



DX NEWS

*the magazine of the
National Radio Club*

—SINCE 1933—

Volume 55 Issue 3 Monday, October 19, 1987

You've asked for the reprint section to be printed so.....here it is....starting on page 7....you can pull out those three pages and staple them together and save them for future reference. You can also find an order blank on the inside back cover.

Those placing orders for the Enlarged Edition of the Log Book, please be patient, as it may take up to 4 weeks to process and produce your book. But as with all NRC products, it will be worth the wait!!!

From Dale Parks comes the following info. WHBT-1460 changed formats, effective last tuesday (the 20th) to Jazz/New Age format, "Radios new comfort zone". Other stuff= WJRC to WJHN-1510 Joliet, IL, live oldies format NO satellite stuff, "Remember when 1510" slogan. CKXL to CISS-1140 Calgary, AB. Hawaiian Stuff= KUMU-1500 may relocate XT to 1490 1000w, also appl. for a 5000w repeater on 1550 in the Kona region (west side of Hawaii). KIPA-Hilo 420 now testing repeater in Na'alehu but having freq. control problems. 970 KJRI Waimea is now under construction.

Contacting HQ via the Computer. This can be done three ways. 1- Compuserve, 72457,2945 Mike Knitter. 2- Fidonet 121/1 Mike Knitter. 3- Call HQ via the phone number on the back and arrange a time or sometimes we can do it during that call. We also log onto Compuserve every sunday, normally by 8pm Central time. So if you have something you want to get into the magazine quickly thats the place to leave it.

Universal Shortwave Catalog, (87-09) is now available, for US\$1.00, refundable on your first order. 70 pages full of everything you'll need for your radio shack. Send your \$1 to: Universal Shortwave Radio, 1280 Aida Drive, Reynoldsburg, OH 43068

CPC TEST (Times listed are Eastern Local Time)

Remember, even if you don't hear the Test, why not send a postcard thanking the station anyway. Also, if you don't want to write to stations you can still help us out. If you send some 22 cent stamps to Wayne Heinen, 4131 S. Andes Way, Aurora, CO 80013, he'll get a letter out for every stamp you send, you can even specify the station or frequency you would like to hear something on. And when a test is arranged your name will appear below! What a deal!

Oct. 18 KGRV-700 Winston, OR 0700-0900 EST (0400-0600 Pacific Time) 25,000w, Sunday Voice IDs, NO music, open carrier tone, If unable to test on 10/18, then 10/25. A polite reception report with a mint 22 cent stamp to: Stephen H. Weber, C.E., Radio Station KGRV, Box 1598, Winston, OR 97496
Test arranged for the NRC by Wayne Heinen.

Oct. 24 WETB-790 Johnson City, TN 0000-0100 Test will consist of tones, music, Saturday many IDs. A polite reception report with a mint 22 cent stamp to: C.W. Williams, Radio Station WETB, Box 1716, Johnson City, TN 37601
Test arranged for the NRC by Dave Schmidt.

LOOK INSIDE:

2....AM Switch
21....Masings

3....DDXD-East
23....Reprint Order Form

7....Reprints
24....Snow Depth Reports

THE WORLD'S OLDEST AND LARGEST ALL MEDIUM-WAVE DX CLUB

AM SWITCH

Jerry Starr, c/o WHOT Radio, 4040 Simon Road, Youngstown, OH 44512

CALL LETTER CHANGES

OLD CALL:	NEW CALL:	OLD CALL:	NEW CALL:
580 WWPR MS TUPELO	WEL0	1190 *New SC ATLANTIC BEACH	WMIW
KRLB TX LUBBOCK	KJBX	1260 KGBX MO SPRINGFIELD	KTTS
640 *New MI KINGSLEY	WDRQ	KIXY TX SAN ANGELO	KQSA
670 *New TN FARRAGUT	WBAV	1300 KHUG OR PHOENIX	KESI
700 WCAT MA ORANGE	WPNS	1330 WEAW IL EVANSVILLE	WSSY
750 *New LA GREINA	KAIG	1350 WMRS NH LACONIA	WLNH
760 *New AL SPANISH FORT	WAFK	1400 KTTS MO SPRINGFIELD	KGBX
890 *New MO GLADSTONE	KGGN	1410 KCLO KS LEVENWORTH	KCWV
900 *New NH NASHUA	WMVU	1430 WIVE VA ASHLAND	WMMM
970 KZZU WA SPOKANE	KHIT	1450 WENZ VA HIGHLAND SPRINGS	WRGF
1080 WEKS GA MARIETTA	WECA	1460 WWCN NY ALBANY	WOKO
1160 *New FL WOODVILLE	WTWF	1530 WJXW FL JACKSONVILLE	WJGR
1170 *New VA LYNCHBURG	WVZN	*KQSA CHANGE TO KIXY WAS SET ASIDE	

APPLICATIONS FOR NEW STATIONS

NONE

GRANTS FOR NEW STATIONS

- 640 MI KINGSLEY: 10000/1000 U4
- 750 LA GREINA: 250 D3
- 760 AL SPANISH FORT: 5000/1000 U4

APPLICATIONS FROM EXISTING FACILITIES

- 1080 WHRC IL EDWARDSVILLE: ADD 337 WATTS NIGHTS
- 1310 WFAH OH ALLIANCE: ADD 500 WATTS NIGHT, ANTENNA TO U4

GRANTS TO EXISTING FACILITIES

NONE

OTHERNESS

- 1000 WIQT NY HORSEHEADS: EXPECTS TO MOVE TO 820 KHZ "AT THE END OF OCTOBER" BUT PRIOR TO THE MOVE THEY HAVE SOLD THE STATION AS IT EXISTS ON 1000 KHZ AND WILL MOVE TO 820. ERGO, BOTH FREQUENCIES WILL REMAIN ACTIVE ON THE MARKET WITH THE WIQT CALLS MOVING TO 820 KHZ
- 1460 KARR WA KIRKLAND: SILENT STATION IS BACK ON WITH FAMILY RADIO REL FORMAT
- 1500 KVSU WA TUMWATER: NEW STATION IS ON THE AIR WITH REL FORMAT

73 AND GOOD DX.

Jerry & BKA
JERRY STARR & BUFFALO K. FOONMAN

KID033

KLITE

Wallace Christensen Broadcasting
BOX 456 / PIPESTONE, MINNESOTA 56164

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DOMESTIC DX DIGEST - EAST

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William R. Hale

1025 Reynolds Road, Apt. E-101, Johnson City, NY 13790.

TIME-HONORED NOTES & MESSAGES WHICH WILL LIVE IN DX ANNALS FOREVER!

- Just when I thought this was going to be a "small" column, I got **Niel Wolfish's** 4-pager with DX galore. Check out the Graveyarders! As a special service, I'm going to check the GY distances to see if he qualifies for any GYDX records. Nice guy, huh? Also, in **George Vandaris's** letter, he mentions the potholes on I-81. Hey, George. Tell me about those potholes! Nice to hear from **William Moser** of South Dakota. This proves someone does live there, hi! **Richard Evans**, a Philly transplant now in Wisconsin, reports hearing 15 new ones in about 24 hours. Ain't it great out in the sticks, Richard? And, **Dave Hecall** also reports hearing **RNI**, about 800 miles away. **Phil Colwart**, at just over 1100 miles down Louisiana way, still holds the DX record for them. Dave, I've heard **RNI** had 10Kw on MW.
- Remember the deadlines are Saturday's mail. Things are shaping up to be another great DX season. Keep those DX reports and tips a comin'.

SPECIAL

- 950 WJPC IL CHICAGO - 9/24 1837 noted simul w/WJMR Lansing, IL; Soft Touch 106.3 @ 95AM slogans; UC & some jazz (WFF-IN)
- 1040 CKXY BC VANCOUVER - 9/20 0020 mx by Berlin, promo for Top 10 @ 10 on 10-40 Kicks + Jx which sounded like CKXY; fair w/WHO; CL change from CIOF? (WOLF-MB)
- 1180 WJLA MI DIMONDIALE - 9/24 1907-18 good w/UC mx, o/u WMLX/WHAM; est: 1170 (WFF-IN)
- 1210 CFYM SK KINDERSLEY - 9/18 0408 w/Coast to Coast pgn (AC mx), 0423 dual ID w/CJYM, agr-i-wx; fair w/WCAU; new stn, llw/CJYM-1330 (NJW-MB)
- 1280 WGBF IN EVANSVILLE - 9/24 2023-2201 noted format switch, now is AOR/T40 from MOR/OLD simul, w/103.1 FM; slogan Real Rock GBF, ID w/Henderson, KY; likely will drop Talknet; ad for New Mx Hour @ 9 O'Clock; o/u/WMRD/CJMS as usual (WFF-IN)
- 1500 WAKE IN VALPARAISO - 9/24 1833 now noted w/WBR mx, dropping ABC Talkradio; used to be tik all day 'til s/off (WFF-IN)
- 1570 WBUZ NY FREDONIA - hrd w/T40 mx by Chuck Rader & me while driving from Lima, OH to Buffalo, NY; previously listed as silent and off the air (WH-CO)

DX AND EQUIPMENT TESTS

- 1470 KWSL IA SIOUX CITY - 9/28 CPC test hrd u/hvy static caused by lcl t'storm (WCM-SD)
- KWEL IA SIOUX CITY - 9/28 0200-33 extremely poor u/WMBD on NBC test w/TIs; no actual ID hrd; tent report sent (RCE-WI)
- KWSL IA SIOUX CITY - 9/28 0200-30 not hrd; tho I hrd some TIs, but twas probably my imagination!; CHOW/WMGZ dominating w/UNID LK in also (WMBD?); any other 1470's around here carry LK?? (GC-NY)

UNIDS & UNID= ID

- 1530 ?? UNID - 9/25 0443 w/SS mx u/WCKY; one would think Cuba, but looped NE/SW; Mexico? (WFF-IN)

MIDNIGHT TO MIDDAY

- 560 KLZ CO DENVER - 9/27 0733-54 w/C&W mx; strong to start, but fading bad (RCE-WI)
- 590 CFAR MB FLIN FLON - 9/20 0134-52 mx by Crowded House! to a better signal from CJAR-1240; 0145 TC & ment of upcoming A-R Radio Nix; poor w/WOW on Alaskan terminated beverage; MB # 17, only 1230-Churchill remains (WOLF-MB)
- WK20 MI KALAMAZOO - 9/27 0855 & 1927 w/ads; poor (RCE-WI)
- 620 KSTR CO GRAND JUNCTION - 9/29 0759-0801 u/KHNS w/partial-data s/on+MBS Nix (WCM-SD)
- 720 WWII PA SHIREMANSTOWN - 9/24 0619-42+ steady, great signal u/WGN w/MOR/OLD mx; 1st stn to break thru Chicago here, with exception of a possible S5er on WMYX (WFF-IN)
- 740 WSVQ TN HARROGATE - 9/24 0700 w/vx & lgl ID; new here in CBL null (WFF-IN)
- 1030 WBDX TN WHITE BLUFF - 9/25 0627 fair & steady w/C&W mx; a morning regular B4 WBEZ & KCTA s/on, in WBEZ null (WFF-IN)
- 780 KGU HI HONOLULU - 9/27 0759-0801 v/weak, but unmistakable chimes & ID+CBS Nix; report & tape sent; my 1st HI in 37 yrs of DXing! (WCM-SD)
- 1050 CJNB SK NORTH BATTLEFORD - 9/20 0125 C&W fiddle mx, ad, ID; llw/1240; v/good w/no sign of lcl CKSB on term'd beverage (term'd on NW end of wire) (WOLF-MB)
- 1180 WMLX KY FLORENCE - 9/24 0732 in briefly w/BBD mx & CLs in mess; yes, MESS, never logged as WFKB; slogan is *Lovely 11-80* (WFF-IN)
- 1230 KBSR MT HARDIN - 9/20 0356 C&W, 0400 ID at AM 12-30, We're South Central MT's power-house! KBSR, Hardin!; more C&W; fair on E-W wire; MT #20 (WOLF-MB)
- CJLW AB WAINWRIGHT - 9/20 0202-0211 B'cast Nix; 0204 ad for jewelry store in Wainwright folo by LW wx & sps, C&W; llw/1310/CILW-1340; poor o/mess; AB #31 (WOLF-MB)
- 1240 CJAR MB THE PAS - 9/20 0127-49 CHR w/dedications; ID A-R Radio & ment of A-R Radio Nix @ 1 @ 0145; llw/CFAR-590; fair-v/poor w/CJNS on Alaskan wire (WOLF-MB)
- CJNS SK MEADOW LAKE - 9/20 0128-39 relaying CJNB-1050 w/C&W fiddle mx, lcl wx & CJNB ID @ 0132; fair-v/poor (alternating w/CJAR) on Alaskan (WOLF-MB)
- WAGO PA READING - 9/28 0220 ID o/UNID NOS stn (GC-NY)
- 1280 WNDE IN INDIANAPOLIS - 9/27 0433-50 w/Clastic Hits Radio w/mx from the late 80's; decent (RCE-WI)
- 1310 CHLW AB ST PAUL - 9/20 0154-0206 llw/weaker CJLW-1230/CILW-1340 (see 1230 above for details-WRH); good o/WIBA on Alaskan (WOLF-MB)

