



DX NEWS

*the magazine of the
National Radio Club*

— SINCE 1933 —

Volume 56, No. 13 - Monday, December 26, 1988 (ISSN 0737-1659)

DX Tests ...

January 2, Monday - 1-1:30 am EST: WBET-1460, with frequent ID's, 1 kHz tones, at 5 kW ND day pattern. V/s: Peter George, Station Engineer - 60 Main St. - Brockton, MA 02403. (Peter George, NRC)

January 16, Monday - 3-3:30 am EST: WKAC-1080, with code ID's. V/s: Kirk Harvey, PD - P. O. Box 1083 - Athens, AL 35611.

January 23, Monday - 2:29 a - 2:58 am EST: WVNA-1590, including Morse ID's. V/s: James Alan - Box 477 - Tuscumbia, AL 35674. (Wayne Heinen, NRC)

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From the editor ...

William T. Farmerie

John Kapinos, Tom Farmerie's neighbor, phoned me December 17 to inform me of the sudden death of Tom. He was quite active in the NRC, producing the 50-year anniversary book for the Enfield, CT convention in 1983. Ironically, his final Muse appears in this issue; as always, he offered suggestions to other DX'ers. John promised to send a copy of the obituary, so we should have more information next issue.

Holiday miscellany ... You will not receive your next issue, #14, until January 9. Thanks to all who sent me holiday greetings; I appreciate your kindness. And I hope Santa brought you the goodies of your choice! The period from now through New Year's weekend can be a very productive time for DX'ers, who may catch stations off the air at odd times and pirates who take advantage of the holiday. As I type this I still do not know if I'll get the key to the house I'm buying by Dec. 23, but I suspect that I'll be moving throughout the holiday, leaving little time for DX'ing. Please continue to use P. O. Box 5711 to avoid delay.

Joseph Johnson, Savannah, GA checks in this week with a nice letter, wondering about the dearth of call letter logos in DXN. Well, the appearance of those is directly proportional to the amount of time I have on

the weekend, as I try to match them up with stations' appearances on the same page, and going through my files takes time. And Wilfred Ritayik writes to say that after his quadruple bypass surgery in Jan., 1987, he finds it almost impossible to get out of bed in the middle of the night to DX. I know how you feel ... I almost need surgery to separate myself from my bed weekdays at 5:30 am just to get up and go to work! Wilfred wanted me to thank all the "hard workers" for their contributions to DXN. And so as 1988 draws to a close, I'll do just that. Thanks, guys and gals! And now ... on with it!

DX Time Machine

From the pages of DX News

Ten years ago ... From the Dec. 28, 1978 issue of DXN: New members included Robert Ruckman, Kettering, OH; Steven D. Miller, Boston, MA; William J. Lam, Columbus, OH; William R. Bartels, Fox Lake, IL, and Henry Stratmann, Jr., East Carondelet, IL ... CPC tests numbered only two.

Twenty-five years ago ... From the Dec. 28, 1963 issue of DXN: 23 tests were arranged, 11 by the NRC ... John Howard Harding, Akron, OH, rejoined and varied YNOL-825, Managua, Nicaragua; CFCY-630, Charlotetown, PEI; and ZNS-1540 Nassau, Bahamas ... 11-year-old George Junak, Pasadena, CA checked in with 3 new veries, from KOMO-1000, WMAQ-670, and KBAT-680 ... Bernie Duffy, Staten Island, NY, recommended trying for WPOW-1330 at their 4 am weekday s/on time.

Forty years ago ... From the December 24, 1948 issue of DXN: 46 tests were listed ... Ray Edge mentioned sending a report to WKIN covering a time span from 1:16 to 5 am. He had a letter verie back in two days ... Stan Morss said he was down to his last 50 report forms - of course, the club was out of them at the moment ... Bernie Duffy, Staten Island, NY, reported hearing the s/on of WKJB-1340, Mayaguez, PR.

AM SWITCH

Jerry Starr

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

CALL LETTER CHANGES

Old call:		New call:	
540 WDAK	GA Columbus	WSTG	
550 WHLM	PA Bloomsburg	WJMW	
1330 KVKM	TX Monahans	KLBO	
1600 KWHM	AR West Helena	KJIW	

APPLICATIONS/GRANTS FOR NEW STATIONS

None

CANADIAN ALLOCATIONS

1020 BC Terrace: 10000/1000 U1	Note: These represent more of the frequencies available for Canadian stations resulting from the Canadian/American agreement of several years ago. These are not actual applications but are frequency/power allocations that are available. Prospective licensees still have to make formal application for a new station on these available freqs.
NS New Glasgow: 10000/1000 U2	
ON Kenora: 10000/1000 U2	
1030 AB Edson: 10000/300 U1	
1100 NF Corner Brook: 10000/5000 U2	
1120 BC Fort St. John: 10000/250 U1	
NS Halifax: 50000/20000 U2	
ON Timmins: 10000/2500 U2	
1160 AB Vegreville: 10000/2500 U2	
PQ Baie-Comeau: 10000/2500 U2	
1180 PQ Perce: 10000/1000 U2	

APPLICATIONS FROM EXISTING FACILITIES

560 WGAN	ME Portland: reduce powers to 4800/4800 watts
890 KBBI	AK Homer: powers to 10000/10000 watts
900 WSEA	DE Georgetown: night power to 4000 watts
1000 KRHS	AZ Bullhead City: power to 5000 watts
1110 *App	AZ Tucson Estates: amend application power to 2500 watts
1200 *App	KY Pleasure Ridge Park: amend application to raise CH power to 50000 watts, antenna from U7 to U4

Note: Those who have noticed the close proximity of Pleasure Ridge Park and Radcliffe, KY (both suburban Louisville) have asked what happened to the 1200 kHz CP for WANG Radcliffe. The WANG CP was never built and has been cancelled making 1200 kHz available again in the Louisville area. This application is totally separate from the existing CP for WONS-1040 in Pleasure Ridge Park which, by the way, still isn't on the air.

GRANTS TO EXISTING FACILITIES

920 KBNA	TX El Paso: reduce nightpower to 360 watts, relocate XR
1460 WPON	MI Pontiac: to Walled Lake, MI, night power to 820 watts
1480 WLEE	VA Richmond: night power to 600 watts

OTHERNESS

590 WROW	NY Albany: station has NOT gone silent as previously reported here, a misinterpretation on our part, sorry.
830 WRFM	FL Haileah: new station is ON THE AIR, Spanish language
1320 WANI	VA Richmond: station is SILENT
1340 KATY	CA San Luis Obispo: station is SILENT
1400 WVXX	GA Alpharetta: silent station is back ON THE AIR
1510 WMHQ	NJ Dover: station is SILENT

THANKS to Laura McCusker for her contributions to this edition!

73 and Good DX, *Jerry & BKF* Jerry Starr & Buffalo K. Foonman

William Hale

2160 Farm To Market Road, Johnson City, NY 13790

NEUTRON WAVE FANBLINGS

- Our DX Family grows again this week with a fine report from Bob Tiara of Hendersonville, NC. Welcome to the pages of DX News, Bob. Glad to have another reporter from Carolina Country. And Gary Mitchell checks in again after a long absence. I hope the spark is back, Gary.
- Anybody out there interested in trading airchecks? If so, write to Bill Eckart, Box 800015, Bethany, OK 73008-8001.
- The deadline for getting tips and your DX here is Saturday's mail. Keep it current, to the point, include all pertinent data, type or print neatly, use one side of the paper, don't forget your name and equipment used. See you in two (2) weeks.

SPECIAL

760 KJSL	TX SAN ANTONIO - now Z-Rock format, non-simul with FMer (AB-TX)
1290 KOIL	NE OMAHA - will be going C-Quam sometime early in '89 (per conversation with PD Terry Mason (RD-IA))
1350 WNVA	VA NORTON - was AC, now Sun Talk Network (EM-NC)
1480 WACO	TX WACO - was C&W, now ABC Talknet (AB-TX)
1510 WXLX	NC BLOWING ROCK - per call to Chamber of Commerce, stn is now silent (EM-NC)

UNIDs AND UNIDs TOID

910 UNID	?? - 11/24 0724 fair with promo for Fri nite game (BKB?) between Fairfield (or Fairview) and Newport on <i>The mighty 91</i> ; CLs given sounded like K-A-A-something, but this doesn't match anything in THE Log; HELP! (RD-IA)
930 WTAD	IL QUINCY - 10/22 1858-1930 weak+fair with tape-delayed b'cast of Ill vs Mich State FB; gone suddenly @ 1930; is probably this since WTAD's Oct pattern change is @ 1930; my unID of 10/8 (Issue 7); Thanks Eric B (RD-IA)
1220 WSLM	IN SALEM - this is Dave Braun's unID of 10/22 (Issue 9); I heard this one with IU FB one week later vs Iowa (V58 I8); great catch, Dave (RD-IA)
1450 UNID	?? - 11/10 1717-34 good @ times in WCTC null with Stardust Radio slogans, tunes such as <i>Georgia On My Mind</i> by Ray Charles & <i>Put Your Head on My Shoulder</i> by Paul Anka; local ads & female with local nx; WPAM? (BH-NJ)
1490 UNID	?? - 11/28 2038-50 good in mess (obviously) with Ark State Univ BKB; this shouldn't be too hard to ID, division I-AA schools generally don't have very big radio nets (RD-IA)

MINIGHT TO MIDDAY

590 WKHX	GA ATLANTA - 12/1 0108 Atlanta's Country Leader, Kicks; don't laugh, it's the 1st time the old WPLO made it in here (RJT-NC)
850 WEAT	FL WEST PALM BEACH - 12/4 0200 amongst the mess with many ments & ads for West Palm Beach area; also on frequency an FM 103? simulcast; unsure who that is, but no doubt WEAT (GM-CT)
870 KAAN	MO BETHANY - 11/25 0730 fair under WKAR with sign-on (RK-IL)
1030 WBZE	MD INDIAN HEAD - 11/22 0848 good with sign-on (RK-IL)
1100 WSGI	TN SPRINGFIELD - 11/22 0801 good with sign-on (RK-IL)
1110 WKEG	PA WASHINGTON - 11/25 0700 fair+good with sign-on (RK-IL)
1210 WILY	IL CENTRALIA - 11/22 0701 fair with sign-on (RK-IL)
KOKK	SD HURON - 11/22 0735 fair with vocal SSB, sign-on by female (RK-IL)
1220 WFKN	KY FRANKLIN - 11/23 0700 fair with sign-on (RK-IL)
1230 WCMC	NJ WILDWOOD - 11/10 0718 ID noted during local ncast; 1st-timer; long-sought (BH-NJ)
1270 KESS	TX FT WORTH - 11/28 0300 all alone, dominating 1270 in SS; legal ID in EE @ 0300; KESS, Dallas (RJT-NC)
1280 WQUE	LA NEW ORLEANS - 11/28 0217 with UC format, many IDs such as Q93; over/under WGBF (RJT-NC)
1320 WDER	NH DERRY - 11/25 0835-44 good with ContChr mx, promo for <i>Focus on the Family</i> , slogan: <i>Sound of the new life for Southern New Hampshire</i> (BH-NJ)
WGET	PA GETTYBURG - 11/25 0820-24 poor with local nx, men's store ad, Accu-Weather (BH-NJ)

1450 KFIZ WI FOND DU LAC - 11/30 0725 fair with ID & road conditions around Wis; don't see this one reported too often (RD-IA) (Maybe this will start a trend, hi-WRH)

1480 KDWA MN HASTINGS - 11/30 0700 very good with sign-on & wx (RD-IA)

WTMB WI TOMAH - 11/30 0701 good with sign-on (RD-IA) (These are correct CLs, Rick-WRH)

1480 WCNS PA LATROBE - 11/10 0857 CLs noted thru mess (BH-NJ)

WCFR VT SPRINGFIELD - 11/10 0855 annct for a play at area HS. 93.5 FM ment>AC; no CLs heard (BH-NJ)

1490 WFAD VT MIDDLEBURY - 12/5 0500 sign-on with clear IDs & antenna location & ments of Champlain Valley; dominant for 15 minutes; VT rare here, this never hrd in 20 years! (GM-CT)

1500 KDFN MO DONIPHAN - 12/3 0724 EZL mx (instrumentals) & K-F-D-N SID (KVJ-GA)

1510 WLAC TN NASHVILLE - 11/11 0820-38 atop nicely with farm report, female with local nx, local ads (BH-NJ)

CKOT ON TILLONSBURG - 11/25 0717 XLNT with sign-on (RK-IL)

1520 WRSL KY SANFORD - 11/22 0715 poor with sign-on (RK-IL)

1530 WASC SC SPARTANBURG - 12/1 0755 with local nx & full ID; over/under WCKY (EM-NC)

1550 WLWX CT BLOOMFIELD - 11/19 0630 poor with ID+canned REL (BH-NJ)

1580 WEAM GA COLUMBUS - 11/22 0552 fair with sign-on (RK-IL)

WEDDAY TO MIDNIGHT

540 WGTO FL CYPRESS GARDENS - 11/27 1702 hrd broadcasting in a strange language, perhaps slovic? (RJT-NC)

550 WGR NY BUFFALO - 11/28 1829 nice surprise with Pro FB preview show & promo for Bills/Bengals game (KVJ-GA)

CHLN PQ TROIS-RIVIERES - 11/23 2203 fair with FF ID & ment of Trois-Rivières (MS-ON)

