among small low-income stations. He cites the example of the monitoring company in Tucson charging about \$7 a month for two measurements; a price which is a lot less than the purchase of test equipment calibrated to WWV. Most old types of monitors in use at present in stations are now almost useless.)

NOTES FROM THE EDITOR'S DESK



You might notice that this type (and the type used on part of the front page) is not as clear as the kind ordinarily used. The IBM Selectric broke down, and this wood-burner was pressed into service. Hopefully, the IBM will be back in use next week.

If you change your address, please let us know as soon as possible. Because of the "Address Correction Requested" on the mailing label, the post office notifies us of any change (if you don't); however, the P.O. charges 10¢ for each such change.

This issue most likely will not be the usual 12 pages. At the usual press time of noon on Saturday, the mailman still hadn't appeared, with the result that publication of this issue might be delayed a day or so. 10 pages - FJP

\*Gordon P. Nelson

After following with considerable interest the discussion initiated by Gene Martin's speculation on possible East Coast afternoon reception of Okinawa-1178, here are a few comments on some of the topics raised by Hauser and Foxworth.

### I. Etiology of the Great Circle Path.

In his reply to Martin, Hauser<sup>1</sup> says, "A radio signal, no matter how powerful, is going to follow the shortest path between two points"; Foxworth<sup>2</sup> restates the same point, "Physics laws say that electromagnetic signals travel in a straight line, and this straight line path does not go near Scandinavia". Both of these experienced DX'ers seem caught up in a basic misunderstanding of a fundamental aspect of ionospheric MW radio propagation. While Maxwell's equations do indeed require that a travelling electromagnetic wave propagate in a straight line, this is only so in the event the signal is propagating through a uniform homogeneous medium such as free space. The ionosphere is anything but a homogeneous medium and the trajectory of any particular skywave signal between two points cannot be taken for granted - especially on MW frequencies.

First of all, while we all commonly speak in terms of MW signals on "great circle paths", that's not what we really mean. The actual signal path is a complex 3-dimensional trajectory which may extend vertically several hundred kilometers. When we stretch a string on a globe or draw a straight radial on an azimuthal projection map to visualize "a great circle path" we are visualizing the projection of the actual 3-dimensional signal path onto the surface of the earth. While indeed a great circle arc between two points on the surface of a sphere is the shortest path on the surface, the fact that ionospheric radio signals usually tend to propagate along paths whose projection is a great circle has nothing to do with the fact that a great circle arc is a geodesic on an ideal sphere.

The tendency for real signal path projections to approximate great circles arises from the fact that the ionospheric "layers" responsible for signal return and long distance skip propagation are more-or-less parallel to the surface of the earth below. As long as the ionospheric structures responsible for signal return are spherically symmetrical and concentric with the earth, it follows from Snell's law and elementary geometry that the projection of the signal path will be a great circle arc on the surface. The very simplest model used in ionospheric research pictures the earth as a perfect sphere surrounded by perfectly spherical reflecting surfaces corresponding to the various ionospheric layers responsible for signal return. This is the model tacitly assumed by Hauser and Foxworth and while all signal path projections will indeed be great circles the model demands a higher degree of symmetry than is actually present in the real ionosphere.

The real ionosphere behaves much like a compressible magnetic fluid and actual ionospheric "layer" structures are far from being the smooth and perfectly spherical surfaces necessary to assure that signal path projections will always be great circle arcs! The ionosphere is a complex and rapidly changing dynamic structure containing a wide variety of irregularities and distortions which play a key role in determining the nature of actual signal paths.

In the likely event that the signal passes through or is returned from a region of

the ionosphere which is not parallel to the surface of the earth below, the signal will experience a lateral deviation from the original path; in such a case the path projection will not be a great circle arc. An ideal direction finder at the receiver site will indicate that the signal is arriving on a deviated path and the measured angle of signal arrival in the horizontal plane will differ from that calculated on the basis of a great circle assumption. As long as the ionospheric tilting along the path remains significant the signal will propagate on a non-great-circle deviated path and direction finding will show an apparent bearing anomaly. At any particular instant the amount of lateral path deviation from the ideal great circle projection depends on the nature of the ionospheric tilts along the path: inclination of the tilted region from local vertical, direction of the tilt relative to the signal path, and the lateral extent of the tilted region relative to the dimension of the signal wavelength.<sup>5</sup>

Of course the ionosphere does not really contain well-defined "layers" but is instead a continuous plasma medium featuring a variety of fairly sharp and pronounced vertical electron density gradients. Medium wave signals are not reflected from sharp layer edges at fixed heights but are gradually refracted by the gradients in electron density in a continuously variable medium. The simple "layer-reflection" image is often quite useful for visualization of many propagation effects but the more complicated full-wave refractive approach must be taken if one is to obtain a complete appreciation for phenomena such as deviated paths, etc.

A more correct statement of the condition necessary to assure a great circle path projection is that horizontal electron density gradients measured normal to the signal Poynting vector at each point be negligible in dimensions compared to the signal wavelength along the entire path. This approach takes into account the continuous nature of the propagation medium and interprets the "tilted layer" as a significant horizontal electron density gradient. We shall continue to use the terms "layer" and "tilt" but one should bear in mind that these terms are simply used as a matter of convenience and only approximate the actual continuous electron density gradient structures in the ionosphere.