- ④ CIWV ON OTTAWA - 9/18 0423 W-1310 ID, mx by Berlin; fair w/WIBA (NJW-MB)
- 1340 KDEN CO DENVER - 9/17 0318 lcl mx by female, ad for Golf Digest, ID & more mx; poor (NJW-MB)
- KWLM MN WILLMAR - 9/18 0358 ID during LK break; poor (NJW-MB)
- CIBQ AB BROOKS - 9/20 0317 relaying CKDQ-910 w/C&W; Q-91 IDs by female; fair on E-W wire (WOLF-MB)
- CILW AB GRAND CENTRE - 9/20 0205-11 ll w/CJLW-1230 & CHLW-1310; (see details above); poor on AK wire...hrd previously only during severe AU storm (WOLF-MB)
- WYCB DC WASHINGTON - 9/28 0218 Black GOS, ID, new; all DC stns now hrd! (GC-NY)
- 1380 WGHK IN FT WAYNE - 9/27 0455 poor w/C&W mx (RCE-WI)
- 1400 KOOW NE ALLIANCE - 9/14 0228 w/LK, ad for Iron Horse Restaurant & ID @ 0230 AM 14 Wx on KOOW Alliance, NE, it's 12:30; poor w/others (NJW-MB)
- KATI WY CASPER - 9/19 0400 Q-94 KGRQ, KATI Casper ID @ :00; nothing else hrd; poor (NJW-MB)
- CKSQ AB STEITLER - 9/20 0322 relaying CKDQ-910 & ICIBQ-1340 w/Eagles song, C&W mx; 0328 ID Q-91 by female folo by sps; poor (WOLF-MB)
- 1450 KATR CO GREELEY - 9/17 0256 w/Beatles tune, ID @ 0300 KATR Greeley-Ft Collins-Loveland, AM 1450; poor (NJW-MB)
- KOXL MT BOZEMAN - 9/20 0324 Eddie Cochran's Summertime Blues, ID @ 0326, promo for The Morning Show/Kinks' OLD; good on E-W wire (WOLF-MB)
- KFIZ WI FOND DU LAC - 9/19 0600 ID KFIZ in Fond du Lac, WI>CBS Nc; fair (NJW-MB)
- 1470 CJVB BC VANCOUVER - 9/20 0254 female in Oriental language; 0300 B'cast Nc, 0307 s/off until 4:55 AM; good w/KWSL (WOLF-MB)
- 1490 KBSO MT LAUREL - 9/14 0158 w/One Tin Soldier, s/off ann @ 0200 mentg studios in Billings; poor+fair w/WLXR (who was playing C&W) (NJW-MB)
- WLXR WI LA CROSSE - 9/14 0154 15 Country, WLXR ID by female, lcl wx, C&W mx; poor+fair w/KBSO etc (NJW-MB)
- CJVS SK SHAUNAVON - 9/20 0327 C&W mx, wx for Swift Current & area @ 0330 folo by ad for Air Canada, Southwest Radio jx, more C&W; fair (WOLF-MB)

MIDDAY TO MIDNIGHT

- 560 WFIL PA PHILADELPHIA - 9/22 1946 w/OLD, AM-5-60 WFIL, all oldies, all the time (GC-NY)
- 690 WELD WV FISHER - 9/7 1910-30 OLD pgm Back to the Fifties presented by a Petersburg, WV lumber co; ref to FM-101; fair+good w/CBF/WADS; New! Verie from CE sez they still run 500 watts (GV-PA)
- 720 WWII PA SHIREMANSTOWN - 9/22 1946 AC mx, live DJ, APR Sps, W-2; new (GC-NY)
- 730 WLIL TN LENOIR CITY - 9/25 2013 L&C (likely Au conditions), HS FB game (GC-NY)
- 940 WYLD LA NEW ORLEANS - 9/17 2200 fair, just o/CBM w/UC mx & ID @ :00; #550 (DH-IN)
- 980 KBMZ MO KANSAS CITY - 9/19 2110 w/Royals BB; good & alone; also on KMA-960 & KRNT-1350 (WOLF-MB)
- 1010 KIND KS INDEPENDENCE - 9/19 2340 caught s/off ann, w/ ment of their FM stn, pwr, etc; poor w/CBR/CFRB (WOLF-MB)
- WHIN TN GALLATIN - 9/18 2040 w/Gallatin Green Wave HS FB, ads & ID; I had assumed 5 Kw, but verie sez 47.5!! (DH-IN)
- 1030 WHIN MN MAPLEWOOD - 2002 9/28 fair+good carrying Minnesota/Central Michigan FB game (RCE-WI)
- 1060 WNWJ IN VALPARAISO - 9/24 2033 noted on their 10 watt PSSA pwr; not too shabby for 15 miles o/u UNID w/Met-Expo BB; WTIC had Red Sox BB (WPF-IN)
- WTIC CT HARTFORD - 2030-2105 9/28 fair+poor w/Whalers/Rangers HKY game; mixing w/KRDL (RCE-WI)
- 1120 WKGW PA OIL CITY - 9/14 1935-45 CHR mx, Accu-Wx for Oil City-Franklin; good w/o/KMOX; reaches here on regular basis since pwr increase (GV-PA)
- WKQW PA OIL CITY - 9/21 1956 L&C w/AC; PSSA pwr probably about 25 watts (GC-NY)
- 1150 WNLK VA CHURCHVILLE - 9/21 2000 SID (lgl)+Talkback; new (GC-NY)
- 1160 WYNS PA LEHIGHTON - 9/21 1955 ads, promo (GC-NY)
- 1190 WBUG PA HUGHESVILLE - 9/18 1820-40 back on w/Hit Video-USA; noted silent host of Sept; audio quality better; no IDs hrd, made-for-TV ads incl CCR's Greatest Hits & Chas Schwab (no Ginsu knives this time) (GV-PA)
- 1210 KLDI WY LARAMIE - 9/18 2345 w/Cheyenne West vs Laramie HS BB; promo for U of WY FB b'casts; fair o/WCAU (NJW-MB)
- 1280 WJWQ MI ZEELAND - 9/19 2300 ID & Notre Dame FB; poor w/KGBX (WOLF-MB)
- KGBX MO SPRINGFIELD - 9/19 2140 w/ASA mens softball championship sponsored by Shoney's; CHR > game ended; fair o/WJWQ (WOLF-MB)
- 1290 WMPV WI GREENFIELD - 9/19 2214 w/CIFX w/ID24 hours-a-day, the Heart and Soul hits keep on coming, 12-90 WMPV (WOLF-MB)
- 1310 WMTG MI DEARBORN - 9/21 1945 ID, promo; 1st time hrd w/new CLs; ex:WNIC (GC-NY)
- 1380 WANS DE WILMINGTON - 9/21 1838 DE ments, Wanz Sundown Rndown promo; that's 5 out of 10 from DE (GC-NY)
- 1410 WDOV DE DOVER - 9/21 1824 wx, The Oldies Channel (GC-NY)
- 1450 WHRY WI HURLEY - 9/18 2305 fade up w/ID & temp for Superior North Country>MOYL-type mx; poor (NJW-MB)

- 1460 WBRN MI BIG RAPIDS - 9/15 2115 fair w/Tigers BB, lcl ads, ID; o/UNID (DH-IN)
- WVOX NY NEW ROCHELLE - 9/19 1930 caught s/off on car radio w/ment of Westchester Cnty & WRTN 90.5 FM; new (GC-NY)
- WBUV WV BUCKHANNON - 9/21 1928 AM \$ 1460; C&W mx, REL ad (GC-NY)
- 1470 WKWV PA ALLENTOWN - 9/21 1930 w/ID, Lehigh Valley ment, MYL format, poss REL? (GC-NY)
- 1480 WCNS PA LATROBE - 9/21 1932 w/Pirates BB promo (GC-NY)
- 1510 CKOT ON TILLSONBURG - 8/28 2010-30 CHR mx & slogans AM-151 & Tri-County's Music Leader; ment EZL mx on FM 103 B4 their 2000 s/off (yrs, George, this one is a little old, and the slogans might help someone ID this bird-WRH); fair u/WSSH/WAHT (GV-PA)
- 1540 WPGR PA PHILADELPHIA - 9/25 1910-25 Philly-style OLD; DJ ment Relive Memories in Margate @ Memories West on Blackhorse Pike; good o/WPTR/CHIN (GV-PA)
- 1550 CBE ON WINDSOR - 9/17 2145 poor+occasionally decent w/tlk show mixing w/lcl WCTV; 1st time hrd in 4 yrs (these guys are a real pain for me here-WRH) (DH-IN)
- 1580 WZKY NC ALBEMARLE - 9/19 1925-40 OLD mx, ads for Whirlpool and a cinema located in the Eastgate Shopping Center; fair w/WEBG, later WBBR (GV-PA)
- WBBR SC TRAVELERS REST - 9/18 1908-42 GOS mx, Greenville's Gospel slogan; promo for Thru The Bible pgm; ment s/off @ 1945; fair w/CBJ (GV-PA)
- WEBG PA EBENSBURG - 9/16 1932-35 strong w/OLD; s/off during Honeycomb by Jimmie Rogers, possibly running a few minutes over (GV-PA)
- WTYO NJ HAMMONTON - 9/24 1845-1915 Community Focus pgm folo by NBC Nc, CHR; slogan Where your friends are; no ads, just Radio Ad Bureau ads + several PSAs; good, stop all (GV-PA)

REPORTERS:

- WOLF-MB Niel Wolfish//Winnipeg, MB//ICF-2010, Superadio + 70' LW
- NJW-MB Niel Wolfish//DXing @ U of MB DX site @ Lewis, MB, 15 mi East of Winnipeg// ICOM R-70, ICF-2010, 4 beverages incl a terminated wire in direction of Alaska
- GV-PA George Vanish//Trucksville, PA//Car radio, hooked up in garage
- WPF-IN Wendell Ford//Westville, IN//ICF-2010
- WCM-SD William Moser//Lake Preston, SD//Zenith K731 + loop
- RCE-WI Richard Evans//Wisconsin Rapids, WI//
- DH-IN Dave Hascall//Fortville, IN//
- GC-NY Greg Coniglio//Clarence, NY//Sharp WQ-272 Boombox
- WH-NY Wayne Heinen//vacationing in NY

CKEY aims to get with it by going FM

BY EDWARD GREENSPON
The Globe and Mail

Tired of battling the flow of changing listener tastes, the people behind the velvety gold sounds of Toronto's CKEY-AM have adopted the old adage that if you can't beat them, join them.