560 WIND IL CHICAGO - 11/22 1857 fair in SS with mx, talk by female; finally caught an ID jx @ 2200 (MS-ON)

WHND MI MONROE - 11/22 1900 poor under WIND with sign-off anncts; seemed rather late for a Mich daytimer to be signing off (MS-ON) (Maybe they stay on for PM drive on their 27 watt PSSA, then call it quits?-WRH)

590 CKRS PQ JONQUIERE - 11/21 1955 poor in CKEY null with FF talk, commentary on Canadian Federal Election, partial ID @ 2000 (MS-ON)

600 WMT IA CEDAR RAPIDS - 11/23 2008 fair with Midwestern U.S. wx, TV Guide ad, detailed forecast for Cedar Rapids area, ment of Channel 7 wx office, TC for 7:13, ID (MS-ON)

610 WIOD FL MIAMI - 11/30 2025 with Rick Weaver Dolphin FB sports-talk show promo; ID (EM-NC)

630 CHLT PQ SHERBROOKE - 11/24 1705 fair in FF with sps report, ads, Quebecois pop mx, Le Reseau Telemedia (MS-ON)

640 WJTZ TN BLOUNTVILLE - 11/30 1815 all alone with ID, Solid Gold Scrapbook with Norm N. Nite (BS-NJ)

680 WPTF NC RALEIGH - 11/23 2018 poor with CFTR partially nulled; spstalk, wx @ 2019 WPTF Staff Meteorologist (MS-ON)

730 WFMC NC GOLDSBORO - 11/30 2146 with Carefree Housing ad, with locations in Goldsboro & Greenville; ID; on 90 watt PSSA (EM-NC)

WPIT PA PITTSBURGH - 11/22 1857 good with Bible Association message, promo for Back to the Bible on 73 WPIT (MS-ON)

WPAL SC CHARLESTON - 11/29 1804 with ID, UC format (KVJ-GA)

740 KRMG OK TULSA - 11/29 1811 5:00 Report on 74-KRMG, female annct, Chopper 74 traffic report (KVJ-GA)

750 WNDZ IN PORTAGE - 12/1 1824 fair with traffic ✓ sponsored by Chicago Sun Times>PSA (included 219 phone #, which is WNDZ's AC)>mx; IN #7 (RD-IA)

810 CJVA NB CARAQUET - 11/23 2000 poor with WGY partially nulled, instrumental mx, partial ID with mention of Caraquet, nx in FF with ment of Liberal Party leader John Turner (MS-ON)

820 WXEZ IL CHICAGO - 11/30 1830 with beautiful mx, all alone on channel; strange! (BS-NJ)

850 KFUD MO CLAYTON - 11/24 1830 with lo-o-ong sign-off, mention of Lutheran station (EM-NC)

KFUD MO CLAYTON - 11/30 1819 REL, ID, ment of St Louis metro area (BS-NJ)

900 WFRD OH FREMONT - 11/23 2100-03 fair with nx & wx>ID; mx by Paul McCartney; no sign of CHML (RD-IA)=

910 WJCW TN JOHNSON CITY - 11/30 1825 with ID, CBS Sps, ment of 50 years on the air (BS-NJ)

990 WHOO FL ORLANDO - 11/27 1828 in-progress Miami Dolphins FB on Miami Dolphins Radio NET; way above WIVK-TN (RJT-NC)

WABO MS WAYNESBORO - 12/3 1801 caught tail-end of sign-off; good signal (KVJ-GA)

1020 WCIL IL CARBONDALE - 11/30 1748 good with Burning Love by Elvis>sign-off with invite to send their comments & questions about prgmmg to AM 10-20, followed by stn address (RD-IA)

1030 WBZE MD INDIAN HEAD - 11/22 1834 fair in WBZ null with GOS mx, CLs mentioned in promo (MS-ON)

1040 WSKE PA EVERETT - 11/22 1828 fair; mx by male vocalist, ID>radio classified-type program (MS-ON)

CHRS PQ ST JEAN - 11/20 1859 fair in FF with upbeat mx, local ad, partial ID, mention of Longueuil (MS-ON)

CHRS PQ ST JEAN - 12/9 1845 fadey with FF talk by two female (possibly teletalk); only FFie on 1040 in log (WRH-NY)

1080 KFIL MN PRESTON - 11/29 1724 fair with TC:It's 4:24 here in Southeast Minnesota...right now, light flurries in the area>mx by Sweethearts of the Rodeo (RD-IA)

1070 WIBC IN INDIANAPOLIS - 11/23 1703 good with nx, mentions of Marion County & WIBC News (MS-ON)

1080 WEEP PA PITTSBURGH - 11/20 1834 good in WTIC null with OLD It's My Party by Leslie Gore, ID 1080 WEEP (MS-ON)

KRLD TX DALLAS - 11/21 1815 with ID nx; even signal with WTIC (BS-NJ)

1090 WMYD WI RICE LAKE - 11/22 1825 good with OLD & ID (RK-IL)

1120 WKQW PA OIL CITY - 11/20 1800 fair with ID Your Favorite Station WKQW, Oil City?? (missed name of 2nd city)>news (MS-ON)

1150 CKOC ON HAMILTON - 11/22 1815 CHR format and non-stop hits on K-O-C (KVJ-GA)

CJRC ON OTTAWA - 11/25 2105 good, creaming usually dominant CKOC in FF, with promo for contest sponsored by Humpty Dumpty Potato Chips, ID (MS-ON)

1180 KSL UT SALT LAKE CITY - 12/3 2232 rare appearance with BYU-Miami FB game, promo for BYU FB on 1180-KSL; this one has not been heard in several years, so a pleasant surprise (KVJ-GVA)

1180 WHJM TN KNOXVILLE - 11/30 1545 with AC from the satellite, local ads; good signal (EM-NC)

1200 WBCE KY WICKLIFFE - 11/23 1728 Christian format, plea for a thanksgiving offering of \$20 for station (KVJ-GA)

1270 WXYT MI DETROIT - 11/30 2100 with talk pgm promo, ID, news; much-needed (EM-NC)

WTSN NH DOVER - 11/20 1805 fair with HS sports, TSN Wx mentioning 44', moderate rain at WTSN (MS-ON)

WCGC NC BELMONT-CHARLOTTE - 11/30 1830 with local Christmas parade coverage (EM-NC)

1280 WGBF IN EVANSVILLE-HENDERSON - 11/30 1700 with WGBF AM & FM ID>FM stn (EM-NC)

1290 WJJJ VA CHRISTIANSBURG - 11/22 1705 mentions of Radford & Blacksburg (BS-NJ)

1300 WFBR MD BALTIMORE - 11/28 1800 fair with Rolling on the River by CCR, ID:>WFBR Baltimore, nx-special pgm or format change from NWS/TLK listed in Logbook (MS-ON)

1310 WNAE PA WARREN - 11/28 1858 good with ad for Warren Cable, phone 723-7900; FB score, ID, This is WNAE, Warren; UPI Nx (MS-ON)

WIBA WI MADISON - 11/22 1852 fair with local ad, ID, Madison wx (MS-ON)

1320 WATR CT WATERBURY - 11/20 1854 fair with local ad, wx (MS-ON)

1330 WHBL WI SHEBOYGAN - 11/24 1859 poor with ad for Hometown Furniture of Sheboygan, other local ads; heavy QRM from WRIE (MS-ON)

1350 WSHB LA NEW ORLEANS - 11/29 1823-27 good with financial nx>traffic/ on The New WSHB; wonder what they were B4, hi (RD-IA)

WRAP VA PORTSMOUTH - 11/15 1758 with Black mx, ex:WNIS (BS-NJ)

1370 KAPB LA MARKSVILLE - 12/4 2301 fair with late ending of Dick Clark's, Rock, Roll & Remember>ID:1370 KAPB Marksville (RD-IA)

WPAZ PA POTTSTOWN - 11/21 1701-10 ID for Hits of Your Life stn, local nx; atop frequency (TF-CT)

1380 WPHM MI PORT HURON - 11/25 1959 fair with talk show>WPHM News Headlines mentioning Bluewater Country & 44' in Port Huron, TC:It's 8 O'Clock, ABC Nx is up next (MS-ON)

1390 WLAN PA LANCASTER - 12/3 1720 with OLD ROK; mixing with WMZQ/others; not heard here for a while (TF-CT)

1420 WQBC MS VICKSBURG - 11/16 2358 sign-off mentg 1 Kw days & 500 watts nites, ending with SSB (KVJ-GA)

1430 WIRE IN INDIANAPOLIS - 11/12 1800 fair with Mich State vs Ind FB; pause on the IU FB Network for stn ID:AM1430 WIRE (RD-IA)

1440 WLXN NC LEXINGTON - 11/15 1700 legal ID heard (BS-NJ)

1450 KMRY IA CEDAR RAPIDS - 11/24 2354 good with ID, MoLl-type mx (RK-IL)

1470 WSBY MD SALISBURY - 11/21 1858-1710 with ROK mx, CBS Nx (TF-CT)

WQXL SC COLUMBIA - 12/4 1722 hrd with C&W mx & ID; fair (HJH-PA)

WTZE VA TAZEWELL - 12/4 1718 XLNT signal with sign-off; had C&W mx; mentd 5 Kw power, no SSB (HJH-PA)

1480 WCFR VT SPRINGFIELD - 11/21 1850-1700 with C&W mx, ID; gone @ 1858; atop frequency (TF-CT)
 1500 KSTP MN ST PAUL - 11/21 1825 ID, ad for snowplows (BS-NJ)
 1510 WWHN IL JOLIET - 11/22 1730 over/under WLAC with Yesterday by The Beatles+short sign-off (RD-IA)
 WWHN IL JOLIET - 11/27 1728 poor with sign-off (RK-IL)
 1520 KOLM MN ROCHESTER - 11/20 1842-48 very good under KOMA with ID:Your Oldies Channel is AM 1520, KOLM+mx from 3 Dog Night & Peter, Paul & Mary (RD-IA)
 1530 KLRA AR ENGLAND - 12/4 1738 bluegrass mx, The All-New KLRA (KVJ-GA)
 KQNK KS NORTON - 11/29 1829-30 way under WCKY with I Get Around by The Beach Boys+sign-off FM 106.7 KNTX invite (RD-IA)
 1550 KKJO MO ST JOSEPH - 12/1 1800 with full ID, ABC-I Nx; good (EM-NC)
 1560 WSQR IL SYCAMORE - 11/27 1729 poor with sign-off (RK-IL)
 1570 WPPE MA TAUNTON - 12/3 1822 with Police report; lost by 1825 to the mess (TF-CT)
 CKLM PQ MONTREAL - 11/20 1823 fair in FF with local ads including one for a Montreal restaurant; unusual to be able to null local CFOR enough to get anything else on 1570 @ this time (MS-ON)
 1580 WPNO MS PASCAGOULA-MOSS POINT - 12/1 1812 C&W mx, K-99 FM, Your New Country Connection; ads for Kroger & Sears; did not hear AM CIs mentd (KVJ-GA)
 WPNO MS PASCAGOULA-MOSS POINT - 12/4 1838 no-call ID heard, many ments of K-99 FM & ads for outlets in Pascagoula & Moorehead; C&W mx noted & came up quite clearly @ times with little competition on the channel tonight (HJH-PA)
 1580 KYDE AR PINE BLUFF - 12/1 1815 UC format, ID:AM-1590, KYDE, Pine Bluff-Little Rock (KVJ-GA)
 WGGO NY SALAMANCA - 11/10 1847-1700 fair with ROK OLD, local ads, full-data sign-off with Goodnight, Sweetheart, Goodnight (BH-NJ)
 1800 WEUP AL HUNTSVILLE - 11/30 1828 with Magic 16 Jackpot promo, phone # 837-1800; called stn! (EM-NC)
 WTZQ NC HENDERSONVILLE - 11/21 1716 EZL mx, ads; sign-off @ 1730 (TF-CT)
 WJQI VA CHESAPEAKE - 11/10 1545-1804 XLNT in WWRL null with AC mx, local ads, traffic report, Joy 95 slogan; AM-FM ID @ :00 (BH-NJ)
 WKKG VA SALTVILLE - 12/4 1705 clear with wx report 8 AM-16 WKKG ID; had C&W mx (HJH-PA)

13 Lucky REPORTERS for Lucky Issue 13:

RK-IL Robert Krazer//Chicago, IL//R-1000, HQ-129X + RW Loop, Kowalski Loop
 BS-NJ Bob Smolarek//Whitehouse Jct, NJ//R2000 + Kowalski Loop
 BH-NJ Bob Harrison//Union, NJ//GE Superadio
 MS-ON Morris Sorensen//Port Carling, ON//HQ-150 + SM-2
 RJT-NC Robert Tiara//Hendersonville, NC//R-5000 + many LWS + 24" Amplified Ferrite Loop
 EM-NC Ed Mitkus//Zionville, NC//CFS-W501 + Longwire
 TF-CT Tony Fitzherbert//Fairfield, CT//Superadio
 KVJ-GA Karl Jeter//Stone Mountain, GA//HQ150, R390A + assorted beverages, uncanceled stamp
 HJH-PA Harry Hayes//Wilkes-Barre, PA//Superadio + SM-2
 GM-CT Gary Mitchell//Fairfield, CT//Sanyo RP8280A portable
 AB-TX Artie Bigley//San Antonio, TX//FRG-7700
 RD-IA Rick Dau//Oakland, IA//
 WRH-NY Bill Hale//Johnson City, NY//Delco ETR

Need to renew? Expired? The mailing label will tell you.

