

MAY 15, 1993 - VOLUME 30 - NUMBER 31 - EDITION 989 - ISSN 0899 - 9732

 THIS ISSUE IS DEDICATED TO RIC HEALD WHO PASSED AWAY IN APRIL 1993. RIC
 THIS ONE IS FOR YOU. YOU WILL BE MISSED BY ALL WHO KNEW YOU. GOOD DX...

NEW MEMBERS: Robert Hammon, Steven Nelson. **REJOIN:** Stan Shedd. **RENEWALS:**
 Matthew Shugart, John Bryant, Paul LaFreniere, David Braun, John Rugee,
 Ray Bauernhuber, Wolfgang Schneider, Albert Kaiser, Chuck Boehnke, Al
 Buckalew, Ernest Cooper, John Dolan. Welcome Robert, Steven and Stan,
 also thanks to all of you renewers.....

WWJZ: Problems have occurred with obtaining verifications from WWJZ-640
 Mount Holly New Jersey for their March 1st equipment test. DX'ers who
 heard the test are asked to send a copy of their report to: Ron Musco
 National Radio Club PO Box 118 Poquonock CT 06064. Return postage is
 required. Ron will attempt to obtain verifications for the equipment
 test only. Thank you very much Ron.....

IN THIS ISSUE: Broadcasting Information, DX Worldwide West, Western DX
 Roundup, Central DX Roundup, 1993 Convention Update, Eastern DX Roundup,
 DX Techniques, Western DX Forum, Eastern DX Forum (not here as I type
 this Sunday evening), Hearing It Through The Grape Vine, Geomagnetic In-
 dices, Technical Column (four foot unamplified box loop), Some News Re-
 lease Items (a very, very good book on antennas from Joe Carr) good...

IRCA AM-FM ALMANAC - Limited Edition

The 5th Edition of the IRCA AM-FM ALMANAC has sold out, and the 6th Edition will not be published until next year. But several DXers have expressed interest in obtaining the most recent Almanac edition from 1991. To satisfy this demand, a limited number of copies of the 5th Edition will be published this summer. We'd like to know how many copies to print.

- **1991 Edition** — This will be the edition sent to the press in October 1990, and as such all sections are at least that old, with some information from 1988 and 1989.
- **Looseleaf Edition** — This edition will not have a comb binding. This will allow us to copy the necessary pages, to send you a complete book ready to hole-punch and place in a binder.

If you already own the 5th Edition, this will be no different. If you do not yet own an IRCA Almanac and you want up-to-date information, you may prefer to wait for the new 6th Edition next year.

But if you want the 5th Edition, please let us know as soon as possible. Price to IRCA members will be \$13 U.S., \$14 Canada. Send no money at this time. Write to Bill Hardy, 2301 Pacific Ave., Aberdeen. WA 98520-4527. Thank you!

KHSL

BROADCASTING INFORMATION

EDITOR: ROBERT WIEN 1309 DENTWOOD DR SAN JOSE CA 95118

DEADLINES: 2nd & 4th Saturdays.

Compiled: 04/26/93

Much of this information was compiled from M Street Journal, DXM, and various other sources.

NEW STATION APPLICATIONS: NONE

NEW STATION GRANTS: NONE

CONSTRUCTION PERMIT ACTIVITY: NONE

FACILITY & PARAMETER APPLICATIONS:

AR. Batesville	KAAB-1130	20-N
GA. Dublin	WCLI-1230	700/700
MA. Cherry Valley	WCRC-830	7000/5000 (CP)

FACILITY & PARAMETER GRANTS:

KS. Holcomb	KEUF-1030	1000-D, ND
NV. Las Vegas	KENO-1460	30000/30000

CALL LETTER CHANGES:

AL. Huntsville	WAAJ-1550	becomes WLOR
FL. Cantonment	WJBW-1090	becomes WRGT
NE. Lincoln	KFMQ-1480	requests KMEM ("Memories") (6/1)
PA. Bedford	WBFD-1310	becomes WAYC
	WAYC-1600	becomes WBFD
TN. Blountsville	WJTZ-640	becomes WGOC
VA. Manassas	WPRW-1460	requests WKDV
Portsmouth	WBSK-1350	becomes WSVY
WA. Seattle	KKFX-1250	becomes KKDZ ("Kids") (5/15)
WI. Hudson	WRPX-740	becomes WMIN
ON. Hamilton	CKMO-1150	becomes CKOC