A perennial also-ran among the city's radio stations, CKEY is willing to part with millions of dollars merely to move to the FM dial from its AM position — the most dramatic evidence yet of the emerging power of the junior spectrum in Canada.

"Playing music on AM is like paddling upstream on a river," operations manager Pat St. John said, reclining on a counter in the control booth of CKEY's 25th-floor studio. "What we've really got to do is turn the boat around and go with the current."

For a number of years, the current in the radio business has been flowing to the FM spectrum, with its superior sound quality. From a base of 17 per cent of listeners a decade ago, FM now captures 43 per cent of national radio audiences — a figure that continues to grow year by year.

"FM radio's time has come in the major markets," said Peter Shurman, president of Ultramedia Inc., a company that advises on broadcast acquisitions. "It's the darling of everybody under 40 and it makes a lot of money."

The days when FM wasn't considered financially viable unless coupled with an AM sister are a fading memory in the \$600-million-a-year radio business.

Industry veterans didn't miss the message earlier this year when Cogeco Inc. paid more than \$25-million for a solo FM



JEFF WASSERMAN/The Globe and Mail
"Playing music on AM is like paddling upstream," says CKEY operations manager Pat St. John (left). "We've got to turn the boat around and go with the current."

station just outside Montreal: now it is FM that can stand alone or even support a struggling AM sibling.

The numbers are striking. Canada's 196 private FM radio stations saw their revenues grow by 28 per cent a year from 1981 to 1985, compared with 6 per cent annual growth for the country's 339 commercial AM stations. And of those dollars collected from advertisers, FM operators pocket 13 per cent as profit whereas AM operators keep just 9 per cent.

Little wonder then that CKEY, owned by Toronto-based media giant Maclean Hunter Ltd., has agreed to pay CKO Inc. \$4-million to swap their AM and FM positions in Toronto — a move that still requires the permission of the Canadian Radio-Television and Telecommunications Commission. The price is considered a bargain in light of the Cogeco purchase.

Radio consultants say the shift to FM, if properly promoted, could add one or two rating points to CKEY's listenership — with each point representing \$800,000 in advertising revenue. "It's so brilliant I wish I had thought of it," Mr. Shurman said.

The slippery slope CKEY has negotiated for the past two decades is illustrative of the radical changes in the radio industry since FM was introduced amid considerable skepticism in the late 1960s. Once Toronto's most popular radio station, CKEY has struggled in recent years to carve out a niche in the crowded radio field.

Despite CKEY's problems, Mr. St. John thinks a well-programmed radio station, be it AM or FM, can prosper in Toronto. But if it's on AM, like CKEY, it's going to have to be more clever and push harder.

As a music station, CKEY has been forced to compete with FM stations offering higher-fidelity sound with less technical interference. It is much like black and white television trying to beat the superior look of color.

73, Bell

6 In the United States, the situation for AM is so dire that some station owners are turning off their transmitters and locking up their studios. Only three out of 10 listeners are still tuning in AM.

Increasingly, the band that dominated the airwaves for the first 50 years of radio is becoming the refuge of stations with talk, sports or news formats. Many of these still attract huge audiences, but the price of producing information programs is a great deal higher than the cost of spinning vinyl on FM music stations.

The engineering costs of AM stations also are far greater than those of FM. In a city such as Toronto, AM stations require an array of broadcast towers, ground wire and transmitters to ensure adequate reception of their directional signals. FM stations, on the other hand, can cover the city by putting a single stick on the CN Tower.

Still, the AM band in Canada is nowhere near as ill as it is south of the border, thanks in large part to life-support systems operated by federal broadcast regulators.

The most important of these is the CRTC's policy on playing hit records. FM stations cannot devote more than half their time to playing hits — defined as any song that has ever been in a nationally recognized top-40 chart. Once a hit, always a hit.

Therefore, the popular contemporary hit stations, playing solid gold or top-40 formats, are the exclusive preserve of AM radio in Canada, in the United States, such music for-

matists have all migrated to FM.

Like others, Toronto-based CHUM Ltd., holder of the most radio licences in the country, specifically designs AM program formats to take advantage of the hit policy. Favorable regulations are AM's one leg up on FM.

In fact, CHUM and other AM operators were put in the awkward position last year of lobbying furiously to actually retain a Government regulation when it looked like the CRTC was going to jettison the hit policy. In the end, the commission not only kept the regulation but also removed restrictions on the amount of time sold for AM advertising while maintaining limits on FM stations.

"The regulatory system has allowed AM broadcasters to have some degree of protection, if you will," said Gerald McKee, chief of radio policy planning at the CRTC.

In addition to the boost from regulators, AM station owners are also hoping that technical developments, such as the adoption of an industry-wide standard for AM stereo, will help repatriate listeners.

But results, if any, may be some time down the road. "How many people do you know who have AM radio stereos?" Mr. Shurman asks. "Everybody has FM radios."

Furthermore, AM's problems stem from image shortcomings as well as inferior sound quality. Younger listeners in particular regard it as a grey and stodgy medium.

"There's an entire generation who came up the FM ranks who

consider FM the music band," said Duff Roman, a radio executive with CHUM Ltd. "So there's a huge education process that has to go on to persuade them that AM can be nearly as high quality."

Indeed, the age differences between AM and FM listeners — demographics are everything in radio — is pronounced. "There are some people who've never heard of AM — the young ones," said Michael Hanson, vice-president of the Bureau of Broadcast Measurement.

In fact, the lure of FM is so powerful among these age groups that young listeners are even starting to abandon the time-tested top-40 formats on AM, according to radio consultant Chuck McCoy.

His firm conducted focus group interviews last week with about 125 people to discern their attitudes to radio. "There's a feeling that AM is for older and younger people. If you're between 18 and 40, there's peer pressure to listen to FM."

One of the big questions hanging over the radio industry is whether this key block of listeners will turn to AM when they get older or whether FM will keep expanding its frontiers. After a week of intensive interviews, Mr. McCoy thinks it unlikely that AM will ever again dominate the airwaves.

"If it remains in a protected state, so to speak, it could survive," he said, "where it might not if it weren't protected." ■

VIA PETER ↗
WEEKS ↓

January 1987 - SUPERCEDES ALL PREVIOUS LISTS AND ORDER FORMS WHICH SHOULD NOT BE USED. Number of pages indicated by (). MINIMUM ORDER - THIS PAGE - TOTAL - US\$2.00

ANTENNAS

- A1 HIGH PRECISION DIRECTION FINDING ON THE CBB, PARTS I & II.** G.P. Nelson. Part I uses Maxwell's equations to derive the equations describing MW direction finding with a loop. Part II is a non-technical discussion of how a loop antenna operates and how to get the most out of a loop. (12)
- A2 A ZERO SHARPENING DEVICE FOR A CBB LOOP.** T. Holmes. If you're having trouble obtaining sharp nulls with a standard loop, this simple device may help. This 1965 forerunner of the Pattern Controlled Loop. (1)
- A3 A VERSATILE LONGWIRE ANTENNA COUPLER.** R. Foxworth. How to get the maximum amount of signal from your longwire. (3)
- A4 ROLL YOUR OWN (LOOP THAT IS...) D. Fischer.** Loop won't tune the entire band? This article describes what's wrong and how to cure it. (3)
- A5 LOOP DISTORTION: WHY GET SKEWED?** G.P. Nelson. Discusses origin of distorted loop patterns. Unique technical material not available elsewhere; a must for those interested in designing MW loop antennas. (4)
- A6 PATTERN CONTROLLED LOOPS, PART I & II.** G.P. Nelson. Introduction to theory and practice of pattern controlled and cardioid loops. (9)
- A7 THE FLORIDA BEVERAGE.** J. Conrad. Jerry describes the fantastic results with a Beverage antenna and compares it with others he has used. (3)
- A8 THE CARE AND FEEDING OF A WAVE ANTENNA.** J. Starr. Practical construction hints for a Beverage antenna. (3)
- A9 DOWN TO EARTH GROUNDS.** G.P. Nelson. Hints on making low resistance ground connections for terminating a Beverage antenna. (3)
- A10 A CALIFORNIA BEVERAGE.** Fr. Jack Pejza. Another article describing the spectacular results obtained with a Beverage antenna. (2)
- A11 THE SUPER SIGNAL SNATCHER.** D. Fischer. Article describes the theory of the Beverage antenna. Includes equations, tables, many diagrams. (14)
- A12 THE VERTICAL PICKUP PATTERN OF THE MW LOOP ANTENNA.** G.P. Nelson. Helpful information for those doing horizon blockage experiments with a loop antenna. (4)
- A13 USING TWO ANTENNAS TO GENERATE ASYMMETRICAL RECEIVING PATTERN.** M. Levintow. Shows and describes a simple way to skew your loop's pattern to effect a null that will permit reception of a station impossible to receive on a figure 8 loop antenna by itself. Reading of reprints A5 and A6 are a requirement for understanding this technique. (3)
- A14 A NEW MEDICAL BREAKTHROUGH FOR LONGWAVE TA'S.** C. Clayton. Instructions on how to build an inexpensive loop antenna for LW. (1)
- A15 REVIEW OF THE DYMEK DA-3 ANTENNA.** Pete Taylor, with notes by R.J. Edmunds. Evaluates this recent development in MW antennas and its application to Medium Wave DXing. (4)
- A16 MORE ON BEVERAGE ANTENNAS.** Wes Boyd. An update on Beverage antenna theory and application. (2)

All-news operator to broaden scope with band switch

BY EDWARD GREENSPON
The Globe and Mail

In agreeing to swap radio bands with a Toronto radio station owned by Maclean Hunter Ltd., all-news radio operator CKO Inc. has parlayed a valuable spot on the FM dial into an expanded presence across the country.

The innovative transaction calls for CKO's Toronto outlet to trade its FM position with Canada's largest city for the AM frequency currently held by KKEY-AM. CKO also pockets \$4-million in cash and in a separate deal it takes over Maclean Hunter's Newsradio syndication service.

Together, CKO says the various pieces will allow it to rapidly spread its operations beyond the eight cities where its service currently is available. The deal — the first known attempt to trade bands in Canada — requires the approval of the Canadian Radio-Television and Telecommunications Commission.

"If the switch comes through, then the total deal gives CKO a hell of a push because CKO will be in the black from then on," said Benjamin Torchinsky, CKO's main shareholder. Without the

deal, the 11-year-old operation is a year or two away from breaking even, he said.

"It's terrific for CKO," agreed Steven Harris, vice-president of broadcasting at Maclean-Hunter, "and I hope it's the thing that pushes them over the top."

The deal is equally important for KKEY, which is one of the few major AM stations in the country without an FM sister. That has made it difficult for KKEY to sell attractive advertising packages in the competitive radio market, Mr. Harris said.

Furthermore, KKEY has been losing audience share as music listeners turn increasingly to the higher quality sound of the FM band.

With no room left on the dial for additional Toronto FM stations, Mr. Harris thought of approaching CKO, probably the only FM licence holder that would be willing to consider a switch.