73, Bill

CITY QUIZ

John S. Bowker, Valparaiso, IN

QUIZ # 16

Only one city in the United States has stations operating at the five dial positions shown below. Of course, there may be other stations in this city too! Can you spot the city?

560 710 940 1140 1450

Here is a hint; it is one of these: Miami, Shreveport, New York City (The answer will appear at the end of the next City Quiz in DX News.) The answer to City Quiz #15: Los Angeles

DOMESTIC DX DIGEST - WEST

Nancy Hardy

2301 Pacific Avenue, Aberdeen, WA 98520

Time for another DDXD-West!

SPECIAL

1010 KPSS CA THOUSAND PALMS - MM 12/5 0230-0259 new station on, apparently on RS already. Non-stop classical music 0230-0257, then slogan/ID: "We're the all new classical KPSS, bringing the classics to all of Palm Springs." Asked for suggestions on what kind of programming listeners would like to hear. Gave a Palm Springs mailing address, but signal was surprisingly weak & I couldn't copy it. S/off anncts at 0259 said they'd return at 0900. New, CA #206. (TRH-CA)
 1080 KLRS CA SANTA CRUZ - MM 12/5 0330 poor, but steady with male annrc. telling of new FM-AM simulcast. Music resembled new age format. "Colors" slogan noted also. Ex-KSC0. (TRH-CA)
 1530 KSHY WY FOX FARM - 11/28 1946 under WCKY. Log shows D1? WY #13. (DA) (AM Switch 8/15 lists 10,000/1000 U4, ex-1370 Cheyenne.--NH)

DX TEST

1010 WPK AL DORA - MM 12/5 0230-0300 not a trace of the DX test. Really thought the code IDs would have been able to cut through on this channel. (TRH-CA) Test not heard 0230-0300. (JW-CO)

MIDDAY TO MIDNIGHT

540 KVIP CA REDDING - 11/25 1857 fair with spot for church service, ID, into relig. program. (JW-OR)
 560 KPQ WA WENATCHEE - 11/25 1853 fair with local spots, ID, C&W. (JW)
 900 WPROT OH FREMONT - 11/29 2115 briefly on top, woman gave "weather in downtown Fremont." No ID. Any other possibilities? (DA-CO)
 930 KSEI ID POCATELLO - 12/2 2005 good signal. Mutual News, Idaho news, ID. (JW-OR)
 940 KVSH NE VALENTINE - 11/29 1409 "KVSH state and local news." (DA-CO)
 970 KJLT NE NORTH PLATTE - 11/29 1905 o/u KNUU, INS news to local news, NE #17. (DA-CO)
 980 KCRM SK REGINA - 11/29 in all day on NE Beverage! (DA-CO)
 1080 KGVY AZ GREEN VALLEY - 11/29 1857 "Bongo, Bongo, Bongo, I Don't Want to Leave the Congo, 1947" & other BBD from another era! (DA)
 KVNI ID COEUR D'ALENE - 11/29 1848 "stay tuned to KVNI" o/KRLD then gone. ID #8. (DA-CO)
 1090 KBOZ MT BOZEMAN - 11/27 2000-2005 poor-fair with NBC News, local weather, ID "and now back to another hour of America's best music on 10-90 KBOZ." New, MT #9. Local XEPRS has been having troubles with their signal lately, and has been taking SP's at all sorts of odd times. (TRH-CA)
 1130 W???? TN MEMPHIS - 11/29 2110 Was I hearing things? (DA-CO)
 1190 KEX OR PORTLAND - 11/29 2239 "Welcome to sportsline on KEX," fair under KJLA most of evening. State #35, completes states west of MS. (DA-CO)
 1200 KFNW ND WEST FARGO - 11/29 1400 Christmas music to ID at noon! (DA)
 1220 KJAN IA ATLANTIC - 11/29 2228 Hawkeye BKB, local spots including Macintyre Tire Co. 80 watts topping freq. IA #16. (DA-CO)
 1230 KKFN SD SIOUX FALLS - 11/29 1620 "KKF Sports" spot on local HS BKB. My best CY DX at 532 miles. SD #17. (DA-CO)
 1260 KROX MN CROOKSTON - 11/29 2252 Crookston mayor interviewed, local news. Perhaps all news station? MN #10. (DA-CO)
 1270 KDJI AZ HOLBROOK - 11/29 2100 high school football, local spots, o/u WKBF, AZ #18. (DA-CO)
 1280 WMRO IL AURORA - 11/29 2400 ID to Mutual News. IL #11. (DA-CO)
 1330 KWKW CA LOS ANGELES - 11/28 2300 under both KWLO & KPH which ID'd as "KXK 105"; "So. California's classical music station." (DA) (I thought they weren't supposed to change from KFAC until they change format to Spanish.--NH)
 1410 KFMS NV NORTH LAS VEGAS - 11/28 2118 ID "KFM 102 & K410 KFM." (DA)
 1420 KJCK KS JUNCTION CITY - 12/3 1845 pre-game show, Hutchinson vs J.C. BKB; many local spots. Fair with QRM on car radio. (JW)
 1440 KVON CA NAPA - 12/1 2015 fair-good with ID, high school sports news. (JW-OR)
 1450 KDMN CO BUENA VISTA - 11/28 1400 first time! ID as "Buena Vista-Salida." CO #65. (DA-CO)

1450 KBFS SD BELLE FOURCHE - 11/28 1509 local & Rapid City spots, many IDs. SD #15. (DA-CO)
 KYNT SD YANKTON - 11/28 2048-2105 many local spots, promo for 60's program, Mutual News, local weather. SD #16. (DA-CO)
 1460 KENO NV LAS VEGAS - 11/28 2040 under R. Sensasion. Weather in Las Vegas valley. NV #9. (DA-CO)
 1540 KNGL KS MCPHERSON - 11/28 1540 State Bank of Canton & McPherson spots. KS #31. (DA-CO)
 1560 KPMC CA BAKERSFIELD - 11/28 2100 ID to CBS Monday Night Football. (DA)
 1570 KPRC CA RIVERSIDE - 11/28 1600 relig. to ID & Mutual News. (DA-CO)
 1600 KYRD AZ COTTONWOOD - 11/28 1930 s/off with SSB. AZ #16. (DA-CO)

MIDNIGHT TO MIDDAY

610 KVNU UT LOGAN - 11/29 1006 "KVNU Community Events," o/u KSPN. (DA-CO)
 620 KCLQ CA HANFORD - Tu 12/6 0629 still using these calls, but was relaying KUZZ-550 Bakersfield! Every few minutes a man would come on & give a bilingual KCLQ ID on top of the KUZZ feed. Strange! (TRH-CA)
 650 KYAK AK ANCHORAGE - 11/21 0148 DJ on "6-50 KYAK" running phone-in record poll. C&W currents & oldies. Slogan 0200 "Alaska's only #1 country music station" and SID. Fair, o/unID (CISL?). (5P-HI2)
 CKOM SK SASKATOON - 11/28 0715 fair with CISL nulled. ID, C&W. Slogan "Super station CKOM." (JW-OR)
 720 KUAI HI ELELE - 11/14 0959 s/on with GM Bill Dahle over military band playing "Hawai'i Pono'i" (the ex-natl. anthem), Mutual News. Good. (5P-HI)
 760 KFMB CA SAN DIEGO - MM 11/14 0706 totally off (they were on earlier at 0340). Nothing noted, except new mega-pest XENY (ex-1270). (TRH-CA)
 930 KRTH CA LOS ANGELES - MM 12/5 0310 LOUD TTs, but off later. This was an excellent night for S. Calif. DXers -- see 1070/1090/1110/1130 below! (TRH-CA)
 UNID ?? ??? - MM 11/14 0325, MM 12/5 0407 unID Talknet station with Harvey Rubin. Nov. Talknet list only shows three affiliates, all east of the Mississippi. Station looped E or NE. Has KAFF or KSEI added Talknet? (TRH-CA)
 1000 KOMO WA SEATTLE - 11/13 0338 noted with OC. Nothing noted under. (TRH)
 1020 KCKN NM ROSWELL - Tu 12/6 0503 loud TTs, then off at times. Could hear traces of what I thought were unneeded KWIQ & much-needed KDKA. Returned to reg. programming by the end of the hour. (TRH-CA)
 1070 KNX CA LOS ANGELES - MM 12/5 OC most of the night, but off at times leaving pest XEOBS & needed CFAX. Can't remember the last time I caught this station off. XEPRS-1090, KRJA-1110 and KSDO-1130 were also off!! Too bad the DX conditions were poor tonight. (TRH-CA)
 CFAX BC VICTORIA - MM 12/5 0416-0425 fair with KNX off, poor under KNX OC. AdCon music, female annrc. with C-Fax weather for Vancouver Island. New, BC #16. Knew I'd get 'em if KNX ever went off! (TRH-CA)
 1080 KWAI HI HONOLULU - 11/7 0559 ID, then abruptly off. I found out that KSSK-590 CE had to work on his stations xmtr, necessitating the shutdown for an hour of several other stations sharing the tower, including KWAI. (5P-HI)
 1100 KFAX CA SAN FRANCISCO - 11/21 0228 PSA, ad for Christian Counseling Centers, station promo, ID "No. California's Leader, KFAX San Francisco-Oakland-San Jose." Into EZL Christian music show. Fair to poor, o/unID, KWAI-1080 splatter. (5P-HI2)
 1110 KRLA CA PASADENA - MM 12/5 0318 totally off at first, but had a few TT's and IDs later in the morning. Fairly rare SP leaving strong KFAB/KRCX and poor-fair KBND. (TRH-CA)
 KRCX CA ROSEVILLE - MM 12/5 0320 best signal ever with female SS annrc. "Radio Capital" slogan, lots of IDs "Kah-ereh-ceh-equis." Promo for 12 days of Christmas special programming. (TRH-CA)
 KHEI HI KIHEI - 12/1 still off the air, was supposed to return 11/29 under new ownership. (5P-HI)
 KBND OR BEND - MM 12/5 0317-0406 generally poor but faded up at times. Best of King, network ads, ID & Mutual News on the hour. New, OR #19. (TRH-CA)
 1200 CHMG AB ST. ALBERT - Per letter from Paul Preston, Promotions Mgr., CKST will move to 1200 with new calls "by January 1, 1989 at the latest." Will be 25kw, "processing AM Digital Stereo."

CHMG cont'd 25kw on 1070 would have interfered with CKSA-1080, hence the move to 1200 was necessitated. They will use the slogan "MG 1200 - Classic Gold Music." (5W-CO)
 1220 UNID ?? ??? - 11/29 0802 with spot for Roberta's Hallmark in College Park, talk about the city Christmas tree at the corner of Dallas & York Streets. Ruined at 0804 by s/on of local KBNO. Any ideas? Fair signal. (5W-CO)
 1230 KFUN NM LAS VEGAS - 11/28 0808 pop music, weather, local spots; 0830 Paul Harvey. Fair over QRM. (5W-CO)
 KVOC WY CASPER - 11/29 0900 ABC-I news followed by area news, ad for local car dealer. Fair o/u QRM. New, WY #27. (5W-CO)
 1240 KELK NV ELKO - 11/28 0858 local PSA's, ad for local performance of "The Nutcracker." ABC-I news, I think, at 0900. A 3-minute log with QRM. New, NV #12. (5W-CO)
 1290 KMEN CA SAN BERNARDINO - 10/10 0618 Black oldies music via satellite, ID "The Heart & Soul of the Inland Empire, KMEN." SMN format // KSMJ-1380. Fair. (5P-HI1)
 1320 KEMX UT SALT LAKE CITY - 11/24 0600 Fair-good with slogan-ID "The music you know and the information you need...KEMX Salt Lake City, the all new 13-20." Ex-KCPX/KBUG/KCPX/KBUG/KCPX, hi. (TRH-CA)
 1340 UNID ?? ??? - 10/10 0620 "Best of King" with guest Marlene Saunders. Probably KATA-CA or KLOO-OR per LKS list in IRCA. Poor, some KFAC-1330 QRM. (5P-HI1) (Also listed: KMAK-CA, KLKI-WA--NH)
 1530 KFBK CA SACRAMENTO - 11/21 0057 Bruce Williams on Talknet, then Bruce doing ad for local probate lawyers with 916 area code. ID "This is KFBK Sacramento, where you hear the news, first," NBC News. Fair, KISA-1540 splatter. (5P-HI1)
 KCLR TX RALLS - 11/29 0701 EE/SS s/on annct. by woman. IDs as "K-C-L-R Ralls-Lubbock." Good signal. (5W-CO)
 1610 TIS OR CRATER LAKE NAT. PARK - 11/28 0614 fair with status of roads and tourist facilities (mostly closed for the winter). (JW-OR)

REPORTERS

DA-CO/Doug Allen, Woodland Park, CO/TS 430-S, 160 meter dipole, and 1000' NE-SW & 600' SE-NW Beverages
 TRH-CA/Tim Hall, Chula Vista, CA/ICF-2010, Radio West loop
 5P-HI/Dale Park, Honolulu, HI/Sangean AT5-803
 5P-HI/Dale Park, DXing in Kane'ohe, HI/Delco car radio
 5P-HI/Dale Park, DXing in Ka'a'awa, HI/ATS-803, Select-A-Tenna
 5W-CO/John Wilkins, Wheat Ridge, CO/R-1000, R-390A, 2 1/2-foot loop
 JW-OR/Jack Woods, Waldport, OR/ICF-2010, Martens loop

No miracles for black owners of KJMM

By Roderick Gary

The Arizona Daily Star
The owners of station KJMM-AM radio "didn't expect miracles."