FORMAT CHANGES:

AL. Huntsville	WAAJ-1550	was silent, now WLOR, black gospel
AZ. Nogales	KFBR-1340	was country, rptd. silent
CA. Palmdale	KUTY-1470	was country, talk, now SS (reg. Mexican days, CRC Net. SS AC nights)
San Luis Obispo	KIXT-1400	was country//FM, now all ads (Radio Home Shopping)
FL. Pinellas Park	WMTX-1040	was AC//FM, adds oldies 7PM-1A, to be known as "Cruisin' 1040" nights
GA. Waycross	WAYX-1230	was stds., now JSN soft AC
ID. Rexburg	KRXK-1230	was country//FM, adds FTP talk
Rupert	KBBK-970	was country, now EFN talk, JSN C&W
IL. Chicago	WJJD-1160	was stds, adds talk 6 AM-noon (G. Gordon Liddy middays, local talk AM drive)
IN. Auburn	WIFF-1570	was new age, now FTP talk, ASN sports
Fort Wayne	WLYV-1450	was oldies//WJLT, now silent
IA. Sheldon	KIWA-1550	was country//FM, adds talk//FM

FORMAT CHANGES (CONT.):

KY. Neon	WNKY-1480	was country, adds Unis. CNN nx
Paducah	WDXR-1450	was country//FM, now Unis. CNN nx
LA. Crowley	KSIG-1450	was country, now Unis. stds.
MI. Adrian	WABJ-1490	was AC, now talk (EFM, Talknet, IBN, ABC)
MS. Carthage	WSSI-1080	was silent, to be SUN talk (May)
Clarksdale	WROX-1450	was AC, talk, adds NSE AC
Forest	WQST-850	was country//FM, now FTP talk
McComb	WAKK-1140	was country//FM, now urban AC
Vicksburg	WQBC-1420	was AC, adds FTP talk
MT. Laurel	KBSR-1490	was oldies, adds Unis. oldies
NE. Lincoln	KHAT-1530	was stds., will go silent in May
	KFMQ-1480	was silent, now KMEM, Unis. stds. (6/1)
NV. North Las Vegas	KQNO-1140	was CHR//FM, now travel info "Casino radio"
NY. Buffalo	WWKB-1520	was talk, adds Unis. Liddy talk
	WWWS-1400	was bus. nx, adds NTN talk
New York City	WEVD-1050	was talk, ethnic, stds., adds NTN talk
NC. Cherryville	WCSL-1590	was AC//WGNC, adds NSE AC//WGNC
Gastonia	WGNC-1450	was AC, adds NSE AC
Lincolnton	WLON-1050	was AC//WGNC, adds NSE AC//WGNC
Shelby	WOHS-730	was AC//WGNC, adds NSE AC//WGNC
Williamston	WIAM-900	was southern gospel, now C&W, FTP talk
OH. Circleville	WNRJ-1540	was nx/talk, now c. Xtian "The Light"
OK. Wagoner	KXTD-1530	was sports//WWLS, now silent f/repairs
OR. Enterprise	KWVR-1340	was country//FM, now JSN C&W//FM, EFM talk
Lincoln City	KBCH-1400	was stds., now oldies
PA. Bedford	WAYC-1600	was AC, talk, now Wbfd, religion
	WBFD-1310	was religion, now WAYC, Unis. 41-AC, talk
SC. Seneca	WSNW-1150	was stds//WBFM, now oldies//FM, stds.
SD. Custer	KFCR-1490	was country, now NSE AC
TN. Blountsville	WJTZ-640	was oldies, talk, now WGOC, country
Chattanooga	WDEF-1370	was EZL//FM, now EZL
Shelbyville	WHAL-1400	was EZL, now JSN soft AC
TX. Kermit	KERB-600	was SS//FM, now SS
Port Neches	KDLF-1150	was south. gospel, adds SGC Xtian C&W
Ralls	KCLR-1530	was silent, now SS AC
Slaton	KCAS-1050	was stds., now SMN oldies
Texarkana	KTWN-940	was EZL, talk, now AC//FM, talk (sim. AC FM mornings only, then pgms. talk)
VA. Lynchburg	WXYU-1320	was SMN C&W, now SMN oldies
WV. Charleston	WQBE-950	was talk, adds Unis. Liddy talk
ON. Chatham	CFCO-630	was AC, now oldis
London	CFPL-980	was AC, adds talk middays
St. Catherines	CHLO-1570	was oldies, now country

Gary Larson of Burbank, CA. confirms some of the information mentioned earlier on KUTY-1470 CA., thanks Gary.