It should also be appreciated that the total received signal at the receiver is the vector sum (or integral) of all incoming signal rays and that it is perfectly possible for MW propagation to be sustained over several different effective paths - both deviated and along the great circle - simultaneously.<sup>7</sup> Viewed from the receiver site such a composite signal appears to arrive from a bearing which is intermediate between those for the individual ray paths and weighted by the relative amplitude and polarization properties of each component.<sup>8</sup> Since the ionospheric inhomogeneities responsible for effective tilts vary in an essentially random fashion with time, meaningful quantitative description requires rather elaborate statistical techniques and this is the form in which most "tilt" data is presented in the research literature.<sup>3</sup>

Besides the deviated paths produced by tilts two other sources for non-great-circle propagation are well known. The phenomenon of side-scatter is often used on higher frequencies to circumvent the high level of auroral absorption over the North Atlantic which commonly impairs Transatlantic communication during high levels of auroral/geomagnetic disturbance; both receiving and transmitting antennas are redirected towards a point over West Africa and lateral side-scatter permits reception on a path which appears to make an almost right angle bend from a great circle. I have tried in vain for several years to detect this propagation mode on MW signals (using high precision direction finding); presumably the combination of low scatter efficiency at MW frequencies together with the high auroral absorption for the path leg between Europe and Africa rules this mode out for practical DX

purposes although it may well exist under different circumstances. A more obscure mechanism produces lateral deviations of travelling electromagnetic waves even in media containing no horizontal density gradients through a very complex interaction between the signal and the Earth's magnetic field. Elaborate calculations of the amount of this effect were made shortly after WW II and indicated that this effect is ordinarily quite small although it can become significant if just the right conditions are met.<sup>10</sup> This source of deviated paths is called magnetoionic deviation.

By now it is hopefully obvious that great circle paths cannot be simply taken for granted. While MW signal paths usually follow quite close to the expected great circle track by virtue of the general tendency toward ionospheric symmetry, significant and consistent deviated paths are common and readily observable. The possibility of unusual highly deviated MW signal paths due to any of the causes discussed above cannot be discounted a priori. Only by means of carefully made high precision direction finding bearings can the possibility of a highly deviated path be completely ruled out for any particular DX reception. It is because the conditions necessary for highly deviated paths are usually so rare and unusual that such paths may well prove to be implicated in rare and unusual MW DX receptions.

During the past decade the author has made systematic measurements of the direction finding bearings for a large number of long-distance MW DX receptions including receptions here in New England of stations in Central Asia (eastward path), the Far East (westward path), South and East Africa. The precision of measurements initially made was 1° of arc; later the precision was improved to 0.1°. A typical run on a TA station involved anywhere from 10 to 400 independent bearings taken at 15 second intervals with continuous oscillographic monitoring for sub-audible heterodynes<sup>11</sup> to prevent spurious bearing measurements caused by "second station pulling" due to inaudible cochannel stations.<sup>12</sup> Needless to say we have amassed a large amount of data and have just now begun to analyze it in depth. But some important observations and generalities are even now quite apparent:

- a. A good part of the second-to-second and minute-to-minute variation in measured path bearings for a distant MW station is the polarization error caused by the interaction between the direction finding antenna and the time-varying parameters of the signal wave polarization figure and not to actual path deviations.
- b. Persistent deviated bearings of at least 5° are consistently observed under two special conditions only - (i) Near the time of dawn at the transmitter site. This is apparently the well-known sunrise/sunset ionospheric tilting effect.<sup>13</sup> Similar but lesser effects are observed as the terminator nears the receiving site. (ii) During the initial phase of a major geomagnetic/auroral disturbance, substantial path deviation is noted for those TA's still audible on paths reaching the highest geomagnetic latitudes. This is believed to be due to ionospheric tilts and deformations associated with the passage of auroral substorms.<sup>14</sup>
- c. Very high (geomagnetic) latitude paths such as Sinkiang-1525 and P'yongyang-655 show rapid bearing fluctuations of several degrees and the shallower DF nulls characteristic of multi-path propagation. There is no evidence for highly deviated path reception of Sinkiang-1525 even when auroral/geomagnetic activity is high. More data is needed.
- d. There may be stable path deviations of several degrees for stations in South and East Africa. This effect is observed well before the onset of dawn-induced tilting and may be the result of the well-known Equatorial Geomagnetic Anomaly and its associated ionospheric deformations.<sup>14</sup> Again, more data is needed.

In summary, the data we have gathered to date suggests that - generally speaking - most long-range MW DX reception occurs on paths which are instanta-neously within a few degrees of expected great circle bearings. Short-term tilts and antenna polarization effects produce apparent bearing errors which are essentially Gaussian in distribution and long-term time integration (c. 1 hour) of measured bearings can regularly yield mean bearings within 1° or better of the calculated great circle bearing. The greatest evidence for deviated paths occurs when the signal traverses the region south of the auroral oval, passes through very high geomagnetic latitudes, through the South Atlantic, and along the terminator. Highly deviated scatter paths may exist but have not been observed here.

Intriguingly, evidence for deviated paths is strongest for many of the signal paths of greatest interest to the MW DX'er and which have traditionally produced some of the best DX catches!

\* \* \* \* \*

NOTES AND REFERENCES:

1. Okinawa by the Side Door? Glenn Hauser, DX Monitor, 10/27/73
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