And they didn't get any. KJMM, one of two minority-owned radio stations in Tucson, officially went on the air Aug. 1, 1987.

Last month, the station went off the air after failing to reach a new lease agreement with CIMA Partners, owners of the North Swan Road property from where the station operated.

For now, the station has permission from the Federal Communications Commission to be off the air for 30 days without fear of losing its license.

It must file a written request with the FCC in order to be stay silent for 180 days more.

The station is trying to lease lower space on Pima County's old dump

site at Ina Road. KJMM has three operating general partners — Phyllis Ehlinger, Bob Elliott and Bill Phelps — and the latter two are black. The majority of the station's 18 limited partners are also black.

But Elliott said he and the other partners did not feel their being black demanded that they play "urban contemporary" music.

"The misconception is that a black station would have to have a black, R&B, soul — whatever you want to call it — format," said Elliott, KJMM's business manager.

Instead, the station chose to go with a totally new format, "new age," geared to adults in the 25-to-54 age group, and consisting mostly of an instrumental mix of jazz and classical music.

"We didn't want people to assume things," said Ehlinger, KJMM's sta-

tion manager. "Just because of this it's got to be that. There's no creativity in that. There's no growth in that."

So far there's been no profit. While they're hesitant to divulge figures, all of the partners admit they have steadily lost money.

"We're still losing money, we're not ashamed to say that," said Ehlinger. "We're a start-up station, and it takes awhile. It's a new product and we didn't expect miracles. We've all been in broadcasting long enough to know that miracles never happen."

Elliott said the group is prepared to operate up to five years at a loss before any panic sets in.

"We figure it will take five years to hit the 12-minute mark," Elliott said, referring to the number of commercial minutes per hour he would like to see the station have.

The Arizona Daily Star, via Barry S. Finkel

NRC AM Radio Log

The most up-to-date listing of domestic MW stations available, anywhere! 200 pages, three-hole punched, \$12.95 each, to U. S. NRC members; \$13.95 Canadian NRC members; others write. Send orders to Publications Center

FORMATS

Tony Fitzherbert

356 Jackman Avenue, Fairfield, CT 06430

Yep! It was bound to happen. In November, WACT - 1420, in Tuscaloosa, went to an all Christmas music format. They will return to their country format after the holidays, according to the M Street Journal, one of our contributors for this edition of Formats.

BRN Business news is being picked up by more stations as they make business gambles! And motivational talk continues to be a format - amazing how some people need a radio format to get them turned on.

Eric Bueneman (E) is one of our contributors this issue. Eric, late of Georgia, with three friends is endeavoring to buy KXEN-1010, in St. Louis...he is looking for investors....good luck, Eric!!! Other contributors are Mark Strickert (S), of Chicago, Al Holtz, of Conrail, in Philly, and WTSJ-1050 operations manager Chris Roberts. And ye editor updates Indianapolis radio after spending a week there at a conference. Stay tuned for profiles. Here we go...

540	WSTG	GA	Columbus	- Ex-WDAK, now CWM // FM (M).
550	KOY	AZ	Phoenix	- Adult standards, talk (M).
550	KUZZ	CA	Bakersfield	- CWM//FM (S).
550	WKHO	NC	Pinehurst	- CWM (M).
570	WAAX	AL	Gadsen	- CWM (E).
600	WCVP	NC	Murphy	- AC (E).
630	WAVU	AL	Albertsville	- CWM (E).
680	WCNN	GA	North Atlanta	- "All news 680-AM", NBC feed. (E).
700	KSEV	TX	Tumball	- To be business news and sports.
710	KBPI	CO	Denver	- Metal rock nights (M).
710	WROM	GA	Rome	- Variety (E).
720	WMXY	GA	Hogansville/LaGrange	- Transtar rock oldies (E).
760	WKNL	TN	Knoxville	- New, to be non commercial religion. (M).
770	WVNN	AL	Athens	- Ex-WJMW, now all news "Valley News network" (E).
780	WZZX	AL	Lineville	- CWM//WASZ (M).
780	WLRM	MS	Ridgeland	- 4th station in the US to go to motivational talk (M).
790	WTSK	AL	Tuscaloosa	- R & B oldies (M).
810	WGRT	IN	Indianapolis	- Black, gospel, lots of congregation noises and "Amens", rooftop antenna, I believe (TF).
820	KCFB	AK	Fairbanks	- Now PM Breeze, new age(M). Was BBD/EZL when I was there in 1964-65, and on 900 khz. (TF).
830	WRFM	FL	Hialeah	- New station, Spanish (M).
840	KIKM	TX	Pharr	- New, CWM (M).
850	WYDE	AL	Birmingham	- Southern gospel, "Wide 85" (E).
850	WUTK	TN	Knoxville	- University of Tenn., Knoxville Campus, news and information (M).
900	WTJH	GA	Calhoun	- CWM (E).
900	WVNO	WI	Wisconsin Dells	- CHR//FM (M).
910	KBLN	TX	Sherman	- Ex-KIKM, now Spanish (M).
910	WRNL	VA	Richmond	- Rock oldies, L. King (E).
950	WXLW	IN	Indianapolis	- All paid religion, "All sold out" according to the GM, hours 0600-2200 (TF).
960	WKVX	OH	Wooster	- SMN oldies (M).
970	KOOK	CA	Modesto	- Satellite fed oldies (S).
990	WEIS	AL	Centre	- CWM (E).
990	KBBQ	CA	Santa Barbara	- CWM (M).
990	WANT	VA	Richmond	- Black AC (E).
1030	WNVN	IL	Vernon Hills	- Drops news and talk for BRN Business news.
1060	WKNG	GA	Tallapoosa	- CWM "Country King" (E).
1070	WLBC	IN	Indianapolis	- Full service AC, News, NBC feed, "Radio Indiana" lots of sports, Talknet at night. (TF).
1080	KLRS	CA	Santa Cruz	- New age // FM (M).
1100	WLBB	GA	Carrollton	- CWM (E).

1110	WEBS	GA	Calhoun	- Adult standards, NBC (E).
1110	WMBI	IL	Chicago	- English religion, with SOME Spanish (S).
1110	WYIC	IN	Noblesville	- "Your Indy Connection", UPI, Sun, some soft AC, local sports (TF).
1140	WIXC	AL	Hazel Green	- Rock oldies (E).
1170	KLOK	CA	San Jose	- Spanish AC/News, with "Tick Tock" sound effects during AM drive (S).
1180	WSAF	GA	Trion	- SMN Rock oldies (E).
1220	WPLK	GA	Rockmart	- AC, NBC net(E).
1230	KRDR	OR	Gresham	- Returns to air with PM Breeze, new age(M).
1240	KZID	ID	McCall	- Silent (M).
1260	WNDE	IN	Indianapolis	- Rock oldies "Classics", Mutual News, L. King, and other talk at night (TF).
1270	WYXC	GA	Cartersville	- CWM (E).
1270	KPLY	NV	Sparks	- Locally live assist oldies (S).
1290	WFBG	PA	Altoona	- Now AC (M).
1290	WQIN	PA	Lykens	- AC (M).
1310	KFKA	CO	Greeley	- AC (M).
1310	WTUX	IN	Indianapolis	- MYL, CBS "Class of Indianapolis" (TF).
1320	WAGF	AL	Dothan	- Silents (M).
1330	WANI	VA	Richmond	- Silent (M).
1330	WESR	VA	Onley	- Adult standards (M).
1340	KATY	CA	San Luis Obispo	- Reported silent (M).
1360	WSAI	OH	Cincinnati	- Rock oldies, same songs played when WSAI was the Cincy rock station, and #1 on every teenager's radio years ago (Chris Roberts).
1370	KTMG	CO	Deer Trail	- Silent (M).
1380	WQMI	NH	Portsmouth	- Oldies //FM (M).
1380	WTVR	VA	Richmond	- CWM (E).
1390	KDZR	CO	Westminister	- Drops SMN Z-Rock for BRN Business News (M).
1400	KHTX	CA	Truckee	- Silent (S).
1400	WXXX	GA	Alpharetta	- Back on air with Business News (M). Ex-WQRZ, "Money radio" from KMNY - 1600, good idea, as the wealthy suburbs are in North Fulton County (E).
1420	WACT	AL	Tuscaloosa	- All Christmas Music until after 12/25. (M).
1420	WAVO	GA	Decatur	- Now BRN Business news (M). Is directional away from North Fulton County (TF).
1420	WING	OH	Dayton	- Former # 1 rocker in the Dayton market is rock oldies (Chris Roberts).
1430	WIRE	IN	Indianapolis	- CWM, live assist drive times, otherwise Transtar, Interstate Net overnight, NSP, A(i), "You're wired to the World on 1430, WIRE". (TF).
1450	WBHF	GA	Cartersville	- SMN AC (E).
1450	WVON	IL	Cicero	- Black oriented talk ONLY(S).
1460	KDON	CA	Salinas	- CHR//FM (M).
1460	WJYA	GA	Buford	- Light AC, "Joy 1460". (E).
1460	WACO	TX	Waco	- ABC Talk (M).
1470	WMGZ	PA	Farrell	- CHR//FM, sports (M).
1480	KYOS	CA	Merced	- CHR (S).
1480	KPIA	MO	Ironton	- CWM/Farm news (E).
1480	KRXR	ID	Gooding	- Silent (M).
1480	KBEA	KS	Mission	- BRN Business News for Kansas City (M).
1480	WDAS	PA	Philadelphia	- To be gospel/talk, Black-oriented. (Al Holtz, Philadelphia).
1480	KMEZ	TX	Dallas	- EZL (M).
1500	WKRP	GA	Dallas	- Still AC (E).
1500	WBRI	IN	Indianapolis	- Religion, Moody Network feed

And that's it. Thank you, Gentlemen!!! And a blessed holiday season to every one of you, and an equally blessed, and healthy 1989 to all!!!!

735 - Tony Fitz

Dallas Lankford, 903 Sherwood Drive, Ruston, LA 71270, © 1988

These technical notes are a continuation of my "Collins 51J4 Review" which appeared in *DXN* 56, 1 (Oct. 3, 1988). Its purpose is to provide J4 users with technical information which can assist them in overhauling, aligning, and maintaining their J4, and to provide potential J4 owners with additional technical information about the J4.

I was as surprised as Fritz was when our J4 reviews appeared in the same *DXN* issue. I should add that I was also pleased. Two opinions are always better than one, and together we covered the J4 basics thoroughly. I managed to get the audio output impedances wrong (3.2 and 500 ohms). Fritz got them right (4 and 600 ohms).

I don't use my J4 as a backup for a solid state RX as Fritz does because I don't own any solid state communications receivers at present. I have temporarily owned or used some very good solid state RXes, including a SPR-4 with 5-NB noise blanker, and a NRD-515 with Collins mechanical filter mod. But none of them had quite as good weak signal performance as top of the line tube receivers. So it doesn't surprise me that a J4 would outperform an ICOM R-71A in some difficult listening situations as Fritz observed. Fritz mentions that performance figures may prove the R-71A is a better RX than the J4. But performance figures often do not tell the complete story. For example, several years ago as part of their catalog Sherwood Engineering included a large number of laboratory measurements for many top RXes. There it was pointed out that receiver manufacturers typically measure dynamic range with two signals spaced 20 kHz apart. However, in difficult AM listening situations the carriers are much closer together, sometimes as little as 2 kHz apart. So Sherwood Engineering measured dynamic range twice for each receiver, once at 20 kHz and a second time at 2 kHz test signal separations, and called these measurements wide and narrow dynamic ranges. The results were revealing. For a R-390A the wide and narrow dynamic ranges were 81 and 79 db respectively, while for a NRD-515 they were 95 and 77 db respectively. Both a R-70 and a R-71A measured 86 and 62 db respectively. The J4 was not included in Sherwood's list. But in any case, I agree with Fritz that a J4 is generally the equal of any solid state RX, and perhaps slightly superior to any solid state RX for DXing foreign splits. Similar comparisons have been made with other receivers, such as Chuck Hutton's comparison of a Drake R7 and R-390A in *DXN* 47, 1 (Oct. 8, 1979), with similar conclusions.