DX is at a standstill here, just 2 months till the convention, maybe DX will pick up till then! I end the column on a somber note, as I want to mention the passing of a long-time IRCA member, Ric Heald, on April 6. Ric was a very instrumental person in our club for many years, having been on the BoD and editor of the WDXF column for many years. He was a fine person and all of us in IRCA will miss him very much. 73's.

***** A DXers TECHNICAL GUIDE *****

Now in its 2nd edition, this 120 page book answers questions on how receivers work, how to make them work better, what audio filters and loop antennas will do for you, how to build a beverage and phasing unit, and much more. Only \$5.50 for IRCA members, \$6.50 for non-members (add \$2.50 for overseas airmail). Write: Phil Bytheway, 9705 Mary N.W., Seattle, WA 98117.

IRCA Stationery

Black on white masthead with the IRCA logo and name. Great for using when writing for verifications. 100 sheets, \$5.00. Order yours today from: IRCA Bookstore, 9705 Mary Ave NW, Seattle WA 98117



PAT MARTIN P.O. BOX 843 SEASIDE. OR 97138

DX Worldwide - West

Time: UTC phone (503) 861-3185

DEADLINES: 5/31,6/21,7/5

PAN AMERICAN DX ROUNDUP

- 540 MEXICO, S.L.P.-XEWA-very good with IDs at 0700 on 5/4. This is about the strongest XE received here from inside Mexico. The border powerhouses are stronger. (PM-OR)
- 820 MEXICO, Mexicali-XEYX-Vy strong with ID as "La Gigante, la emisora del amor y de amistad" at 0304 4/10 (LBG-MT)
- 1010 UNID, SS station gave MDT TC at 1302 4/6. IDed as "La Super uno musical," followed by unreadable chipmunk jingle. Could be a U.S. or Mexican. Then on 4/25 at 1253, gave ID or program name that sounded like "Radio Reporter." Who? (LBG-MT)
- 1130 t MEXICO, Chilpancingo-XECHG believed the one at s/off 0300 4/7 on AU PM in the clear. Seemed to ID as "Radio Fiesta" twice before playing XE NA (LBG-MT)
MEXICO, Toluca-XETOL-apparently the new one (not listed in WRTH). In the clear on AU evening 4/24, gave CST TC at 2056 as another XE (probably XECHG above) was s/off with NA. Vy strong at 2105 with ID, "Desde Toluca te acompaña XE-TOL, Radio Lobo, 1130 AM, con lo mejor de la música popular, estudios y oficinas Avenida Independencia Oriente 406, Colonia Centro." (LBG-MT) (Larry, thanks for listing the address you heard, as I have been trying to QSL this one for quite sometime. Apparently they are the station that moved from 1200 KHZ and boosted power and changed call. Same address is listed.PM)
- 1170 MEXICO, Hermosillo-XEYH-gave power as 5,000 watts and IDed as "XEYH Radio Mil....la super estación" at 0258 4/10. Gave PDT=MST TC(LBG)
- 1190 UNID, SS with MDT=CST TC at 1249 4/25. Mentioned "X" Could be U.S. or Mexico. (LBG-MT)

TRANS-PACIFIC DX ROUNDUP

- 540 WESTERN SAMOA, Apia-2AP-good over all with usual man in Samoan, some Island mx but mostly talk, several mentions of "Samoa" and "Apia" at 0715 5/3 (PM-OR)
- 774 AUST., Melbourne-3L0-4/25 1102-Good man doing Australian and World News in accent. New! (SA-MB) (Good catch.PM)
- 1017 JAPAN, Fukuoka-JOLB-4/25 0950-poor woman in JJ, faded up for about 3 minutes. My first JJ station! (Congrats and another good catch, especially since cx haven't been that great this Spring.PM) (SA-MB)