Initially, he wanted to buy the struggling all-news service. But when those preliminary talks failed to get anywhere, the parties settled on

the idea of the frequency swap.

CKO editor-in-chief Taylor Parnaby said the exchange was a natural for CKO as well as KKEY because virtually all cars — where a great deal of tuning to CKO occurs — are equipped with AM receivers whereas only 65 per cent also have FM.

The only reason that CKO currently transmits over the FM frequency in seven of its eight locations is that those were the only positions available when the CRTC licensed the service in 1976, he said.

But the real bonus for CKO is the pot of cash and the acquisition of Newsradio, a service that provides national newscasts to 19 radio stations across the country.

The \$4-million will be used to accelerate the schedule for opening CKO's ninth and 10th stations — in Regina and Winnipeg — over the next year to 18 months, Mr. Parnaby said.

CKO has been under pressure from the CRTC for failing to live up to its commitments to extend the network to 12 locations. The commission refused to grant it a normal five-year licence renewal last year — opting instead for 18 months — and issued a stern warning that CKO had better pull up its socks.

CKO said that it will file an acceptable plan by Sept. 30 for extending its service, but Mr. Parnaby could not say when stations would be added in Saint John and St. John's.

When they appear before the CRTC, Maclean Hunter and CKO will point to the \$4-million expansion plan on the Prairies as a public benefit flowing from the frequency switch. The commission is quite sensitive to the appearance that stations might be "trafficking in licences" for their own profit.

Even if the CRTC turns down the rest of the deal, the Newsradio purchase will go ahead for about \$250,000, Mr. Torchinsky said.

CKO was planning to get into the radio syndication business on Sept. 1 in any case, starting with a news service that would have competed with Newsradio, Standard Broadcasting Corp. Ltd. and Broadcast News.

Mr. Parnaby said that hopes were to land 15 to 20 subscribing stations in the first year. Now CKO, which will absorb Newsradio, starts from a base of 119 subscribers.

Newsradio, which has lost money over the years, is expected to become profitable quickly because CKO has a news gathering base and satellite connections.

In addition to selling its news service to subscribing stations, CKO hopes to syndicate other programs as well — such as John Gilbert's hot line program and a gardening show.

Affiliate stations would pull these programs off CKO's satellite channels. Rather than paying cash for them, customers could simply leave some network commercials in the shows, which would benefit CKO by giving wider coverage to its advertising.

Mr. Parnaby estimates that at peak times certain CKO programs could increase their audience to three million people from the present 500,000 listeners who tune in at least once a week.

The Newsradio acquisition also helps CKO on the content side. As of July 1, it stopped subscribing to the Canadian Press wire service.

Now, Mr. Parnaby said it can draw on the resources of its 119 affiliates to gather news in centres without CKO reporters. As well, CKO inherits from Newsradio a contract to draw on the respected CBS radio operation in the United States. ■

GEORGE ANNALS TORONTO

AUG 12 1987

- A17 MORE FERRITE LOOP ANTENNA INFO.** Dallas Lankford. Several inconsistencies in ferrite-core loop antenna theory are discussed. (3)
- A18 THE BOB FLICK LOOP.** Bob Flick. Complete construction details for this variation on the standard air-core box loop - one that is octagon - shaped. (7)
- A19 NEBE: THE NEBRASKA BEVERAGE.** D. Fischer, C. Dabelstein, R. Mitchell. A discussion of the Nebraska Beverage and the results of its use. (7)
- A20 THE LSQA-1.** Ron Schatz. Complete construction plans for building the Loop Sense Cardioid Array. **Not a project for Beginners !!** This antenna system is complex to build and operate. Should yield a unidirectional receiving pattern if operated properly. (10)
- A21 THE APT-2 ACTIVE ANTENNA TUNER.** Mark Connelly. Complete construction details to build his active parallel tuner with regeneration capacity - a worthwhile addition to your shack; further improved version described in A22. (19)
- A22 THE APT-3: AN IMPROVED DESIGN ACTIVE PARALLEL L-C TUNER.** Mark Connelly. A companion piece to A21 that makes several improvements to the APT-2 that simplify it's operation. ()
- A23 MODULAR PHASING SYSTEMS.** Mark Connelly. Introduction to and theory of an improvement in phasing system design that will outperform previous systems. (10)
- A24 A LARGE APERTURE FERRITE CORE LOOP ANTENNA FOR LONG AND MW RECEPTION.** J. Hagan. Details and theory for the construction of this new type of DX antenna. (14)
- A25 A NOVEL APPROACH TO BUILDING YOUR OWN BCB LOOP.** M. MALONEY. New ideas for improvements in ease of operation and sturdiness of loop antennas. (4)
- A26 THE MWDX-2 PHASING UNIT.** Mark Connelly. Construction of this versatile phasing unit is explained; this unit outperforms it's predecessor, the MWDX-1. Includes latest design enhancements. (13)
- A27 SEVEN PASSIVE TUNERS.** Mark Connelly. If you live near strong locals, and/or use a lower-priced solid state receiver, this article will introduce you to many different tuner designs that can help you dig out that DX. (11)
- A28 ANALYSIS OF THE BEVERAGE ANTENNA.** C. Hutton. This lengthy article is divided into two parts: the first giving basic theory of the Beverage antenna and the second dealing with two wire phased antennas. Filled with calculations and features 35 illustrations. (26)
- A29 REMOTELY-CONTROLLED ANTENNA TUNER RT-1.** Mark Connelly. An Introduction to the design of a device that allows remote tuning of a loop or wire antenna from distances of at least 50 feet or more. (7)
- A30 REMOTELY TUNED DIRECTIONAL LOOP ANTENNA.** E.L. Cummins. Shows how the limitations of a very poor shack, in this case a mobile home, can be overcome by use of an outdoor, remotely controlled, loop antenna. Mr. Cummins gives many practical points for others wishing to experiment with remote antenna installations. (11)
- A31 SIMPLE CHEAP AND EFFECTIVE PRESELECTOR-LONGWIRE TUNER-AMP.** B. Sherwood. This construction project will result in a device which not only will tune your longwire, but will amplify the signal as well. Schematic and brief instructions are given. (4)
- A32 THE MWDX-2A PHASING UNIT.** Mark Connelly. Improvements on the design of the MWDX-2 unit described in A26. This is a companion piece as construction procedures in A26 remain essentially the same. contains new schematic and instructions for use. (7)

- A33 ANTENNAS FOR AM BROADCASTING.** Steve Kennedy. Gives a brief history of early station antenna systems and explains what types are in use today. (4)
- A34 SOME ANTENNA EXPERIMENTS - PART 1.** W.R. McIntosh. Ever heard of a "Helical longwire"? This article shows how DXers with limited space can use this experimental design for a compact antenna with good results. (3)
- A35 THE PHASE ONE - A Delay Line Phasing Unit.** Gerry Thomas. Description of an improved phasing unit design that can be home-built or is available in kit form. (3)
- A36 LOOP-LONGWIRE COMBINED ANTENNA.** P. Swain. A look at the use of "sensing" antennas for both DXing and direction finding. (3)
- A37 LOOP ANTENNAS -- THEORY AND PRACTICE.** Dallas Lankford. A technical discussion on loop antennas that surveys other available literature and develops guidelines for loop design. (9)
- A38 EXTREMELY LINEAR ELECTRICALLY TUNABLE ACTIVE RECEIVING ANTENNA.** Hopf & Lindenmeier. Technical discussion of an antenna system that is the optimum solution towards allowing undisturbed reception near transmitters. (5)
- A39 SIMPLE PASSIVE LONGWIRE TUNER.** Mark Connelly. A basic, yet effective tuner that can eliminate mixing spurs caused by strong locals -- a big help for urban/suburban DXers. (2)
- A40 AMPLIFIED PHASED SHORTWIRES.** Mark Connelly. A must for the apartment or trailer DXer. This detailed construction article explains an effective antenna utilizing an SM-2 and a phasing unit to create a viable DXing system. (8)
- A41 THE KOWALSKI LOOP.** Neal Perdue with comments from Paul Kowalski. A first-hand account from a satisfied user of this new-generation ferrite core loop antenna. A nontechnical review, with comparisons to the SM-2. (2)
- A42 THE MWT-1 FAMILY OF ANTENNA TUNERS.** Mark Connelly. Description and construction plans for the MWT-1, Mini MWT-1A, 1B and 1C antenna tuners. (28)
- A43 RT-1 REMOTELY-TUNED ANTENNA TUNER.** Mark Connelly. Complete description and construction plans. (16)
- A44 THE MINI MWDX-3, A simple, Effective Phasing Unit.** Mark Connelly. Description and construction plans for a superior one-box phasing unit are discussed. (21)
- A45 THE MWDX-4 FAMILY OF PHASING UNITS.** Mark Connelly. Construction and use of two similar series of phasing units for reception enhancement. (25)
- RECEIVING EQUIPMENT AND TECHNIQUES**
- R1 SPURIOUS SIGNALS & SPURIOUS SIGNALS REVISITED.** R.J. Edmunds and G.P. Nelson. Many DXers hear stations on frequencies where they don't belong. Article describes causes and cures of spurious MW signals. Especially valuable if you have powerful locals nearby. (10)
- R2 SINGLE SIDEBAND RECEPTION ON THE BCB WITH MECHANICAL FILTERS.** G.P. Nelson. Few commercial receivers covering the MW band have adequate selectivity to cope with MW interference--particularly in the presence of powerful local stations. Explains how to fit mechanical filters to an existing receiver for the ultimate in adjacent channel rejection. This technique is widely used by many top MW DXers. (22)
- R3 SUBAUDIBLE HETERODYNES ON THE MW BCB.** G.P. Nelson. Details on a technique which permits the MW DXer to detect and characterize signals too weak to hear at the time; also allows the DXer to count the number of stations on a channel--even if no programming