In my review I mentioned that many J4 users, including me, have complained about insensitivity, especially on band 1, and I described two simple modifications for improving both band 1 and overall sensitivity. The band 1 mod was my own idea, while the R149 mod to improve overall sensitivity was originally suggested by William I. Orr in his February 1978 *Ham Radio* article, "Modifying the Collins 51J receiver for SSB reception." I began to have doubts about these mods several weeks ago when I noticed that both of my J4's had cross modulation from KRUS 1490 on WLAC 1510.

To learn more about the J4 cross modulation problem, I built a hybrid coupler so that I could measure the dynamic ranges of my receivers. The definitive article on measuring dynamic range is Wes Hayward's July 1975 *QST* article, "Defining and measuring dynamic range." The hybrid coupler which I built is described in Hayward's article, except I used an Amidon FT-82-61 ferrite toroid core with 17 bifilar turns to extend the coupler frequency range to include the BCB. One of my R-390A's measured 82 db (which is within 1 db of the value reported by Sherwood), one J4 (with only the R149 mod) measured 72 db and the other (with band 1 mod and R149 mod) measured 67 db, and my HQ-180A (the surprise winner) measured 88 db dynamic range. I used a pair of URM-25D signal generators with test signals at 1200 kHz and 1220 kHz for these measurements. Curiously, I got much lower narrow dynamic range measurements for my R-390A than reported by Sherwood. Perhaps my home made hybrid coupler does not have the high port isolation required for narrow dynamic range measurements.

Next, I removed the band 1 mod from one J4 (the other J4 did not have the band 1 mod) and restored R149 to the original 680 ohm half watt resistor in both J4's. The measured resistances of the resistors I used were 705 and 715 ohms, and the measured AGC bias was about -1.80 VDC in both cases. After *carefully* realigning band 1 of the J4 which had previously been insensitive on band 1 (see my comments on band 1 alignment below), I measured the sensitivity of both J4's as better than 3 microvolts for a 10 db S-meter indication. This was quite encouraging, and not at all what I expected. Apparently I was not careful enough the first time I aligned band 1 in the "insensitive" J4. Several hours of nighttime listening on the BCB with an 85 foot inverted L antenna revealed no cross modulation, and sensitivity was excellent, with man-made (power line, et al.) noise clearly audible between beacons below 530 kHz and above 1600 kHz. Comparison listening tests with the J4's and a R-390A showed virtually no difference in sensitivity among the three. So it is a mystery to me why the J4 has a reputation for being insensitive on the BCB. Perhaps others made the same mistake I made and did not align band 1 as well as possible, or

perhaps they did not use an antenna which is suitable for J4's. The manual states that the J4 is designed for use with a single wire or whip antenna, and that the J4 has a high impedance antenna input. J4's do give lower S-meter readings on band 1 as compared to band 2 on the same signals where comparisons can be made in the frequency range overlap for bands 1 and 2. But this merely suggests that J4's are more sensitive than necessary on band 2.

To confirm what my ears already told me, I remeasured the dynamic ranges of both J4's on band 1. The results were gratifying. A two tone dynamic range test at 1200 kHz with test signals spaced 20 kHz apart gave 80 db for one J4 and 83 db for the other. Most of the dynamic range reduction appears to have been caused by the R149 mod, but I would still recommend against the band 1 mod because it is simply not necessary or desirable. On band 1 a J4 is triple conversion, with tuned IF's of 10.5 - 11.5 mHz and 2.5 - 3.5 mHz which track the front end. There are, consequently, two mixers for band 1. Collins was apparently very careful to distribute the J4 gain so that the mixers would receive the lowest possible signal levels (maximum dynamic range) while maintaining adequate sensitivity.

Therefore, I would like to retract my previous words. Collins did not do a terrible thing and desensitize band 1. I did a stupid thing and reduced band 1 dynamic ranges of my J4's by more than 10 db with the band 1 mod and R149 mods. Of course, Orr and other hams who did the R149 mod reduced the dynamic ranges of their 51J's. Fortunately, it is relatively simple to undo the band 1 and R149 mods. These mods do improve 51J sensitivity. But in my opinion there is no need to improve the sensitivity of 51J's provided they are aligned *carefully*, and the price you pay for improved sensitivity is significantly reduced dynamic range, especially on band 1 (the BCB). The price seems unacceptable to me.

As Fritz pointed out, the J4 was not designed as a SSB or CW receiver, but rather as a premier AM receiver (which it still is). Nevertheless, the J4 can be used effectively for SSB or CW reception if you are willing to turn down the RF gain, turn up the audio gain, and use the RF gain control to adjust the signal levels of SSB or CW signals. For best SSB reception you should adjust the BFO pitch so that the BFO frequency is at one or the other edge of the mechanical filter skirt depending on whether you are listening to USB or LSB. Tuning SSB and CW signals with a J4 is, of course, inconvenient because you must constantly adjust controls as you tune around. Or is it? The J4 has a 500 kHz IF output jack which can be used to feed SSB converters, such as the Hammarlund HC-10. The first time I used a HC-10 with a J4 the resulting SSB performance was disappointing. SSB signal quality could at best be described as poor, and at worst unacceptable. I disconnected the HC-10, put it away, and did not think about it again until recently. One evening as I was reading the J4 manual I noticed that the J4 IF output impedance was specified (as 50 ohms), but the IF output level was not specified. So I borrowed a scope and measured it. The IF output measured a whopping 12 volts peak-to-peak! No wonder the HC-10 sounded terrible when connected to my J4. It was being overloaded. Using the scope I determined that a 2.7 K ohm half watt resistor in series with the HC-10 input dropped the voltage to an acceptable level, namely 200 millivolts at the input of the HC-10. With the dropping resistor in place the J4 and HC-10 combination was excellent for SSB and CW, not to mention AM. For those of you who are not familiar with the HC-10, it is essentially the IF strip of a Hammarlund HQ-180, and includes a notch filter, bandwidths of 6, 4, 3, 2, 1, and 0.5 kHz, three AGC release times, IF vernier fine tuning, and a product detector.

Owning a classic tube receiver like the J4 is not for everyone. For openers, *you* will have to overhaul, repair, align, and maintain a tube RX because there is virtually no one who does this type of work any more as a business. Consequently, you must have a manual. Next, you will need tubes. How and where to get tubes at reasonable prices is something of an art. I recommend Fair Radio and scrounging at hamfests. You might also consider subscribing to *The Hollow State Newsletter* which is devoted to tube gear and occasionally contains addresses of tube suppliers. Send Chris Hansen a SASE at P.O. Box 1226, New York, NY 10159 for an information sheet and subscription order form. If any knobs are loose, if you need to do any repairs, or if you want to align your J4, you will need multiple spline wrenches because all of the set screws in the knobs and many of the set screws elsewhere in a J4 are multiple spline sockets. If you are the lucky owner of a complete J4, a holder on the inside top of the top dust cover will contain a complete set of spline L-wrenches, and they will suffice for most of your needs. To remove a spline wrench from the holder, squeeze the top ends of the holder together using your thumb and index finger, and slide the wrench out of the holder with your other hand. I would still recommend that you purchase an Xcelite 99-PS-60 multiple spline socket screwdriver set which should include the 99-1 handle and may or may not include the 99-X-5 extension. I consider the extension essential because it allows you to get to impossible or hard to reach places. Unfortunately, the Xcelite 99-PS-60 multiple spline socket screwdriver set is becoming more difficult to find, and you may have to special order it through your local electronics supply store. In addition, you will need good quality Phillips screwdrivers with #2 and #3 tips. I use Master Mechanic screwdrivers which are available at True Value Hardware stores. Sears probably has something equally good in their Craftsman line. I would also recommend a tube puller and tube pin straighteners, such

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as the # S-5029 tube extractor and # S-8655 dual 7 and 9 pin tube straightener available from Antique Electronic Supply, 688 W. First Street, Tempe, AZ 85281 (their 1989 catalog is \$2).

A 51J4 requires the following tubes: (2) 6AK5, (3) 6BE6, (8) 6BA6, (2) 12AX7, 12AU7, 6AQ5, 5V4G, and OA2. Fortunately, these tubes are still common and not very expensive. It also requires a 250 VAC, 1.5 A slow blow fuse, and three #47 lamps (bulbs). Radio Shack currently sells the fuse and bulbs. Do not assume that just because a J4 works it must have the correct tubes, fuse, and lamps installed. You should check them all and determine whether they are all as specified (the required tube type is printed on the chassis beside each tube socket). Do not use a J4 with incorrect tubes, fuse, or lamps.

One of the problems with aligning a J4 is that the manual makes alignment seem very difficult, and it is vague on some points. For example, as part of the front end alignment description the manual says, "Adjust the core in L114 so that it is in approximately the same position as the cores in L116 and L118." This really makes no sense if you think about it. Furthermore, "1.0" is printed beside L114 on the chassis, suggesting that it should be aligned at 1.0 mHz. After studying my copy of a R-388 manual which contains a much better explanation of the band 1 conversion scheme, I decided that L114 should be peaked at 1.0 mHz. In the process of realigning band 1 for the dynamic range measurements mentioned above, I observed that adjustment of C140 (the ceramic trimmer capacitor with ".6" printed beside it on the chassis) is very delicate in some J4's, and you can easily lose 10 db or more S-meter indication by carelessness. Misalignment of L114 and C140 could be contributing factors to the J4 reputation for band 1 insensitivity.

You can make the J4 front end alignment difficult by following the manual procedure, or you can do it the easy way by using the 100 kHz calibrator and S-meter. I have done it both ways and gotten virtually identical results. The alignment frequency of each inductor and trimmer capacitor is printed beside it on the chassis, so you do not even need a manual if you do the front end alignment the easy way. Before you begin the front end alignment, you should look at the antenna trimmer capacitor and verify that the plates are fully meshed when the antenna trimmer knob pointer is at 9 o'clock, the plates are half meshed when the pointer is at 12 o'clock, and the plates are completely unmeshed when the pointer is at 3 o'clock. If these conditions are not satisfied, loosen the set screw on the antenna trimmer knob and adjust the knob. Front end alignment should be done with the antenna trimmer plates half meshed (knob pointer at 12 o'clock). As with any front end alignment, you may need to adjust each inductor and trimmer capacitor several times until there is little or no change.

After you finish the front end alignment, turn the J4 on its side, tune to about 1250 kHz, find the spurious signal, and adjust L124 (on a bracket beside the long RF switch assembly) for greatest attenuation on the spurious signal. I found it helpful to turn on the BFO to locate and minimize the spur. Adjustment of L124 should be done with the bottom dust cover installed. There is a small hole in the bottom dust cover for access to L124.

IF alignment is also as easy or as difficult as you want to make it. The J4 manual suggests using a decoupling network when aligning the IF transformers, but I could not tell any difference with or without the decoupling network. The easy way again involves using the 100 kHz calibrator signal and S-meter. To make S-meter movement easier to observe, I set the bandswitch to one of the higher SW bands, say the 15 mHz band, so that the S-meter is about mid-scale. The 100 kHz calibrator signal should be tuned so that it is at about the middle of the 6 kHz bandwidth. If you don't have the original J4 alignment tools (which should be in the holder on the side panel), you can use two screwdrivers. One screwdriver should have a larger blade which fits into the slots of the circular metal rims just inside the holes of the IF transformer tops. Turning the circular metal rim adjusts the top IF transformer core. The bottom cores of the IF transformers can be adjusted with a screwdriver having a small blade. The bottom cores are attached to threaded metal shafts which come out the bottom of the IF transformer and are accessible underneath the chassis (after you remove the bottom dust cover). You should tape the shaft of the small screwdriver with insulating electrical tape so that the metal shaft does not come in contact with bare wires near the alignment shafts. If you don't like that approach, you can use a plastic alignment tool with a small plastic blade tip and adjust the bottom cores by inserting the tool through the top of the IF transformer. Radio Shack sells a suitable tool as part of their TV Alignment Tools, catalog number 64-2223. There are at least two reasons why you should not use a metal screwdriver inserted through the tops of the IF transformers to adjust the bottom cores. First, a metal screwdriver inserted through an IF transformer would shift the center frequency of that transformer by a substantial amount, defeating your attempt to align the transformer. Second, if one of the bottom cores is frozen, a metal blade screwdriver could break the powdered iron core. If a core is frozen or stiff, then you will have to use a small metal screwdriver to turn the slotted metal shaft which comes out the bottom of the IF transformer. The BFO coil adjustment is the circular metal rim with slots, and the frequency will be pulled slightly when using the metal screwdriver. But if you slightly misalign the BFO, the BFO frequency will pull back to the desired

frequency when the screwdriver is removed. The crystal filter output transformer does not peak with the crystal filter set to position 0. I used crystal filter position 1 to adjust the crystal filter output transformer. The IF gain of a J4 is set by R187, the smaller slot adjustable potentiometer with lock nut with IF GAIN printed beside it on the chassis top. There are no instructions in the J4 manual for adjusting R187. I have concluded that the correct setting for R187 is about one quarter turn from maximum gain. You should be able to hear an increase in front end noise as the antenna trimmer is rotated (except on band 1), but the S-meter should barely move (if at all). The setting of R187 also determines S-meter sensitivity and zero position. After adjusting R187 you will need to readjust the S-meter zero position. The S-meter zero adjustment is the larger slotted potentiometer with METER ZERO printed beside it on the chassis top. If you set R187 for too much gain, the S-meter will pin beyond the 100 db mark on strong signals. After adjusting the IF gain and meter zero you should tune the strongest signals you can find and readjust the IF gain and meter zero if necessary. A R-388 with a mechanical filter conversion kit may not have R187.