VERIFICATIONS

- 585 AUSTRALIA, Bourke-2WEB sent v/1,stickers and map showing all the stations on 585 in Australia and nearby countries. Took 4 months after taped report with U.S. \$1.00 v/s Sue Smith-sec. (BP-WA) (Good one, Bruce.PM)
- 900 MEXICO, Mexico City-XEW-nice letter in 28 days in SS for taped report. Signed Martha Aguilar S. Address as Ayuntamiento 52-06070 Mexico D.F. (PM-OR)
- 1440 JAPAN, Sapporo-JOWF-sent v/1 and vq in 4 months for taped report sent to address in WRTH. v/s Mr. Yoshiya Honjoh said the program on my tape was a talk about baseball and confirmed it was them (BP)

THANKS TO THESE REPORTERS

- SA-MB SHAWN AXELROD-30 BECONTREE BAY-WINNIPEG, MB R2N 2X9 (CANADA)
DXing at Valhalla Beach DX Site w/ICOM R70,Bev. W & S,about 500'.
LBG-MT LARRY B. GODWIN-2390 CLYDE DALE LANE-MISSOULA, MT 59801
HQ-150, Sanserino air-core box loop
BP-WA BRUCE PORTZER-6546 19TH AVENUE,NE-SEATTLE, WA 98115
PM-OR YOUR EDITOR
Drake R8, Beverages and Ground system.



WESTERN
DX
ROUNDUP

Nancy Hardy
2301 Pacific Ave.
Aberdeen, WA 98520

DEADLINES FOR WDXR TIPS: Sat. May 29, Sat. June 19, Mon. Aug. 2, Mon. Aug. 23, Sat. Sept. 4. PLEASE USE EASTERN TIME.

REPORTERS FOR THIS ISSUE:

- (FA) Frank Aden-4096 Marcia Place-Boise, ID 83704
(LG) Larry Godwin-2390 Clydes Dale Lane-Missoula, MT 59801
Hammarlund HQ-150, Sanserino air-core box loop
(NHP) Nick Hall-Patch-1538 Amphion St.-Victoria, BC V8R 4Z6
DX'ing south of Tofino, BC using homebrew receiver & short wire
(BH) Bill Hardy-2301 Pacific Ave.-Aberdeen, WA 98520-4527
Yaesu FRG-7, Radio West loop
(PM) Patrick Martin-P.O. Box 843-Seaside, OR 97138
Drake R8, SP-600-JX17, 200' term. SW/NE wire radial ground system
(MS) Mike Sanburn-P.O. Box 1256-Bellflower, CA 90707
GE Superadio II
(SW) Stan Weisbeck-411 E. Sinto #203-Spokane, WA 99202
Sony ICF-2010, Realistic TRF, Select-A-Tenna
(RW) Robert Wien-1309 Dentwood Dr.-San Jose, CA 95118
GE Superadio, GE long-range portable, SM-2

OF SPECIAL INTEREST

- 1460 CJMH AB, Medicine Hat 10kw relay of CBR-1010 will be shut down in early May, according to CE at CHAT-1270 (who is also the CE for CJMH). CBC doesn't want to fund it anymore. (PM-OR)
- 530 TIS CA, Martinez 4/29 0450 mixing with Oakland College TIS, with repeated message "in case of a disaster call 911," gave ID as "operated by the City of Martinez Police Department" and gave address. Haven't heard this for a couple of years. (PM-OR)
- TIS CA, Oakland 4/15 0230 at times above jumble with concert info, "WNSA-852" call given. QRM from Astoria & San Jose. (PM-OR)
- TIS CA, San Jose 4/15 0230 airport info giving info on parking prices. QRM from Oakland TIS & Astoria TIS. (PM-OR)
- TIS OR, Astoria 4/15 0230 fair in jumble with tourist info. Was off some of the winter. Returned, but much weaker than before, no problem to get around most nights now. (PM-OR)
- 610 KONA WA, Kennewick 4/17 1215 adcon music. First time heard here, ground wave reception much stronger than normal. (SW)
- 700 KQKE CA, Soledad 4/25 0810 faded up over KFAM, C&W music, "Your station with the music of the 90's, The Quake." (SW-WA)
- WLW OH, Cincinnati 4/26 0400 fair, ID then into "700 WLW News." Haven't heard in many years. (SW-WA)
- KFAM UT, North Salt Lake City 4/25 0800 weak with EZL music continuous after ID. (SW-WA)
- 720 WGN IL, Chicago 4/27 0509 weather forecast, temperatures given around Chicago area. (SW-WA)
- 790 KOQO CA, Clovis-Fresno 4/25 0700 bilingual ID at top of the hour, English then Spanish: "KOQO Fresno." (MS-CA)
- (KABC) CA, Los Angeles 4/25 0610 totally off. Heard 2 Spanish stations (Radio Ranchitos) and a C&W station playing "Killing Time" by Clint Black. KGHL or CFCW? CFCW was logged here in 1975. (MS-CA)
- KGHL MT, Billings 4/25 0625 surprise logging! ID "AM 790 KGHL" heard at 0627, 0630 & 0652. C&W tunes by Lori Morgan &