- 10 is audible and permits direction finding on channels with several stations present. (6)
- R4 **THE ICOM IC-R70 PBT & PREAMP MODIFICATIONS.** Don Moman - Canadian Int'l DX Club. Step-by-step instructions that will allow this receiver's SSB PBT filter to be used for improved performance. (2)
- R5 **THE TRACKING PROBLEM AND HOW TO CURE IT.** G.P.Nelson and T. Holmes. Many excellent receivers are poorly designed for MW DX operation. This article describes one of the most common design faults and how to cure it. Very useful if you have strong locals. (4)
- R6 **ELECTRONIC VERNIER TUNING.** R. Moore. Detailed instructions on how to fit a varactor to a MW receiver to provide fine bandspread. (4)
- R7 **MECHANICAL FILTERS FOR THE HQ-180.** Jerry Starr. Complete details on the conversion of the popular Hammarlund HQ-180 receiver to mechanical filter operation. Order with R2. (6)
- R8 **SONY ICF-6500W SELECTIVITY MODIFICATION.** Gerry Thomas. This DX portable described in 'RR6' is made even better through the installation of a narrower IF ceramic filter -- instructions included. (4)
- R9 **RECEIVER/ACCESSORY INTERFACES MADE SIMPLE AND CHEAP.** R.J. Edmunds. A discussion of methods of interconnecting DX equipment. (6)
- R10 **UP THE CARRIER.** W. Bailey. Dig the weak DX out of the mud with this form of exalted carrier reception. (1)
- R11 **PRECISION FREQUENCY MEASUREMENT.** R. Schatz. How to use the frequency counter, an instrument now within the budget of the average serious DXer. (3)
- R12 **THE FM-3 FREQUENCY MARKER STANDARD.** R. Foxworth. A review of operation, how to make the proper connection to the receiver, and some modifications incorporated by the author to permit full use of the unit's capabilities. (8)
- R13 **SINGLE SIDEBAND RECEIVING ADAPTERS.** T. Sundstrom. How to sharpen your receiver's IF bandpass using a B&W 370 receiving adapter. (2)
- R14 **REVIEW OF THE AUTEK Q-BOX.** T. Sundstrom. Describes the uses of this new noise filtering device and its applications in MW DX. (3)
- R15 **REVIEW OF THE HEATH SB-620 SPECTRUM ANALYZER.** R. Foxworth. A comprehensive and detailed analysis of the unit's operation and uses as related to MW DX'ing. (32)
- R16 **THE WORCESTER LONG DISTANCE AM RECEIVER.** J. Worcester. A stage by stage description of the construction, theory and circuitry of a new type of AM DX receiver. (25)
- R17 **BUILD YOUR OWN AUDIO FILTERS.** P. Sullivan. A somewhat technical theory and construction article on inexpensive homebrew audio filters for the DXer. (8)
- R18 **TWO METHODS OF DIGITAL READOUT FOR THE TRF.** C. Hutton, Bill Block, and Frank Aden, Jr. You've already "souped-up" your TRF with the numerous other modifications - now add digital readout! One method for a built-in, and another for an outboard readout are explained. (5)
- R19 **A BRIEF REVIEW OF THE AUTEK QF-1 AUDIO FILTER.** C. Hutton. A non-technical review of this new noise and interference filter. (2)
- R20 **A FREQUENCY COUNTER FOR RECEIVER TUNING.** R. Foxworth. A very thorough paper on digital readouts & what to look for in various models. Discusses technical theory and provides circuitry to enable the experimenter to build a counter for use as a "digital dial". Very thorough. (13)
- R21 **AM STEREO - FOUR SYSTEMS IN AN OPEN MARKET.** Arnim Littek. If you've been wondering about the various systems now available, this article explains the strengths and weaknesses of each, complete with diagrams of how each system works. (6)
- R22 **THE LYNODYNE CRYSTAL WIRELESS RECEIVER.** R.W. Tuggle. The concepts of vintage crystal radio are incorporated in these detailed construction plans for a simple receiver, offered as a sporting alternative to modern receivers; yet it has the potential for real DX. (2)
- R23 **DIVERSITY RECEPTION.** C. Hutton. Using more than one antenna and receiver in an effort to reduce fading and interference on one frequency. This article deals briefly but concisely with the basics of "DR" and how it can be applied to Medium Wave DX. (1)
- R24 **TIPS ON REMOTE TAPING.** R.J. Edmunds. Are you going away during that rare DX Test? This article explains several methods you can use to turn your receiver and recorder on while you are otherwise occupied. Useful with R9. (2)
- R25 **STRONG SIGNAL HANDLING.** C. Hutton. This technical article explains that sensitivity and selectivity are not the only, nor the most important, considerations in a receiver. (6)
- R26 **RECORDING JACKS FOR RECEIVERS.** Dave Arbogast. A simple step-by-step procedure is outlined for adding a tape jack to almost any receiver. (1)
- R27 **TAPE RECORDING HINTS.** Mark Connelly. A complete method of radio-to-tape interfacing for portable radios is detailed, complete with schematics and parts lists for construction. (4)
- R28 **CONVERTING THE R-390A POWER SUPPLY TO SOLID STATE.** Charles Taylor. A conversion process to change the older high voltage tubes to solid state diodes is described step-by-step. (7)
- R29 **R-390A ALIGNMENT CHART.** Charles Taylor. A step-by-step procedure for optimizing your R-390A's performance. (5)
- R30 **MCKAY-DYMEK DP-40 PRESELECTOR.** R. Foxworth. A non-technical description of of this useful filter accessory, plus some modifications to improve its performance. (2)
- R31 **THE SUPER HQ-180.** Dallas Lankford. Add a Collins mechanical filter to your "180". While not a "how-to" article, problems and results are discussed. (4)
- R32 **HQ-180A ALIGNMENT WITHOUT A 60 KHZ SOURCE.** Dallas Lankford. Although most RF signal generators do not tune below 100 KHz., the HQ-180A's 60 KHz IF can be aligned with a 455 KHz RF source. This reprint tells how. (4)
- R33 **R390A/URR PTO ALIGNMENT.** Dallas Lankford. The alignment procedure to achieve exact end-point alignment in the R-390A PTO tuning is detailed. See R28, R29, R34, & R35. (3)
- R34 **INSIDE THE R390A PTO.** Dallas Lankford. An in-depth article that explores the PTO tuning in the R-390A and shows how to improve it's performance up-to-specifications. See also R28, R29, R33, & R35. (4)
- R35 **THE R-390A ON LONGWAVE.** Craig Healy. The author tells of a simple and inexpensive method to modify the R-390A to tune below 500 KHz. (2)
- R36 **THE BBA-1 BROADCAST AMPLIFIER.** Mark Connelly. A project suitable for beginners which will increase the gain from your loop antenna. With it's simple operation, you can get those catches that would have been lost in the receiver's noise. (11)
- R37 **THE GENERIC HQ-180 IF ALIGNMENT.** William Marvin. Now, the non-technical DXer can keep his HQ-180 in top performance at all times with this procedure that requires no test equipment. (4)
- 11

- R38 VARACTOR DIODE APPLICATIONS FOR DXERS.** Mark Connelly. Discussion of the advantages and disadvantages of substituting the varactor diode for the variable capacitor in various DX projects. (10)
- R39 A "KNOCK-YOUR-SOCKS-OFF" REGENERATIVE PREAMP.** Ray Cole. A simple-to-build preamp that promises to nearly double your receiver's ability to dig weak signals out of the noise. (1)
- R40 THE TUGGLE CIRCUIT.** Ray Cole. Build yourself a simple but sensitive signal snatcher -- a super crystal set! See R22. (2)
- R41 THE DX TIME-MACHINE.** Craig Healy. Use your VHS VCR to record all or part of the AM Band for later listening! It may have started as an April Fool's joke, but with the modifications described, it really does work!! (3)
- R42 NOISE AND SIGNAL LEVELS ON THE BCB.** Marc Bergman. How much sensitivity does a receiver need? A practical view of signal level vs. BCB noise levels. (15)
- R43 CERAMIC FILTERS.** Marc Bergman. A listing and description of the most commonly available ceramic filters, with data from tests by the author. (9)
- R44 THE HQ-180 SERIES RECEIVERS SENSITIVITY TEST.** Dallas Lanford. Weak or bad tubes are the cause of many receiver problems and this simple test will help pinpoint them. (1)
- R45 REPLACING THE R70's PBT FILTER.** Gerry Thomas. Step-by-Step instructions to put in a better ceramic filter in your R70's passband tuning circuit. (3)
- R46 SURPLUS MECHANICAL FILTERS.** Marc Bergman. Test results of several reasonably-priced and available mechanical filters. (3)

DOMESTIC DX

- D1 1570-1580 STATION LOCATION MAPS.** Two maps pinpointing the locations of all domestic stations operating on these superb sunrise/sunset skip channels. A valuable aid to the sunrise/sunset DXer. Updated in 1983. (2)
- D2 IT TAKES TWO TO VERIFY, PLUS HELPFUL HINTS.** J. Murley & R. Schiller respectively. If you are unhappy with your domestic QSI returns, read this article on the station's attitude toward reception reports. Also, veteran DXer Ron Schiller gives tips on increasing your returns. (4)
- D3 THE DX TEST FROM A STATION'S VIEWPOINT.** Bill Croghan. A broadcaster gives some hints from his vantage point to help you arrange more DX tests and obtain more verifications. (1)
- D4 WHAT IS A PRE-SUNRISE AUTHORIZATION?** R.J.Edmunds. Some U.S. stations are authorized to operate with powers such as 14.3 watts during certain hours this article explains why. (3)
- D5 LONG DISTANCE RECEPTION OF DX TESTS.** F. Dailey. Are you thinking about asking a station to do a DX test? Here are some proven techniques that, if used by the station, could make it easier for DXers to hear the test. A must for novice CPC members. (1)
- D6 MAKING THE BEST OUT OF PREPARED-CARD VERIES.** Kelly Andrews. Ideas to show you how to obtain those elusive veries through imaginative and creative prepared cards. With numerous samples. (3)
- D7 ACCURATE DISTANCE DETERMINATION FOR GY DX'ERS.** Bill Hale. A method for determining distance of local-channel stations for the listener is presented, along with a table of geographic coordinates for every U.S. city with a GY station. (17)
- D8 ALASKAN RADIO** Rod O'Conner. Most recent information on Alaskan MW stations, including a map. Also includes a supplement on Alaskan Forces Radio Network. (5)

- D9 THE NSP SITUATION.** J.Starr. A look at this problem from the broadcaster's side of the fence. (2)
- D10 DX FROM THE TWILIGHT ZONE.** P.Sullivan. For various reasons, some stations are audible at sunrise and sunset only. This article explains the reasons. (4)
- D11 GRAVEYARD DX.** R.Foxworth, with addition by M. Levintow. This article tells you how to DX those cluttered local channels and get results. (15)
- D12 CANADIAN FAMILY LIFE...IT'S TWINS.** Explains why many station "families" exist in Canada. List of station groupings as of Nov. 1978, with 1979 - 1980 updaters. Includes LPRTs and other stations of better DX potential. (6)
- D13 THE POST-SUNSET AUTHORITY -- A DAYTIMER'S DILEMMA.** Jerry Starr. Light is shed on the confusing situation of "PSSA's" with first-hand information from the FCC. (4)
- D14 GRAVEYARD STATION MAPS.** Bill Hale. Useful maps for those who like the challenge of "dead" frequency DX. Includes station listings for each graveyard frequency. (13)
- D15 SOME TIPS ON IDENTIFYING UNIDS'S.** R.J.Edmunds. Offers practical tips on how to ID stations using reference materials and deductive logic. (2)
- D16 SUNRISE SKIP.** R. Kramer. Practical explanation of how to add stations to your log through understanding of pre-sunrise authorities, station allocations on clear channels and auroral effects. (7)
- D18 QSL'ING THE LOCALS.** Skip Arey. Some novel approaches and ideas for extracting a verie from your local stations. (1)
- D19 DXING: HOW TO "UP" YOUR TOTALS!** John J. Pieger. An antedote to "DX Burnout" and proof that there is DX after the first 1,000! Tips to help the seasoned pro with these problems as well as good advice for the novice. (3)

STATION LISTS

- L1 FREQUENCY CHECK LIST.** Joe Fela. Many U.S. stations run equipment tests at regular intervals and times. This list is a valuable aid to new loggings. Updated yearly. (4)
- L3 CUBAN STATION LIST.** This up-to-date listing is a handy resource for the International DXer. Updated yearly. (4)
- L4 NONDIRECTIONAL AERONAUTICAL BEACONS.** D.Davis. An explanation of the types of beacons found in and near the MW band, plus updated listing of aeronautical beacons. (6)
- L5 BROADCASTING IN GERMANY.** Arnim Littek. Beside a detailed listing of MW operations in Germany, there is included an overview of German broadcasting and networks, plus hints to help hear German stations in the U.S. (6)