To adjust the crystal phasing I suggest that you use the alternate manual procedure. I was not entirely satisfied with the results of the alternate manual procedure, and after some trial and error I arrived at the following variation. With the phasing control at 12 o'clock, set the crystal selectivity to position 4 and tune a calibration marker for maximum S-meter reading. This will generally not be exactly at the center of the 6 kHz filter bandpass, but should be nearby. Adjust the kilocycle dial hairline to the nearest kilocycle dial mark and observe this frequency, which is the center of the position 4 bandpass. Reset the crystal selectivity to position 1. For the remainder of the phasing alignment the crystal filter selectivity will remain in position 1, although I will often refer to the frequency that corresponds to the center of the position 4 bandpass. Adjust the kilocycle dial upward by 1 kHz and turn the phasing control 90 degrees each side of 12 o'clock. You should observe a deep null at some position of the phasing control. Remember the position of the (first) null. Adjust the kilocycle dial downward by 2 kHz (1 kHz below the crystal filter position 4 bandpass center) and turn the phasing control 90 degrees each side of 12 o'clock. Again you should observe a deep null, but at a different position than the first null. Remember the position of the second null. Rotate the phasing control so that the indicator (white line) is half way between the two nulls. Loosen the set screws on the phasing knob without changing the position of the shaft and reset the knob so that the pointer is at 12 o'clock. Adjust the kilocycle dial upward 1 kHz (to the crystal filter position 4 bandpass center). Finally, T102 is adjusted with the non-metallic blade end of the small J4 alignment tool. Adjust the kilocycle dial upward 3 kHz and peak the core of T102. Readjust the kilocycle dial downward 6 kHz and repeat the core of T102. This second peaking of the T012 core should require little or no change in the core position. If the change is substantial, readjust the kilocycle dial upward 6 kHz and repeat the core of T102 while observing the approximate number of degrees the alignment tool is rotated. Then reverse the rotation of the alignment tool by half that amount. In other words, set the core of T102 half way between the settings which correspond to the two peaks. Alignment of the crystal phasing is now complete. The manual states that with the phasing control set at 12 o'clock the phasing capacitor plates should be half meshed. With my procedure I found this not to be the case. The plates are about 20 degrees from half meshed. I do not consider this unusual because it is unlikely that the crystal and capacitor have the precise values and characteristics specified by the original design. In any case, the symmetry criterion I have used gives good results.

The mechanical filters are plug-in style (as opposed to soldered-in style) and are held in place with a metal bracket. If you must remove a mechanical filter, remove the bracket and then use your fingers (not a screwdriver or other metal lever) to pry it out. Do not drop a mechanical filter on a hard surface while handling it. They may look sturdy, but internally many mechanical filters contain small ferrite transducers attached to the end discs with small wires. Ferrite is a ceramic, much like glass, which can be broken by the shock of a sharp blow. Current Yellow Sheets J4 filter prices vary from \$45 to \$75, usually at the high end. The manual specifies the filters as types F500B-14, F500B-31, and F500B-60, part numbers 522 9030 002, 522 9008 002, and 522 9009 002 respectively, but many J4's come with filters having 526 xxxx 00 part numbers. The one 522 xxxx 00x filter I have seen was painted gray, and had shorter pins than the shiny 526 xxxx 00 filters. I presume that the 526 xxxx 00 filters are a later model production change.

The dial cords (there are two) in 51J and R-388 receivers are stranded steel, nylon coated wire with 7 strands of about 0.0037" steel wire and an overall outside diameter of about 0.029". The closest I have been able to come to this wire is Berkley 30 lb. test, Steelon trade mark, nylon coated leader wire. The strands are right, and the overall outside diameter is slightly smaller at 0.026". It is available separately as catalog no. D30 or as part of a leader kit, catalog no. C30B, which includes 0.040" inside diameter crimp sleeves and a crimp tool. The end loops of the original dial cords in my J4's were fabricated with miniature crimp sleeves which functioned as miniature cable clamps. It is possible to tie knots in the ends of the Steelon wire as suggested in the J4 manual, but I suspect this would be unsatisfactory for the MCS dial cord because the overall length is extremely critical (as I will explain below). For this reason I would recommend

that you use crimp sleeves to form the loops in the ends of the MCS dial cord. The 0.040" inside diameter crimp sleeves which come with the Berkley leader line kit are much larger than the crimp sleeves used by Collins to fabricate the dial cords, so I used Mason catalog no. 1D, 0.033" inside diameter by $\frac{3}{16}$ " long black crimp sleeves which are slightly larger than the original Collins sleeves. It appears that Berkley also make a suitable crimp sleeve, catalog no. 2A, 0.033" inside diameter, copper, but I have not been able to obtain any of them yet. Berkley products are available at some specialty fishing stores, or write to Berkley, Outdoor Technologies Group, One Berkley Drive, Spirit Lake, IA 51360 for information.

The reason I replaced the dial cords is that the nylon coating had cracked in several places which causes accelerated stretching of the cords and eventually reduces the spring loaded tension of the MCS dial cord to nil. If the MCS dial cord has already stretched so far that there is no tension on the spring, a satisfactory temporary fix is to tie a knot in one end of the dial cord just behind the crimp sleeve which attaches directly to the pulley tab. If you go to the trouble to replace the MCS dial cord, you may as well replace the MCS dial drum cord at the same time.

To replace either dial cord you will need to remove the front panel. The J4 manual instructions for front panel removal are inadequate (which screws must be removed are not specified) and incomplete (because the instructions are actually for removing a J3 front panel). When removing the knobs be sure to use a multiple spline wrench, not an Allen wrench. Otherwise, you may strip a spline socket head and then you have a big problem. You can't just replace a spline socket with an Allen socket because the number of threads per inch are not the same. The knobs which must be removed are the large KCS (tuning) and MCS (band change) knobs, the small antenna trimmer knob, and the selectivity, phasing, and BFO pitch knobs. Remove the collar, tension washer, and flat washer from the KCS tuning shaft and store them in a secure place for safekeeping. Remove the BFO pitch shaft by loosening the two front set screws in the flexible coupling and sliding the shaft out the front. If the shaft adapter remains in the flexible coupling, try to remove it and keep it with the BFO pitch shaft (if you lose it you will have difficulty finding or making a replacement). Remove the mechanical filter selector lever by loosening the spline set screw in the non-mar clamp and sliding the shaft out the front. Slide the clip-on #47 lamp holders off the metal strips they are clipped to, gently extract the lamps and their wiring harness, and lay them on top of the chassis. Place pieces of wood or folded newspaper under the side panels to raise the J4 and remove all strain from the bottom edge of the front panel. Remove the following 10 screws from the front panel: the 2 large screws on each side of the serial number tag at the top center of the front panel; the 2 smaller screws at the top corners of the escutcheon (there are nuts and washers on the backs of these screws); and finally the 6 large screws on the sides of the front panel, 3 on each side, which fasten the front panel to the side frames. As the last of the large side screws are removed brace the front panel with one hand as the screws are removed so that they do not gouge the front panel. Pull the front panel forward and off the shafts, and if necessary, lift the lamps and their wiring harness out as you remove the front panel. Lay the front panel face down in front of the J4 mainframe. Place the lamps and their wiring harness on the back side of the front panel (which is now facing up). The rack handles will support the front panel if the work space is large enough. Do not rest the front panel or knobs directly on tools or other objects (which can scratch or otherwise damage them). I slide short pieces of $\frac{1}{2}$ " inside diameter rubber tubing over the exposed metal shafts to act as soft bumpers which prevent accidental damage to the front panel if it is bumped against the shafts. Suitable rubber tubing is available at most auto supply stores.

The MCS dial drum cord is easier to fabricate, so you should probably do it first to get some experience working with the Steelon wire. In fact, you should probably cut off a small length of Steelon wire and make at least one loop for practice. I have had no problems cutting the wire with miniature diagonal cutters, but if you have an expensive pair of diagonal cutters you may want to drop by Radio Shack and buy one of theirs just in case the steel wire puts a dent in your diagonal cutter blades. With a small knife, slice off a $1\frac{1}{2}$ inches strip of the nylon coating from one side of the wire, peel back the remaining nylon coating, and cut it off with diagonal cutters. Slip a sleeve onto the bare wire and push the sleeve onto the nylon coated part. Form a loop with the bare wire so that the end comes nearly to the junction between the nylon coated and bare parts. Slide the sleeve back toward the bare end and thread the bare end into the sleeve (much like threading a needle, although the wire already passes through the sleeve once). Push the sleeve further onto the doubled bare wire until the end just clears the nylon coated part. Push the free bare end further through the sleeve until the desired loop size is reached (about $\frac{3}{16}$ " or maybe $\frac{7}{32}$ " linear extension beyond the end of the sleeve, just large enough to slip over the pulley tab, or duplicate the original Collins loop size). Slide the sleeve forward slightly and cut of the excess bare wire so that the (bare) free end coincides with the junction of the nylon coating and bare wire. Slide the sleeve back until the sleeve end just touches the nylon coating. Crimp the sleeve at its center using the larger crimp depressions in the jaws of the crimp tool, and then crimp both ends (the jaws are not wide enough to crimp the entire length of the sleeve). After making a practice loop or two, follow the manual procedure to make a MCS dial drum cord,

except make a loop using a crimp sleeve at the end which attaches to the tab on the dial drum pulley instead of tying a knot as the manual says. The 27" length specified by the manual seems fine to me. I used about 1" at one end to make a loop, and cut off about 1" at the other end after tying the required knot. This made a finished cord about 25" long, and provided about $2\frac{1}{2}$ turns on the dial drum pulley with the J4 set to band 30. The cord I removed from one J4 was only 19" long, so there is excess cord length in case you make a mistake.

If there is an easy way to replace the MCS dial cord I would surely like to know about it. The MCS dial large pulley is behind the KCS dial and so close to the KCS dial that the KCS dial must be removed unless you want to pry on the plastic KCS dial (which I consider to be a no-no). Removing the KCS dial can be a hair-raising experience. It is attached to the KCS shaft with two spline set screws which are on the back side of the KCS dial assembly. The set screws may be painted with green varnish which may have frozen them in place. Even if the set screws have not been painted with green varnish, they may still be frozen. You'll need the Xcelite 99-1 handle, 99-X-5 extension, and 99-65 tip just to find out. If it is frozen, get ready for the fun. You'll need a wood tongue depressor or similar thin, wide, and long piece of wood and a 100 watt soldering gun with business end small enough to get between the thick metal plate behind the front panel and the plastic KCS dial when the tongue depressor is placed between the soldering gun business end and the plastic KCS dial. The wood tongue depressor protects and insulates the KCS dial from hot soldering gun parts. Place the tip of the soldering gun directly over one of the socket screw holes, with business end resting on the metal bushing, and squeeze the trigger for about 20 seconds. *Carefully* remove the hot business end of the soldering iron, insert the spline tip in the socket, and twist counterclockwise with moderate pressure. You should hear a muffled snap as the set screw releases, and the set screw should then turn easily. Do not apply excessive pressure. If the set screw does not release, use the soldering gun again, applying heat for maybe 40 seconds this time, and try again. Do the same for the other set screw. Incidentally, this heating trick works for almost any frozen set screws, and is usually much simpler to do. A 45 watt soldering iron works well in most cases, and you usually do not have to protect nearby surfaces. It works best when you can place the soldering iron tip directly onto the socket. Be careful handling the KCS dial even after the set screws are released. On many KCS dials the numbers are painted on, so if you get dirt or grease on the front surface over some of the numbers, you may have difficulty cleaning up your mess. When removing the KCS dial from the KCS shaft it is best not to apply pressure to the plastic dial as you can loosen the mounting or break the brazed joint between the metal disc to which the KCS dial is attached and the brass bushing which contains the set screws. If force must be used to remove the KCS dial, it is best to apply the force to the brass bushing which contains the set screws. The J4 manual says that you will need $36\frac{5}{8}$ " of cord for the MCS dial cord. That length was not correct for my J4. I needed about $1\frac{1}{2}$ " extra at each end. Both ends require a loop with crimp sleeve as described above. The finished cord for my J4 measured $36\frac{5}{16}$ " from end of loop to end of loop. That length turned out to be slightly too short to use with the original J4 tension spring. The cord was long enough so that the end of the crimp sleeve for the loop which attached to the spring cleared the pulley opening by about $\frac{1}{4}$ ", but the tension spring was so stiff that it deformed as I tried to slide the hook in the end of the spring over the tab on the pulley. I have never before encountered such a flakey dial cord tension spring. In my opinion, Collins did not make a good choice for the tension spring. The old dial cord was exactly $36\frac{5}{8}$ " long as specified by the manual, but with it there was no tension on the spring. This means that the original J4 MCS dial cord tension spring has less than $\frac{5}{16}$ " stretch before deformation. I consider that unacceptable, and in any case I had already deformed the original tension spring. So I fabricated another spring from a Century Spring Corp. stock no. C-5 spring which I bought at my local True Value Hardware. I used 12 turns not counting the hooks (partial turns) on each end. A type C-55 spring would also suffice. It is the same diameter and material, merely longer. By careful measurement, and possibly making several dial cords, each longer or shorter than the other by $\frac{1}{16}$ ", you may be able to use the original tension spring. But you may be disappointed with the results because the dial cord will stretch as it ages, and sooner than you might like you may find that the MCS dial cord again has no tension.