Garth Brooks, weather promo, and possibly the one with CBS news. Some slow fading--often armchair level. MT #8. (MS)

830 (KPLS) CA, Orange 4/12 0733 totally off, CKKY in good. (RW-CA)

870 KORD WA, Pasco 4/12 2343 ID'd briefly before going into news. (LG-MT)

CKIR BC, Invermere 4/3 0119 fair with Oldies Coast to Coast and part of a regional network. (SW-WA)

880 KWIP OR, Dallas 4/23 0844 in the clear on this loop bearing with ad for "Cinco de Mayo" celebration in Woodburn, sponsored by "su estacion favorita, KWIP." Later ID'd as "KWIP, la Super 880, Radio Exitos." I called station, announcer said they are 24 hours in Spanish. (LG-MT)

CKLQ ME, Brandon 4/27 0504 fair o/u KRVN with "Q Country Weather," with temperatures for Dauphin & Brandon. (SW-WA)

890 WLS IL, Chicago 4/13 0123 fair with Rush Limbaugh himself doing WLS ID, then back into Rush Limbaugh program. (SW-WA)

900 KBIF CA, Fresno 4/17 0300 "This is Sports, 900 KBIF Fresno" mixing with unID Spanish. (SW-WA)

KUYO WY, Evansville 4/12 0830 very strong at pattern change with weather for Wyoming. (RW-CA)

960 KABL CA, Oakland 4/24 0327 IDs heard as "San Francisco's new B-98 FM." Adcon music by Madonna, mentioned soft hits of the 80's & 90's. I think call letters are the same. Format is similar to KFMY's, but they're more EZL. (MS-CA)

KFMY UT, Provo 4/26 0808 loud after apparent pattern change in KABL null with ID "Unforgettable 960 AM, KFMY," MOR standards. (RW-CA)

990 *KKIS* CA, Pittsburg 4/26 0812 with OC, KQSB in alone. (RW-CA)

1010 KKGZ CO, Brush 4/25 faded in just at 0900 with ad for call forwarding in NE Colorado, then promo for an Assembly of God in Brush. (LG-MT)

1020 KCKN NM, Roswell 4/8 0818 fair C&W music then talk about a presentation at Eastern New Mexico U. Last heard many years ago. (SW-WA)

KYXE WA, Selah 4/19 0900 in Spanish with program "Musica de la Tierra," then woman gave call in English. (LG-MT)

1030 KJDJ CA, San Luis Obispo 4/8 0900 had jingle ID in Spanish, then "RC Cadena Radio Centro" news. (LG-MT)

1040 KURS CA, San Diego ID'd 4/6 at 0859 in Spanish, "KURS, la unica estacion espanol... AM estereo, desde San Diego," then jingle "K-10-40" in Spanish. (LG-MT)

KCBR CO, Monument 4/7 0857 ended religious show and gave brief ID, in the clear. (LG-MT)

1060 KBGN ID, Caldwell 4/12 0838 loud way over KPAY with ID after s/on, "The voice of praise, KBGN." Still looking for Calgary-1060! (RW-CA)

CFCN AB, Calgary per call to station 4/19, hasn't changed calls and probably won't in near future. Application for new calls (to be determined) still with CRTc. (RW-CA)

1070 WTSO WI, Madison 4/17 2306 with simple ID "AM 1070, WTSO." (LG)

1100 KFAX CA, San Francisco 4/26 0845 booming in with religion, "Life at 1100, KFAX" then Christian program. (LG-MT)

KNZZ CO, Grand Junction very strong on this loop bearing 4/26. At 0900 ended "Morning in America" on the People's Radio Network, then car ad, then "This is ??? Radio, AM 1100, KNZZ, Grand Junction." (LG-MT)

1110 KRCX CA, Roseville a powerhouse 4/7 at 0900. Man said in Spanish, "Su radio completa," then taped ID in English, "You're tuned to KRCX, Roseville, Sacramento and Stockton." (LG-MT)