FOREIGN DX

- F1 DXING CENTRAL, SOUTH AMERICA AND THE CARIBBEAN.** Mark Connelly. New listings, by frequency, of the "best bets" from these areas, along with the original Connelly/deLorenzo/Kazaross article, "DXing Latin America and the Caribbean". (9)
- F2 TA TIPS FOR BEGINNER.** Dave Yocis. Valuable information is offered here from a practical standpoint to the DXer trying for his first Trans-Atlantic receptions. (2)
- F3 PORTUGUESE FOR DX'ERS.** R.Schatz. Describes the important and unusual features of this language; a must if you DX Brazil. (2)
- F4 TA DX'ERS GUIDE TO SUNRISE-SUNSET TIMES.** Mark Connelly. A handy reference to SRS-SSS times with extensive tables for many locations to aid the TA DXer. (4)

- F5 **HUNTING LATIN BY MUSIC.** R.Schatz. Describes types of LA music indigenous to various countries and tells how to ID stations using this information. (5)
- F6 **ZONAL-ANALYSIS APPROACH TO TA DX.** Mark Connelly. A systematic method of grouping TA countries to help the DXer recognize different types of openings and improve TA reception. (4)
- F7 **ZONAL-ANALYSIS APPROACH TO PAN-AMERICAN DX.** Mark Connelly. Similar to F6, with the emphasis on helping the Eastern U.S. DXer log LA and South American stations. (5)
- F8 **STATION IDENTIFICATION.** An invaluable aid to the foreign DXer with tip on how to ID stations in nearly 50 languages! (2)
- F9 **SOME EASY TA'S.** Dallas Lankford. A guide for the beginning TA DXer to some of the most easily-heard TA's. (2)
- F10 **ID'ING JAPANESE BROADCAST STATIONS.** Charles Taylor. A must for the West Coast DXer - Helpful hints to make a seemingly difficult task much simpler, without actually knowing the language. (3)
- F11 **ITU FREQUENCY ALLOCATIONS AND THEIR IMPACT ON TA DX'ING.** Mark Connelly. Trying for TA's on their new frequencies? What are your chances of logging a specific station? All Region 1 Medium Wave frequencies are listed and what should be heard under good conditions. (6)
- F12 **COMMON SENSE TA DX STRATEGY.** Mark Connelly. Practical hints are given for newer DXers to hear Trans-Atlantic stations. (2)
- F13 **THE ODDS ON EVEN TA'S.** Mark Connelly. A frequency-by-frequency look at the possibilities of hearing Trans-Atlantic stations on channels shared with U.S. and Canadian stations since the new Eastern hemisphere plan took effect. (10)
- F14 **YOUR FIRST 30 COUNTRIES IN ENGLISH.** Mark Connelly. A useful guide to novice or expert DXer alike; with a listing of the best bets by country. (6)
- F15 **CARIBBEAN MW DX GUIDE.** Mark Connelly. A Country-by-Country guide to what stations to listen for. A companion to F1. (4)

MISCELLANEOUS ARTICLES

- M1 **LOCAL SIDEBAND SPLASH: HOW MUCH IS TOO MUCH?** G.P. Nelson. Many DXers complain about certain local stations overmodulating and producing large amounts of interference. Article describes FCC regulations on sideband radiation on the Medium Wave band and types of station-originated spurious radiation. (1)
- M2 **MODULATION ARCING.** J.Starr. Describes a frequent but rarely discussed cause of Medium Wave interference originating at the station that can wreak havoc on the Medium Wave band. (1)
- M3 **SUNRISE-SUNSET TABLES.** G.P. Nelson. These charts permit the DXer to determine accurate time of sunset and sunrise at any point in the world on any particular day. Very useful for international DXers. (9)
- M4 **RF INTERFERENCE AND THE HOME COMPUTER.** Bill Kruse, ANARC. Unfortunately, your home computer will cause interference on your DX rig unless precaution are taken; several solutions are discussed. (2)
- M5 **UNRESTRICTED RADIATION.** G.P. Nelson. Discussion of carrier current stations and how to hear them. (3)
- M6 **RF POLLUTION.** G. Hauser. General discussion of the radio interference problem and steps necessary to control it. (2)
- M7 **PATTERNS, PARTS I, IIA, IIB.** P.Hart. An understanding of the directional patterns used by North American Medium Wave stations is vital for the active domestic DXer. This series of articles explains in

authoritative detail what patterns mean and how the DXer can fatten his log by understanding them. (35)

- M8 **RETAIL ELECTRONICS PARTS SUPPLIERS.** Compiled by Mark Connelly. A MUST for the experimenter and project-builder: a comprehensive listing of parts suppliers who sell in small quantities to the public; with addresses, phone numbers, and specialties of each source. (5)
- M9 **MORE ON HOW DIRECTIONAL ANTENNA PATTERNS ARE PRODUCED.** Wes Boyd. Supplementary information to the articles contained in the current edition of the NRC Night Pattern Book (1)
- M10 **SUPERMODULATION AND EFFECTS ON DX'ING.** Steve Kennedy. Discussion why there is overmodulation and how this problem will affect the DXing hobby for some time to come. (3)
- M11 **TERRAIN CHARTS FOR PROPAGATION PREDICATIONS.** M. Connelly. This article details a method to prepare a chart of a DXer's surrounding terrain which can help enhance or diminish reception. (3)
- M12 **NOISE LEVELS AND USABLE RECEIVER SENSITIVITY.** C.Hutton. Discussion, in technical terms, of the effect of noise on receiver sensitivity. (5)
- M13 **GREAT CIRCLE CALCULATIONS REVISITED.** Mike Tuggle, with an addendum by R.N. Allen. If you like to do calculations, this is the article for you! Mike explains how to figure distance and direction of stations mathematically. Richard Allen has written a computer program for use with the new "home computers" to figure the Great Circle paths. (4)
- M14 **HOME COMPUTERS AND DX'ING.** Mark Connelly. An introduction to the use of the new generation of home computers as an aid to DX record-keeping and calculations, plus additional programs for most popular computers. (5)
- M17 **SOME THOUGHTS ON INTERFERENCE.** Skip Arey. Got a light dimmer around that kills DX whenever it's on? A simple modification is explained to stop the noise. (1)
- M18 **MANMADE INTERFERENCE ON THE BCB.** Dallas Lankford. Presents a systematic approach for evaluating a current or future DXing location in terms of man-made noise levels. (3)
- M19 **DXING SAFETY TIPS?** Anon. (April Fools type fun) Protect your TFF with this simple modification. A redundancy safety fuse. (1)

PROPAGATION

- P1 **MEDIUM WAVE SIGNAL PATHS, PARTS I, II, III, AND IV.** G.P.Nelson. Discusses Great Circle Paths, seasonal absorption patterns, auroral effects and the Mid-Winter Anomaly. (29)
- P2 **SOLAR CONTROL OF DAWN E-BLANKETING ON THE MW BCB.** G.P.Nelson. Explains how the position of the sun controls the fadeout time of trans-atlantic and trans-pacific stations. (2)
- P3 **EAST-WEST SYMMETRY AND THE FADE-IN PROBLEM.** G.P.Nelson. Explains how the sun controls the fade-in times for MW stations. (2)
- P4 **SUMMER RECEPTION ON THE BROADCAST BAND.** G.P.Nelson. First article describing the seasonal patterns in solar terminator location which makes summer MW reception from deep South America and Africa possible. (3)
- P5 **METEOROLOGICAL EFFECTS ON MW GROUNDWAVE RECEPTION.** R.J.Edmunds. Short term variations in groundwave propagation at MW frequencies and their relationship to weather conditions is discussed. (7)
- P6 **AURORAL EFFECTS AND THE 1969 TRANS-ATLANTIC LISTENING TEST.** G.P.Nelson. Brief simple description of how the geomagnetic and auroral phenomena control TA reception from various stations. Best general introduction to MW auroral effects. (5)

- P7 **THE AURORA OF NOVEMBER 6-9, 1970.** G.P.Nelson. Traces a classic auroral attack from its origin on the sun to its effect on MW reception. (3)
- P8 **COMPARATIVE MEASUREMENTS OF GEOMAGNETIC INDICES.** R.J.Edmunds. The author compares on a daily basis for three months the various A-index measurements as reported by several major observatories. He tells how the indices are related to each other. (3)
- P9 **SKYWAVE OR GROUNDWAVE RECEPTION?** G.P.Nelson. How to tell whether the signal from a station you are listening to is arriving via ground wave or skywave, or both. (3)
- P10 **A BEGINNER'S GUIDE TO THE IONOSPHERE.** Fr. Jack Pejza. Radio Wave propagation is influenced greatly by the conditions in the ionosphere. This article explains the processes which change the ionosphere and the effects of these changes on radio waves. (10)
- P11 **THE LIMITS OF MIDDAY MW DX.** G.P.Nelson. Comprehensive article describing the factors which influence radio wave propagation and reception during the late morning and early afternoon hours. (16)
- P12 **LIMITATION ON THE USE OF THE A-INDEX.** G.P.Nelson. While the A-index is a valuable tool, it is easily misinterpreted. This article shows why. (3)
- P13 **BCB RECEPTION DURING PERIODS OF HIGH AURORAL ACTIVITY.** G.P.Nelson. Describes the author's research into the effects of the aurora on MW propagation. (8)
- P14 **SKYLINE BLOCKAGE.** Fr. Jack Pejza. Mathematical derivation of the formulas needed to calculate the effect which terrain has on signals. (10)
- P15 **SKYLINE BLOCKAGE, SOURCES OF UNCERTAINTY.** G.P.Nelson. Takes into account the possibility of signal propagation by some less common modes which are subject to blocking by the horizon. (9)
- P16 **HORIZON BLOCKAGE: CAN FRESNEL DIFFRACTION BE IGNORED?** G.P.Nelson. No, it can't !! This article shows how signals that should be blocked by the horizon can sometimes be heard. (10)
- P17 **TRANSPOLOR DX RECEPTION.** R.J.Edmunds. Are you looking for Asian DX more exotic than Urumchi-1525? This technical article relates to the trans-polar reception of central and eastern Asiatic stations at sunset in North America. (27)
- P18 **OBSERVATIONS OF TRANS-ATLANTIC MW RADIO SIGNALS.** C.W.Bailey. The results of a lengthy survey of TA receptions made over a one year period. (3)
- P19 **PROPAGATION AT MW FREQUENCIES.** P.Sullivan. Discusses some aspects of the factors which control signal reception on the BCB. (6)
- P20 **FACTORS OF MW PROPAGATION.** F.Dinning. Further discussion of the nature of MW propagation. (6)
- P21 **DOMESTIC PROPAGATION-ANSWERS TO FREQUENTLY ASKED QUESTIONS.** R.J.Edmunds. A brief discussion on some of the propagational factors that affect domestic reception. (1)
- P22 **REVIEW OF SOLAR ACTIVITY FOR THE MW DX'ER.** R.J.Edmunds. A concise explanation of the Fredericksburg A-index as well as its use in the hobby is given in this article. Goes with P1, P6, P7, P10, P12, P13, P19, and P20. (2)
- P23 **MEDIUM WAVE IONOSPHERIC PROPAGATION PLUS THE SEQUEL TO....** R.Schatz. These articles take a different approach to propagation and presents new terms and theory. An introduction to P24. (11)
- P24 **TERMINATOR TRANSIT MECHANIX.** R.Schatz. Parts I, II, III, IV AND IV-A of a series which the author states features practical techniques to hear new stations; techniques never before available. (33)