The PTO's (VFO's) in J4's I have worked on have not required an end point alignment because the end points had expanded less than 1 kHz for the entire 1 MHz tuning range. This seems remarkable for receivers which are about 30 years old because R-390A PTO's frequently have spread anywhere from 4 kHz to 12 kHz or sometimes more. Perhaps some industrious previous owner had already done an end point alignment on the J4's I have seen. The J4 manual states that a PTO with substantial end point spread should be sent back to the factory for permanent alignment. Unfortunately, Collins no longer supports J4's, and most hobbyists would probably not pay the high price for a new or permanently realigned J4 PTO. So you must make do with an end point alignment, which the J4 manual calls a temporary PTO alignment. Based on my experience with R-390A PTO's I would not expect a J4 PTO to spread at a rate greater than about $\frac{1}{2}$ kHz per year, so you should not need to do an end point alignment more often than once every 5 years or so. That is not bad for a so-called temporary PTO alignment.

The manual makes an end point alignment seem virtually impossible. And if you try to follow

the manual procedure you will discover that it is even more difficult than the manual description suggests. It requires you to remove the front panel (which includes removing the BFO pitch shaft, the mechanical filter selector shaft, and the two MCS dial lamps and the wires which are attached to them), and the KCS dial (the manual doesn't say this, but you can't remove the PTO without removing the KCS dial), to cut cable lacing on the cables to the PTO for several inches away from the PTO (the manual doesn't say this either, but you can't remove the PTO unless you cut some of the cable lacing), to remove the PTO and dangle it by its wires, attach a small knob with a skirt divided into 100 equal divisions to the PTO shaft, and so on. There is no way that I am going to dangle a PTO from a J4 by its wires. That would be inviting disaster.

Although the J4's I have worked on have not really needed an end point alignment, I decided to try to develop one which avoided removing the PTO. Having done R-390A PTO end point adjustments with the PTO left in the R-390A, my plan was to try a similar approach with the J4 PTO. This avoids cutting cable lacing, removing the KCS dial, dangling the PTO by its wires, and makes it unnecessary to use a small knob with a skirt divided into 100 equal divisions (which the manual procedure requires) because the KCS dial can be used instead. The end point adjustment cover nut can be removed by removing the tube shield and tube in front of it and using a small $\frac{3}{8}$ " open ended wrench. It is possible to remove the end point cover nut without removing the MCS dial drum, but because the MCS dial drum is easily scratched I recommend that it be removed. That also gives you more space to work on the PTO. To remove the MCS dial drum, turn the BAND CHANGE knob to band 30, remove the front panel (and BFO pitch shaft, mechanical filter selector shaft, and MCS dial lamps and wires), release the MCS dial drum tension spring and unwind the spring to release all tension, remove the MCS dial drum cord from the large pulley on the dial drum, remove the two Phillips head screws from the bracket on the right hand side (when viewed from the rear) which supports the MCS dial drum (hold the MCS dial drum as you remove the last screw), gently remove the MCS dial drum, and put it in a protected place for safe keeping. Be sure not to loose the tension washer on the MCS dial drum shaft (on the end opposite the pulley). You may also want to remove the bottom two mechanical filters (the 6.0 and 3.1 kHz bandwidths) as I did to give yourself more room to work on the PTO.

I tried to use my home made end point alignment tool which I use to align R-390A PTO's, but it was too long to fit into the small space in front of the J4 end point adjustment shaft. While I was pondering what to do next, I received a one page note from Walter Hann of Austria called "R-388 (51J3/4) Alignment Without Instruments" by Bob Grove, dated 1976. This short article suggested making two L shaped alignment tools from 2" finishing nails by filing the bottom ends to the shape of small screwdriver blades, with the blades at the ends of the bottom of the L, and the blade of one alignment tool oriented 90 degrees relative to the other. This permits you to alternate between the two alignment tools, rotating the end point adjustment shaft up to 90 degrees with one tool, and then up to 90 degrees with the other tool, and so on until the end point adjustment shaft has been rotated enough to align the end points. A dental mirror is used to help you insert the blade into the end point adjustment shaft slot. I made one such alignment tool, but it was almost useless because the tip of that alignment tool kept slipping out of the end point adjustment shaft slot. The J4 manual suggested why. The diameter of the 2" finishing nail I used to fabricate the end point adjustment tool was 0.095" diameter. However, the J4 manual gives the dimensions of the Collins end point alignment tool from which it can be inferred that the end point adjustment slug is about 0.138" diameter. The nails size recommended by Bob Grove was too small. I made a pair of alignment tools from two $3\frac{1}{2}$ " nails with 0.148" diameter which worked well. With these larger alignment tools it took me only a few minutes to align the end points. The vertical dimension of my alignment tools is about $1\frac{1}{2}$ " and the horizontal dimension is about $\frac{3}{4}$ ". The blades taper for the entire horizontal $\frac{3}{4}$ " and finish with a tip thickness of about 0.025". It took the better part of an afternoon to make these two alignment tools, but I feel it was time well spent. Light and position were also very important factors. I did the end point adjustment sitting in a low chair, with a bright light above and behind my left shoulder, with the J4 on a low table so that I was looking downward, and with the J4 rear facing me. How far should you turn the end point slug to bring the end points back into alignment? And in which direction? For my J4, one turn of the end point adjustment slug changes the end points error by about 6 kHz. The direction depends on whether exactly 1 mHz corresponds to more than exactly 10 turns of the KILOCYCLE dial or less: for *more* the end point slug is rotated clockwise when viewed from the *front* of the J4, and for *less* the end point slug is rotated anticlockwise. An aged PTO is usually in the *more* category. The 100 kHz calibrator and BFO are used to determine the change in end points error after you have turned the end point slug. You may need several tries to get the end points error to within $\frac{1}{2}$ kHz or less. After the end points have been adjusted to your satisfaction you will need to loosen the PTO coupler set screws and adjust the linkage so that a 100 kHz calibrator marker (at zero beat) corresponds to the 0 of the KILOCYCLE dial at 12 o'clock. This is because changing the endpoints shifts all frequencies.

If you purchased a J4 without dust covers, you should try to find a set, for example, from a junker R-388. The dust covers do more than keep dust out. They also keep internally generated

RF, especially harmonics of the 500 kHz IF, from causing spurious responses in the J4. Before you remove the dust covers, tune to 0.5, 1.0, and 1.5 mHz without an antenna connected and look for spurs. There should be a weak one at 0.5 mHz, a weaker one at 1.0 mHz (you may have to use the BFO to find this one), and maybe a still weaker one at 1.5 mHz. With both dust covers removed you should find a strong spur at 0.5, and spurs with decreasing intensity up to about 4.5 mHz. Obviously it is not a good idea to use a J4 with the dust covers removed, especially on the lower bands. And clearly it is not a good idea to buy a J4 without dust covers.

The most common cause of anomalous performance in a tube type receiver, such as the J4, is bad tubes. I've said it before and I'll say it again, tube testers are notorious for indicating that bad tubes are good. For example, I fixed a drifty and low reading S-meter in one of my J4's by replacing all of the 6BA6's in the IF with new 6BA6's even though all of the old 6BA6's tested perfectly good on my tube tester. Situations like this are not surprising because a tube tester measures transconductance, a parameter directly related to tube gain. Other parameters, such as AGC action, noise, and hum, usually have nothing to do with transconductance. I can usually identify a bad tube by retubing the receiver and putting the old tubes back into the receiver one at a time until the problem returns. But in this case the drifty and low reading S-meter apparently was caused by multiple bad tubes, and I have been unable to determine which are responsible. I hate to toss several otherwise good tubes in the trash, but there seems to be no other acceptable course of action in a situation like this.

It is curious that 51J4's have not been more popular with BCB DXers. One reason may be price. In R. S. Moore's book *Communications Receivers* a price of \$1099 is stated, but no year is given. In any case, that is well over twice the price of a HQ-180A during the period both were produced. Even today a 51J4 often commands a premium price, especially if it is complete and in good physical and electrical condition. I understand that on the East coast prices are typically in the \$300 to \$400 range for a J4 in good condition with all three mechanical filters, but without the matching cabinet. Prices tend to be less in other regions, and considerably less for J4's in below average condition or missing mechanical filters.

Sunspot activity could cause disruptions on Earth

SAN FRANCISCO (AP) — Sunspot activity that peaks in about a year could be the second most intense since Galileo first saw the solar eruptions in 1610 and might knock satellites off course, cause scattered blackouts and disrupt phone calls and radio broadcasts, scientists say.

Sunspots are relatively cool, dark, 1,200- to 60,000-mile-diameter eruptions that appear where the solar magnetic field is most intense. They emit solar flares, explosions that send protons, X-rays, electrons and other radiation streaming outward, sometimes causing magnetic storms on Earth by disrupting the Earth's magnetic field.

Most effects are subtle — rare flickering of lights and poorer connections for satellite-relayed phone calls or television shows — so "the average guy on the street won't know if we're in the throes of a major magnetic storm," forecaster Joe Kunches said Friday.

"They may notice the disturbance, but they won't know why," often wrongly blaming the phone company for noise on long-distance lines, he said by phone from the Space Environment Services Center in Boulder, Colo., the government's forecasting agency for the storms.

The average person also "might not get his favorite radio station as well as he likes," or might notice the northern lights or aurora borealis farther south than usual, NASA physicist Kenneth Schatten said during the American Geophysical Union's annual meeting in San Francisco.

A so-far successful prediction that the current solar cycle would be exceptionally large was issued in early 1987 by Yale University's Sabatino Sofia and Schatten, of the National Aeronautics and Space Administration's Goddard Space Flight Center in Maryland.

A NASA news release said some scientists believe the "solar maximum," or peak of the cycle, might be the biggest since 1610, when Italian astronomer-physicist Galileo Galilei first observed sunspots.

But Schatten and Sofia predicted this cycle won't be quite as large as the 1958-59 solar maximum, "and we have no reason to change that," Schatten said Thursday.

Schatten said the sunspot cycle lasts about 11 years, with the previous maximum in late 1979, the last minimum in September 1986 and the next maximum expected as early as late 1989, much earlier than the 1991 date originally forecast.

Magnetic storms are not dangerous to people on Earth. But they pose a potentially lethal proton radiation hazard for spacewalking astronauts and spacecraft electronics, said Schatten and Ron Zwickl, head of research at the Boulder-based Space Environment Laboratory.

Excess ultraviolet light from solar flares heats Earth's atmosphere, expanding it to produce drag that can make satellites in low orbits fall to

Some scientists believe the peak of the cycle might be the biggest since 1610.

Earth prematurely, they said. The U.S. Spacelab fell to Earth after an intense solar flare in 1979.

"Some key missions may be affected," forcing NASA to plan spacecraft launch dates and adjust orbits to minimize the problem, Zwickl said.

"If there had been a man on the moon in August 1972 (during a flare of protons), he would have absorbed a lethal dose of radiation," Zwickl said, adding that proton emissions in the cycle should peak between 1991 and 1993.

Kunches said X-rays from flares disrupt military and other communications that cross polar areas of bounce signals off the layer of Earth's atmosphere called the ionosphere.

Zwickl said no one knows why solar maximums vary in intensity.