- P25 **SUNSPOT CYCLE 21 - THE PEAK - HOW MUCH AND WHEN.** O.Oklehen, H.R.REPORT. This article, through careful predictions, shows how the next peak in solar activity will be one of the most severe in recent history: includes additional comments by R.J.Edmunds. (3)
- P26 **ATMOSPHERIC AND GALACTIC NOISE ON THE BCB.** Dallas Lankford. Amounts of various types of noise are compared to receiver sensitivity in this technical discussion. (3)
- P27 **ON THE NATURE OF SCIENCE AND THEORIES OF BCB PROPAGATION.** Dallas Lankford. Discussion of several theories, concentrating on the controversy concerning the degree of the arrival angle of signals propagated over long distances. (3)
- P28 **DXING THE 1984 SOLAR EXLIPSE.** Gerry Thomas. A "play-by-play" account of one DXer's experiences during this rare DXing opportunity. (3)
- P29 **ON OBLIQUE PROPAGATION.** Dallas Lankford. Very technical discussion on the theory of oblique incidence nighttime ionosphere at BCB frequencies. (12)
- P30 **MEDIUM-WAVE OBLIQUE PROPAGATION - ANOTHER VIEW.** Randall J. Seaver. Some different interpretations are presented on this subject, as well as examples of MW propagation analysis using the Knight Wave-Hop method. (8)
- P31 **A SURVEY OF AVAILABLE MW FIELD STRENGTH PREDICTION METHODS.** Randy Seaver. A look at what the broadcasting industry and its regulating bodies are doing and have done in the field of frequency propagation. (12)

RECEIVER REVIEWS

- RR1 **RECEIVER COMPARISONS - WHAT DO THEY MEAN?** R.J.Edmunds. Certain problems arise when comparing product summaries and receiver reviews. The author explores these comparisons with an emphasis on MW DX. (2)
- RR2 **QUALITATIVE REVIEW OF THE YAESU FRG-7 RECEIVER.** G.Hauser. A detailed non-technical review of this popular communications receiver. (3)
- RR3 **DRAKE R7-A REVISITED.** Craig Healy. Comments from a satisfied user who found this modern-technology receiver an excellent replacement for his older R-390A. (2)
- RR4 **HEATH GR-78.** R.Schatz. (2)
- RR5 **BARLOW-WADLEY XCR-30.** M.Hardester. (2)
- RR6 **SONY ICF-6500W - THE PERFECT PORTABLE?** Gerry Thomas. This versatile and easy-to-operate portable is detailed, and put through a side-by-side comparison with the TRF & superadio - is it the perfect portable? See R8 for recommended modification. (4)
- RR7 **A NON-TECHNICAL REVIEW OF THE WORCESTER LONG DISTANCE RECEIVER.** J.Starr. A user's critical commentary of this revolutionary receiver. Built in limited quantities, this receiver is not readily available to most DXers. (4)
- RR8 **MCKAY-DYMEK DR-22.** J.Clements. A detailed, non-technical pre-production review. Mentions features, performance and how it measures up to receivers now in use. (3)
- RR9 **ICOM IC-R70 COMMUNICATIONS RECEIVER.** Vincent Finto. An in-depth, technical look at a recent entry in the new breed of receivers - a surprising rig at a surprising price. See R4 for recommended modifications. (11)
- RR10 **THE GE SUPERADIO-CASSETTE.** Michael Sapp. The famous GE Superadio with a new twist - an integral tape recorder! But is it as good as the original model? Read this article to see. (4)

- RR11 **ESKA RX 12 PL.** Rafael Calabuig (for DSCWI). From Denmark comes a new portable built especially for DX applications. (2)
- RR12 **REALISTIC DX-400 TEST REPORT.** Bruce A. Conti. A user-report on how this lightweight general coverage receiver performs as compared to the portable DX standard -- the TRF. (3)
- RR13 **THE SONY SRP-A100.** Greg Monti and Albert S. Lobel. Two looks at the first low-cost AM-stereo portable receiver on the market. (5)
- RR14 **THE ICOM IC-R71A RECEIVER** - From the Australian "DX CALLING" Magazine. User review with commentary by the "DX Australia" Technical Team. (7)
- RR15 **UNIDEN CR-2021 VS. SONY ICF-6500W A COMPARISON.** Gerry Thomas. Two good digital-readout, microprocessor-controlled portables for under \$100 are compared performance-wise. Also, how to install a simple high-pass AF filter in the ICF-6500W is described. (3)
- RR16 **NRD-515 REVIEW.** Bob Foxworth. A detailed review and commentary on Japan Radio Corporation's newest receiver. (7)
- RR18 **SURVEY OF HAMMARLUND RECEIVERS.** Dallas Lankford. This article should be read in conjunction with the Receiver Reference Manuals I and II. A summary of the full line of Hammarlund receivers suitable for BCB DX; with comparisons, modifications and hints when purchasing one. (8)
- RR20 **THE GE SUPERADIO-PLUS.** Dick Truax. User first impressions and opinions of this digital-readout version of the popular GE "Superadio". (1)

PRODUCT SUMMARY

- PS1 **DRAKE SSR-1 RECEIVER.** Bob Foxworth. (1)

MUG 9 Ounce Milk White Glass Coffee Mug with NRC Emblem printed in Black on both sides. It's Oven-proof. Makes a Great Gift for a fellow DX'er or for yourself!! \$5.50 U.S. Addresses; \$6.25 Canadian Addresses; Other Countries please inquire first.



1988 World Radio TV Handbook The 1988 WRTH will be published in Dec. 1987 or Jan. 1988 and retail at approx. \$19.95 + shipping. Prepublication orders are being taken at \$18 Book Rate or \$19 First Class Mail in the USA only. CA residents, please add \$1.08 sales tax. The deadline for this special price structure is 20 November 1987. Thereafter, until further notice, the price is \$20 for Book Rate or \$21 First Class Mail. Orders, with check or money order payable to CENTURY PRINT SHOP, including applicable sales tax, should be mailed as early as possible to: Century Print Shop, Don Erickson, 6059 Essex Street, Riverside, CA 92504-1599. (Please mention your club affiliation or source of info when ordering). Inquiries welcome at (714) 687-5910. Back copies of WRTH, 1981 thru 1987 may be ordered at \$20 ea., 2/\$35, 3/\$49, 4/\$62, mix or match years.

by Bruce A. Conti

Ambiguities in documentation concerning the beginning of radio broadcasting have many stations competing for recognition as the first broadcaster in history, even though radio station KDKA is widely recognized as the first. A summary of the evolution of broadcasting published by the Federal Communications Commission states:

The identity of the "first" broadcasting stations is... a matter of conflicting claims. This is due largely to the fact that some pioneer AM broadcast stations developed from experimental operations. Although KDKA Pittsburgh did not receive a regular broadcasting license until November 7, 1921, it furnished programs under a different authorization before that date (Broadcasting A-1).

The Licensing of public radio stations began with the passing of the Radio Act of 1912, when the Navy gave the responsibility for stations other than its own ship-to-shore operations to the Department of Commerce. Through international agreements, blocks of call letters were assigned to different nations so that each could organize transmitter operators in a matter that would avoid confusion. Before the Department of Commerce began issuing official broadcasting licenses in 1921, they licensed all public radio stations as experimental stations. This was because the future of the new technology of wireless communications was unknown (Kneitel 6-7). So the term "experimental" was applied, meaning the stations were on the air for the purposes of research and development (Graf 206), even though the transmissions may have also been considered as general broadcast to the public by the radio station operators.

KDKA began as experimental station 8XK. Dr. Frank Conrad, assistant chief engineer for the Westinghouse Electric and Manufacturing Company of Pittsburgh, began experimenting with wireless transmissions from his home sometime before World War I. During the war, his stations was used to test military equipment for Westinghouse. It was not until after the war when Conrad began to send out programs consisting of music and information for radio listeners, four years before 8XK became KDKA in 1920. As his programs became more popular, Conrad began to announce a schedule which informed listeners about future "broadcasts". Thus, Conrad became the first person known to have used the term "broadcast" in this manner (Settle 34-35). The term was previously used to describe the wireless communication of orders to ships at sea by the Navy, and was originally used by farmers in reference to the scattering of seeds (Broadcasting A-1). Conrad's broadcasts were first noted nationally through an article which appeared in The New York Times in 1919, which told of the phonograph records being transmitted to listeners in Pittsburgh ("Phonograph" 3). But still, no real interest in the broadcasts was generated until September 29, 1920, when a department store ran an advertisement in the Pittsburgh Sun about the sale of wireless receivers for the purpose of hearing Conrad's broadcasts. After reading the ad, a top executive of Westinghouse realized that some money could be made by selling receivers and promoting sales with regular broadcasts (Settle 36).

Westinghouse submitted an application to the Department of Commerce for a more powerful station to replace 8XK for the purpose of general broadcasting. A license was approved on October 27, 1920, with the call letters KDKA assigned. This was just in time for broadcasting of the Harding-Cox election returns on November 2. The event was a big success, and KDKA became known as the world's first broadcaster. The station demonstrated the potential of radio and excited the nation (Barnow 69-70).

Next to KDKA, the one that is probably most deserving of credit for being first is radio station WWJ in Detroit. This station began as experimental station 8MK early in 1920, and was owned and operated by the Detroit News. On August 20, 1920, formal broadcasts commenced, and were announced in advance in the newspaper. On August 31, it was announced on the front page that 8MK would be transmitting the primary election returns along with miscellaneous news and music beginning at eight o'clock that evening (Barnow 62-63). On the next day, the newspaper reported:

The sending of the election returns by the Detroit News radiophone on Tuesday night was fraught with romance and must go down in the history of man's conquest of the elements as a gigantic step in his progress; in the four hours that the apparatus, set up in an out-of-the-way corner of the News building, was hissing and whirring its message into space, few realized that a dream and a prediction had come true. The news of the world was us -- even for those who were not present -- through the unseen crowds in the unseen marketplace (63).

It was also announced that 8MK would be transmitting the Harding-Cox election returns in November. However, the 8MK broadcasts went relatively unnoticed by the nation. In A History of Broadcasting in the United States, Eric Barnow explains:

The Detroit News, intent on publicizing itself, could perhaps not justify extensive publicity in rival papers. The Westinghouse bulletins, on the other hand, came to newspapers not from a rival but from a large-scale advertiser, launching a nation-wide merchandising campaign. It readily won wide publicity (74-75).

Another broadcaster that has a claim to being the first is radio station KCBS in San Francisco, formerly licensed to San Jose as radio station KQW. KCBS is listed in the Broadcasting Yearbook 1975 as being on the air since April of 1909 (C-24). KQW began as experimental stations 6XE and 6XF, along with other identifications (Kneitel 23), associated with a College of Engineering started in 1909. Students conducted voice experiments with the station until about 1912 when the experiments developed into weekly programs consisting of music and news. However, these regular broadcasts were still considered to be experimental, as the programs almost always ended very abruptly due to equipment failure (Barnouw 34-35).

One of KDKA's neighbors, radio station KQV in Pittsburgh, has also had something to say over the issue of who was first. In response to questions about the station contained in the recent reception report, KQV chief engineer Gerald Larrel writes:

KQV was the first licensed radio station in America, licensed November 19, 1919. KDKA and WBZ deserve all the credit they have been given through the years because they did pioneer radio as we know it today, but KQV was the first. Westinghouse, owners of KDKA and WBZ, have waged an aggressive public relations campaign through the years to publicize their pioneering, but have not claimed to be the first licensed station. KQV has never seriously challenged their claims because documentation does not exist to prove the point. Just a matter of historical interest (letter).

The earliest reference to KQV's existence was in a station roster from 1923 (Kneitel 25). Why does it appear that the experimental stages of KQV are undocumented? Maybe the KQV experiments were overshadowed by the popularity of Dr. Frank Conrad's broadcasts on 8XK.

The first licensed station for the purpose of broadcasting, according to research recently conducted through old Department of Commerce files, is radio station WBZ, originally licensed to Springfield, MA, on September 15, 1921. It is interesting to note that according to these same files, on November 7, 1921, KDKA was the seventh station issued a broadcasting license (23). Because both WBZ and KDKA are owned by Westinghouse, that technicality is overlooked for the obvious reason that the KDKA broadcast of the Harding-Cox election returns was a significant event in radio history despite the actual terminology used in licensing.

Like KQV, radio station CFCF in Montreal is also claiming to be "the first broadcasting station in North America started in 1919" (QSL card, CFCF), although precise documentation as to how CFCF got started seems to be non-existent. There are even more stations with similar claims. These stations must have been truly experimental in nature, with erratic transmissions only heard by neighbors and friends; they were not worth noting in the newspapers and did not have the backing a large company like Westinghouse could provide. For now, it appears that KDKA's claim to fame is well deserved. At least KDKA provided the direction wireless broadcasting needed to become what it is today.

Works Cited

Barnouw, Eric. A History of Broadcasting in the United States, Volume 1 - A Tower in Babel. New York: Oxford University, 1966.

Broadcasting Yearbook 1975. Washington DC: Broadcasting Publications Inc., 1975.

Graf, Rudolf F., ed. Radio Shack Dictionary of Electronics. Indianapolis, IN: Howard W. Sams, 1974.

Kneitel, Tom. Radio Station Treasury (1900-1946). Commack, NY: CRB Research, 1986.

Larrel, Gerald W. Personal letter. 16 Sept. 1985.

"Phonograph Selections transmitted in Pittsburgh." The New York Times. 26 Dec. 1919: 3.

QSL card. Radio Station CFCF. Montreal, PQ: 17 Jan. 1974.

Settel, Irving. A Pictorial History of Radio. New York: Citadel Press, 1960.

KBRO

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MUSINGS

Paul Swearinon

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The opinions expressed in this column are those of the individual writer and do not necessarily reflect those of the Editors, Publishers, or the National Radio Club, Inc., or its subsidiaries. Times are local per Muse.

I'm holding two Muses, from Bill Hardy and Rick Evans, for next week's reintro issue, leaving a slim three for this week. Your next deadline (10-24) will be dedicated to NRC'ers living south of Topeka; those east of Topeka should try to make the 10-31 deadline; west, 11-7; and those living outside of the 48 states, 11-14. I note that the "1" key and space bar don't want to work on this C-64, and furthermore my trusty Sanyo Beta VCR broke down today. However, as hay fever season is passing, I feel fine, so let's get on with it!

Andy Rugg, VE2AQP - 669 de Gaspe, #218 - Nuns Island, PQ H3E 1J1

I DX'ed occasionally during the summer and ended up with 3 more new logs. MM 7-24: I awoke early and couldn't get back to sleep. Flicking on the Superadio, I tried again for my number one target, WMRS-1350. From 6:29 to 6:34 am, they were weak but solid u/CJLM. Then on 8-5, WNNZ-640 and WSSH-1510 were easy logs around 9 pm. Thanks to Howard Kemp for the tips on all three! Veries are WNNZ-640 and WMRS-1350.

At the end of August, I was able to combine a business trip with the CIDXC Convention in Edmonton. It was one of the better conventions that I have attended over the years. The evening of 9-1, I was in an interesting DX'ing location at Gull Harbour, MA. However, TVI and fair-to-middling receiving cx scuppered any attempt at serious DX'ing on the TRF. The next day, en route to Gypsumville, the daytime bandscan on the car radio was particularly interesting, especially the North Dakotans such as KFVY-550, KSJB-600, and KFGO-790. Back east, at SS on 9-7 I was driving home from the golf course and couldn't resist the temptation to scan the band on the car radio. Just east of Hawkesbury, ON, I was surprised at 7:25 pm when WYSL-1030 upsurged behind WBZ and topped the channel briefly at 7:27, before signing off and fading away. Reception occurred well beyond the "25-mile zone", and I can't count that one. I haven't heard a peep out of it yet on Nuns Island. Canadian postal rates will rise another penny on January 1, 1988. Once the golf season and the World Series are out of the way, I hope to check in with some serious DX in November. 73.

Harry J. Hayes - 9 Henry St. - Wilkes-Barre, PA 18702 ELT

I had a nice time visiting my friends in Lima and seeing a few new faces in an area of the country I've never been in before. I have an important subject to discuss, that of what was heard this September. We start with 9-13 and WZYQ-820 Frederick, MD noted with "notable" signal at 1:27 in the afternoon. To my surprise they put in a listenable signal here on the SM-2 and radio. "Country-Q" and naturally country mx. Later that day: 1828: WKQW-1120 Oil City, PA with recent odies mx. 1911: WRMC-1370 Roaring Springs, PA with MYL mx. 1915: WQGM-1410 VA with s/off thru WDOV. 1920 WLIIS-1420 CT, sort of lumbering thru the crowd. 1941: CFJR-830 ON with T-40. 2006: unID on 840 with FF, who? 9-19: WROL-950 Boston with Irish programming. Could I abbreviate that "II" or woud that be mistaken for Italian? (Or "2", as in WWII, hi -pls) 9-25: 2000: WNNZ-640 Westfield, MA, which is ex-WLDM-1570 with signal not that much better than the old 1570 one; at least not tonight, we'll see how they are other nights. 2010: WADS-690 CT really loud o/Canadian with local FB coverage. 2020: WSOC-930 NC with c&w mx and female annrc.

Tonight was somewhat auroral with a lot of the CBC Canadians remaining out until around 11 pm. 940 was interesting until that time, with reception of Des Moines on the channel with T-40 and oldies, followed by, I believe, WKYK in Burnsville NC. I only hrd ID but no other information. The Cuban Relej was there, of course, but then another SS overtook them, which was Mexico City. By 10:15 pm this was about local strength with what sounded like lottery information every five minutes interspaced by music. By 11 pm the Canadian came up strong and squashed them. Quite an odd night. Continuing on 9-26: 1945: WWAZ-790 RI very loud, ex-WEAN. 9-27: 1915: WMPM-1270 NC with s/off which I think was probably recorded 20 years ago. Will keep the radio on. I am hoping for some good ones this season if my heavy work load allows me a few weekend sessions. Oh, yes: good luck to you in KS, Paul. (Thanks; I'm having fun again! -pls)

Stephen Goozovav - 17 Beethoven St. - Binghamton, NY 13905-4245

Greetings from Binghamton, where the rain just will not cease. Another DX season is about to get underway, and I thought that now was as good a time as any for a Musing. The '86-'87 DX season was a good one from here, especially for TA reception, and a band full of hets in early September suggests more excellent TA reception for this fall. Receptions from last year included the Albanian on 1215, Yugoslavia-1134, East Germany-783, Saudi Arabia-1521, and Norway on 1314, at times with an unbelievable signal! Also a lot of domestic DX, mostly from here in the northeast, was logged. Loggings of new stations, or stations on new frequencies abound: WNNZ-640 MA, WWAZ-750 Olyphant, PA (a semi-local called "wax" radio - wonder how they thought of that?) (wax in your ears, of course, hi -pls), and WII-720 PA, a logged here in the last little while.

WARD-1550 in Pittston, PA has increased their power to 10 kW and are getting out much better than with 5 kw. Locally, some folks are paying musical radio stations. It seems

that the owner of WINR has decided to buy WENE and WMRV (FM), so he has to sell WINR or face the FCC execution squad. Format changes will come - they have to. All the local AM stations are doing the same kind of oldie-CHR mix (and maybe even sharing the records) ... Well, even if Binghamton doesn't have a real radio station, it does have a genuine NRC editor now. Yes, Bill Hale is now living and DX'ing in Binghamton as all the DDX-East fans know, and Binghamton is fast on the way to becoming the DX capital of the world, though perhaps under water. *THE* club should now be called the National Tiny Chunk of the Radio Spectrum Club. Sorry for sarcasm, but Stevie finally gets his first mess of real FM DX and there's nowhere to send the report ... Well, enough nonsense from me. On to somebody else's Muse (probably somebody who knows enough to use paragraphs and correct punctuation). (That's where my English teacher training comes in handy, hi! -pls) 73.

Government Officials Shoo Away Sorcerers From Colombia Airwaves

Knight News Service

BOGOTA, Colombia — The government, which is fighting an uphill battle against powerful armies of guerrillas and drug traffickers, is taking on another formidable enemy — sorcerers.

In recent weeks, the government has shut down nearly a dozen radio programs conducted by sorcerers and witches, and has fined the radio stations that carry them. These programs, generally broadcast between midnight and 7 a.m., have mushroomed over the last three years, captivating growing audiences throughout Colombia.

"It's a serious problem," Communications Minister Fernando Cepeda said in an interview.

"These sorcerers are telling people in their radio programs to prepare the most incredible concoctions. We've even heard of cases of children dying after their parents made them drink these preparations."

Ironically, the crackdown on the radio sorcerers takes place in a country that prides itself on having one of the best records on freedom of the press in the hemisphere. Colombian newspapers and magazines often carry uncensored interviews with leftist guerrilla leaders, drug barons, and politicians who make the wildest allegations against the government.

Sorcerers are a different story, government officials say. For one thing, a law specifically prohibits radio stations from broadcasting ads for "professionals without the proper diplomas, spiritualists, sorcerers, witches and seers."

Although the law dates to 1975, it had never been fully enforced. The government decided to act earlier this year after press reports exposing how radio sorcerers are bilking millions from unsuspecting victims. Many radio stations are appealing the government measures, however, and their sorcerers continue on the air.

There are as many as 30 sorcerers and witches who have their own radio programs throughout the country, according to unofficial estimates. In addition, hundreds, perhaps thousands of Colombians claiming to have extraordinary powers have set up their own consultation offices.

Two reporters of Radio Santa Fe who publicly asked the government to crack down on the sorcerers' programs, German Salgado and Leonel Liscano, say they have received several death threats since they denounced the radio sorcerers. The two last month requested police protection.

Typically, the radio sorcerers read letters presumably written by worried listeners and offer solutions to their problems. Often, the sorcerers say that cases are so complicated that letter writers must go to their offices for individual consultations. The interviews, critics say, cost between \$40 and \$200 — a small fortune in a country where most people make less than \$150 a month.

The programs' only advertising are the sorcerers' respective offices, whose addresses and telephone numbers are repeated time and again. The ads tell listeners they also may acquire exclusive talismans there.

Brothers Jose and Gregorio, in their Radio Melodia of Bogota program, have advertised the "trinosophic key" to success and fortune. Nobody remembers them ever explaining what "trinosophic" means, but they claim that their talisman "opens the doors to success in your business and sentimental life."

Another Radio Melodia program offers the Papal Pyramid, Gregorian Oil and the Unicorn — three talismans for the price of one. Radio Melodia programs also advertise talismans tailored for travelers, designed by a sorcerer who claims that he discovered "cosmopositive energy" that helps to fight off bad vibes in buses and

trains.

Officials are more worried, however, about the possible health hazards of concoctions that the sorcerers recommend to their listeners. Some sorcerers have told their audience to prepare allegedly magic mixes including human blood.

Supporters of the radio sorcerers say their preparations are harmless. The Amazonian Indian, for instance, a sorcerer who has a program on Cucuta's Radio Zulima, advises women experiencing menstrual pains to boil 14 ounces of milk with 3.5 ounces of onions cut in thin slices.

He recommends that, when the pains start, women drink a cup of the mix.

The radio sorcerers' growing popularity is largely due to their increased access to the media, government officials say. Radio advertising is down because of Colombia's depressed economy, and sorcerers are buying large chunks of late-night programming that private radio stations otherwise would find hard to sell, they say. ■

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