The Topeka Capital-Journal, Sunday, December 11, 1988

- via Paul Swearingen

MUSINGS

Herman T. Adams

343 8th St. N. E. G2 - Atlanta, GA 30309-4264

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

Tony Fitzherbert - 356 Jackman Avenue - Fairfield, CT 06432

Hi, I haven't mused for a while, and have done relatively little DX because of other activities - PTA president, soccer coach and have just one verie, from WBIS-1120, who began 1000/500watt, DA-N on 11-1. I am reviving the Station Profile column, so send you profiles to me. The family went to Nova Scotia in July and I did manage to visit some facilities, although no profiles. First was WDEA-1370, Ellsworth, located in an old white house in downtown Ellsworth. Two extremely tall towers pushing the signal east (call stands for Down East), are located on the bank of Western Bay, in the village of Surry. Next, heading east, saw studio building of WQOY-1230, also in a house on the main street, Route 1. The tower is but a couple of blocks away. Station is on edge of Eastern Time Zone, and gives the time for both EDT and ADT! I did not see any trace of WMCS-1400, Machias, but what a great country station - old records, and real down east announcements. Next - St. John - CHSJ-700 has an interesting two tower array - a huge tower, easily 500 feet high and a smaller one immediately next to it. CFBC-930 is located in an old brickhouse in downtown St. John - and 1110-CBD, of course is located in the ultra modern CBC complex - 4 tower array (two big, two short) located next to the St. John River. After leaving Bay of Funday National Park, we drove through Moncton and saw CBM Tower, a typical huge tower and the two tower array of CKCW-1220, both along the bay outside Moncton. At dusk, by the way, WLIB-1190 is as audible up here as any of the 50Kw NY clears! Truly interesting is the CBC Shortwave Station in Sackville, on the marshes before Nova Scotia and in nearby Amherst, the two towers for CKDH-900, out on the same marsh. I would have loved to visit these stations, but this is a family vacation and the rest of the family doesn't share our hobby! Next day, while staying in Truro, I found the studios of CKCL-600, and its two huge towers overlooking a marsh and the Salmon River. The studios are in the basement of a two story building housing law offices. Down in the Annapolis valley, four AM stations, CKDY-1420, Digby, CKAD-1350, Middletown, CKER-1490, Kentville, and CFAB-1450, Windsor, all simulcast and all ID as "AYR", for Annapolis Valley Radio. I heard no legal IDs, except occasionally on the hour. Overnight in Yarmouth, I did see the studios, in a downtown office building, and three tower array for the 5000 watt CJLS, the Array is in a quagmire atop a sand dune overlooking the Atlantic, interesting photographs. By the way, at some NRC Convention in the future, I would have quite a slide show. CJLS is the only 5000 watt station on 1340 in the New World, very tight signal. Found the tower for CBAF-1, 1230, but this CBC french outlet is off the air. DX, at Cherry Harbor, out in the Atlantic, I listened at noon. WCBS news from NY, at local strength, U.S. stations rolling in here out in the Atlantic were WNBC, WBZ, WDEA, WLOB, Portland, WHDH-B50, as well as WCBS. WLOB comes in there better than it does 15 miles north of Portland! Took a look at Halifax Radio, all stations to the south of the city, the two towers for CBH-B60, and two more for CHNS-960. Next to the highway, 5 miles south of Halifax is the transmitter attendents quarters and three tower triangular array for CJCH-920. Four miles west is the array, four 600 foot towers for CFDR-680, Dartmouth. CFDR's studios are located in the penthouse of the tallest building in Dartmouth. On Sunday, a local beer distributor buys the 24 hours. Next station I saw was the two towers for CJFX-580, Antigonish, this a real variety station - everything from Rock to Country. Also noted the facilities, two towers for CKEC-1320, New Glasgow, and they were advertising a power increase, and a move to a new location. Nova Scotia stations are mostly variety, as they serve remote areas and offer something for everyone. The Halifax market is the only area where stations really format. One is oldies, the other CHR, and CBH, of course, is the local CBC outlet. In Bangor, Maine, en route, I noted WKIT's two towers, 10000 watts, mostly east, and they totally simulcast FM, they do not mention the AM. WLBZ-620, Stephen King's station, is located atop the tallest hill in Bangor. A 500 foot plus tower, and a very short one, Station is all AOR, and Stephen King does not have to worry - he makes his money on books. I understand that he wants to operate this station on a commercial-free basis! It is off the air from 0000-0600 nightly! WABI-910 is also off the air at night. WKIT is the only station that is on all night. It was an interesting trip, lots of scenery, lots of driving, and an interesting trip. The stations would have been interesting to visit, but I had no time for profiles - something I hope to change on an upcoming trip to Indianapolis. Good DX To All. TONY

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William T. Farmerie - 62 Sunrise Avenue - Grafton, MA 01519

I recently came across an article of interest to anyone interested in Medium Wave propagation. It is Low Frequency Radio Astronomy in Antarctica by A. Fant, and it appeared in the December 1980 issue of SKY & TELESCOPE. The author, while stationed in McMurdo, rigged up a 50 ohm termination Beverage Antenna, 160 meters long (1/2 wave at around 1000KHz) which was fed into an AM/BCB portable and Russtrak chart recorder monitoring 1000KHz. Author activated this Medium Wave Radio Telescope in Antarctic winter of 1978. Basic outcome was a radio "noise" that correlated to the Zurich sunspot numbers, and was especially high during solar flare induced "blackouts", i.e. Auroral conditions. This article is worth reading in your nearest big library. Author did not determine the minimum detectable frequency for the phenomona nor whether it was caused directly by the sun or indirectly came from the Auroral Plasma. I tend to think the latter was the source. Brian Vernon and Geir Stokeland: If you are reading this, Have you ever considered using your Arctic Beverages for such monitoring?

John Malicky - 995 Shadycrest Road - Pittsburgh, PA 15216-3023

The 1988 Unconvention Report from Michigan City, Indiana

or

(How I Got My First Lesson In Diaper Duty)

The following tale that you are about to read seems almost unbelievable, maybe great material for a sitcom as I can now think of how Fred Vobbe can produce an ad for WNRC at next year's convention(!), but it wasn't so funny then. For those who are mechanically inclined, bear with me, and for any of you who have ever been delayed for several hours, you know how it feels, as what I'm about to relate seems (to me anyway, fills the space for musings) like it was supposed to occur! Here's how it unfolded.

With this year's convention in Milwaukee, I again decided to visit stations beforehand in northwest Pennsylvania, northern Ohio, and possibly 1 or 2 in Indiana (highlights in next musing). Around 4PM Friday, September 2nd, because of gaining an hour from Eastern to Central Time and of the easy access, I decided one more stop was available at WIMS-1420 (v/1 October '85) Michigan City, Indiana (60 miles east of Chicago on Lake Michigan). The week before, courteous directions to WIMS were provided by NRCer Roger Winsor, whom I had also planned to see today.

After 6PM, following an enjoyable visit at WIMS, including being on the air for 5 minutes, I attempted to depart. The week before my car gave me a little warning (as a friend's advise thought the problem to be with the starter), so I had the charging system checked by a mechanic the day before I left. Also that same day, a little voice said, "get a AAA membership, too," so I did. However, in the WIMS parking lot, after half an hour of praying, cursing (or was it cursing and praying, hi!), and constantly turning the ignition, nothing. I was stuck! Fortunate to be in their lot and as night DJ Chuck Bancure left the doors unlocked, I made calls from the station and soon a tow truck arrived from Dave's Garage 6 miles east. Greg the driver worked quickly as he had another tow to get and since I now had much time to kill, went for the ride. Later, Greg said he'd drop me off at at motel. Anyway, another few miles east of the garage at a rest stop along I-94, we encounter Hasham, a college student here in the states by way of Kuwait. Small world as Hasham had actually been to Pittsburgh at a now closed downtown nightclub! Incredibly, he was attempting to see his girlfriend in...you guessed it...Milwaukee!

So after calling home, the 3 of us set out on our merry way to take Hasham home. Where is his home? Not around here as Hasham's AAA Deluxe card provides 100 free miles towing and he'll use almost the full coverage...85 miles of it...on I-94 east to Kalamazoo, Michigan where he attends his school! And it gets even better-hi! At 11PM CDT, while my thoughts are of how NRCers are enjoying the first night in Milwaukee, Greg is banging his hands on the dashboard (and driving) to the rhythm of the hard rocker, Battle Creek's WKFR-103, though I may be wrong, who cares anyway! At 12:30, we arrive and drop off Hasham who shares a nice apartment with 3 other Kuwait students, then head home, home? Afterwards, almost running out of gas a few miles outside Kalamazoo, Greg couldn't figure out where Kuwait is and kept calling 'the foreigner' a "Mexican"! Back in Michigan City at 1:45AM and because its late, I'm offered a chance to sleep on the couch inside Greg's mobile trailer and accept the invitation!

Now it's BAM Saturday morning, September 3rd, and I'm still thinking about Milwaukee, while Greg heads back to work at the garage 1/2 mile up the road. Though not before telling me since his wife

was late for work that night, she now must stay the 2 hours she missed to 10AM which means I can't pressure the garage to get my car fixed quickly. Also, this means I am trusted to babysit their 2 young sons, Mathew age 14 months and 2 year old Ricky who slept through all this excitement. While I don't really have an appetite, Mathew does and delights that he has milk and crackers. Once changed by his dad this morning, Mathew decided he was ready again! Whew! So to kill more time (as there is no phone and no Bugs Bunny -hi!) and the flies bearing down, I will pass my first lesson ever at diaper duty and baby in bath, though there's no hot water in the bathroom, so I must heat some from the stove! With a clean and happy baby, he and I are surprised by the knock on the door.

Why it's Greg's sister-in-law whose given the details of why I'm here and now leaving! After 10AM, a pay phone, across the street from the garage next to the closed motel, is used to call Mike Knitter and end the APB(!) [Yep! we were starting to wonder where you were?!] and then home again. Meantime, I can see my car being driven, it's fixed! No it isn't says the mechanic who finally figures out the relay switch on the firewall is halfway out and pushes it back in!? I am lucky (?) as the bill is only for \$16, no other problems, ha!

At least I'm thankful (in the form of \$5) to Greg for allowing me to stay (babysitting charge waived), I'm off and free!

With about 150-160 miles of driving ahead, I'm obliged to stop and see Roger Winsor at work at the Iron Skillet Restaurant in the Petra Truck Plaza 15 miles west of Michigan City, so I'm a few hours late - hi!

Finally, I'll reach Milwaukee around 3PM.

Believe what you want, the previous 18 hours was no dream, it happened, a "day that will live (or be forgotten) in DXing infamy!" (PS - I must give some credit to Sue Knitter who urged me to relate this story as I had my doubts given the embarrassment!) 73's

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FCC RULES PRIMER

JOHN D. BOWKER - PRINCETON JUNCTION, NJ

THE HISTORY OF WIRELESS REGULATIONS IN THE UNITED STATES

Broadcasting is only one aspect of wireless communications. In fact, there were many radio stations operating long before any broadcasting stations came on the air! The story of how they are kept from interfering with each other is a fascinating tale.

Marconi's experiments with transatlantic communications came in the late eighteen hundreds. He had studied the work of Gilbert, Tesla, Faraday, and so many others, and demonstrated that radio messages could actually be received thousands of miles away. Soon thereafter, ships started putting radios on board so they could get instructions about where and when to dock with their cargoes. But without regulations, the use of any frequency was on a first-come, first-served basis (not unlike modern-day CB radio).

In the early 1900's, Lee DeForest invented the "audion" -- a fancy name for the first radio tube. Up until then, transmitters relied on a spark gap to get the signal out into the atmosphere. But with the radio tube, transmitters could be built that put out rather clean signals! The spark-gaps had been notorious for covering a wide band of frequencies with a raucous signal. The cleaner signal from tube transmitters also meant that more stations could go on the air because there was less interference from each station.

The radio rooms on most vessels carried tube transmitters, spark-gap transmitters, and wonderfully sensitive regenerative receivers. Out in the ocean, everything worked well together. There was some crowding of stations, but the Wireless Ship Act of 1910 took care of that for the most part.

Early radios sold for use in the home were based on the successful ship-board receivers. Unfortunately, however, the regenerative receivers had the annoying problem of sending out signals (for several blocks!) as well as receiving them! The development of the super-regenerative radio helped, but only a little. Some of the rules of the U.S. Radio Act of 1912 applied but, by the end of World War I, with the advent of broadcast stations, the number of radio receivers mushroomed. By the mid-1920's, there was near mayhem all across the dial. Stations would come on the air almost exactly on the frequency of another nearby station. Combining that with the then popular regenerative radios that sent out their own annoying whistles whenever they locked onto a station, it was quite usual to hear more interference when tuning across the dial than broadcasters! In 1927, the Congress wrote the Dill-White Radio Act that created a five-member "Federal Radio Commission" (FRC) and mandated them to fix the problems.

By this time, things were so bad on the airwaves that one of the first new FRC regulations forced 150 of the 732 broadcasting stations to turn in their licenses and go off the air. Admittedly, this helped a little. And then a fellow named Edwin Armstrong invented the superheterodyne receiver (super-HET-rah-dine or just plain "Superhet"). Its main feature was that it caused very little interference to other receivers.

But there was still no long-range plan for communications in the country. By 1934, the Congress recognized this problem, and with the encouragement of the new President, Congress passed "The Communications Act of 1934". This new law created the "Federal Communications Commission" (FCC) and mandated to fix the problems. Sound familiar?

NEXT MONTH: WHAT THE FCC IS REALLY LIKE AND HOW IT MAKES ITS RULES.

The Answer Man

Got a question about radio? Send it to Russ Edmunds - 753 Valley Rd. - Blue Bell, PA 19422-2052. No question is a dumb question, and Russ will answer all, from basic to highly technical. Watch for the answer in *DX News!*

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