KFAB NE, Omaha 4/3 0122 Bruce Williams doing local ad for Dan's Bargain Stores, then back into Talknet. (AW-WA)

1120 KANN UT, Roy 4/24 2053 ID as "KANN, Christian Radio in Salt Lake City," into contemporary Christian program, very strong. (LG-MT)

1150 KSAL KS, Salina 4/14 2253 on top of the hash with weather, then ID as "Radio 1150, KSAL." Ment. 24 hours. (LG-MT)

1170 KLOK CA, San Jose 4/13 ended ranchera music 0901, then taped ID,

- "This is KLOK, 1170 AM, San Jose, San Francisco y todo el norte de California." (LG-MT)
- 1180 KPUG WA, Bellingham 4/12 2254 had commercial for Farmers Insurance, then spot for KPUG-AM Newsbeat. (LG-MT)
- 1180 KYET AZ, Williams 4/5 0855 heard at s/on with "God Bless America." Gave station address & then prayer by Pastor Bishop. Temp. was 44 degrees. (MS-CA)
- 1190 CFSL SK, Weyburn 4/19 0854 strong with ID as "1190, CFSL," then into C&W. (LG-MT)
- 1210 KGYN OK, Guymon 4/14 2249 man said "KGYN, keeping you in the know," then John Lennon oldie. (LG-MT)
- KBSG WA, Auburn 4/18 2238 announcer said "Be caller #9 on the KBSG Listener Line," and mentioned FM 97.3. (LG-MT)
- 1230 KLDI WY, Laramie 4/15 2231 quick ID amidst oldies. (LG-MT)
- 1230 KHSN OR, Coos Bay 4/26 1500-1510 fair with noon news, fair mixing with KZUS at 1530 with old MOR music. (PM-OR)
- KMUZ OR, Gresham 4/26 1510 good off eastern Beverage with light rock, ID "K-M-U-Z." Good & strong--much better than KBPS-1450. (PM-OR)
- KZUS OR, Toledo 4/26 1535 C&W music fair with "Highway 101" ID's and weathercast, spots for Newport & Toledo, Depoe Bay. KVAS off. (PM-OR)
- 1250 KNEU UT, Roosevelt 4/24 2050 ID'd simply as "1250, KNEU," with "One great country song after another." (LG-MT)
- 1260 TIS BC, Pacific Rim National Park, Weatheradio Canada. Noted on car radio from Ucluelet to Tofino with fair to good signals with land and marine weather forecasts and environmental messages. According to the Victoria weather office, this is 25 watts from the visitor information centre in the park. Was overridden by KLYC-OR at 1010 4/1 south of Tofino, however. (NHP-BC)
- 1290 *KHSL* CA, Chico 4/12 0725 ment. of on air for calibration measurements & ET, then OC. (RW-CA)
- 1340 KORV CA, Oroville 4/8 0955 dominant & loud in post sunrise reception. Song "Photograph" by Ringo Starr. 1000 ID "Classic hits, KORV Oroville." (MS-CA)
- 1400 KUNA CA, Indio 4/26 0827 good in KBLX null with ID "Esta es la una, radio kah-una." (RW-CA)
- 1440 KVON CA, Napa 4/17 0142 very good signal over KDIF (null), with spots mentioning Napa and Sears Day Sale. Talknet and ID at 0200 "Serving the Napa valley 24 hours a day, this is KVON, Napa," into NBC news. (MS-CA)
- 1460 KARR WA, Kirkland 4/11 2300 ID then religious programming. (SW)
- 1470 KUTY CA, Palmdale 4/19 0727 usual good signal with new Spanish format, ex-C&W. Thanks to GL-CA for tip. (RW-CA)
- 1490 KCUZ AZ, Clifton 4/7 0139 faded up with clear ID read by male announcer, and country music. Not heard here since their frequency check in the 70's. (MS-CA)
- 1550 KAPL CA, Apple Valley 4/7 2205 has apparently changed formats. ID "50's rock 'n roll the way it was meant to be--the new 1550 AM." Songs "Tallahassee Lassie" & "I Will Follow Him." Sort of picks up where KQKL-960 left off. (MS-CA)
- KRGQ UT, West Valley City ex-KZQQ 4/26 ad in Spanish, then terse ID in English at 0855, atop all. (LG-MT)
- 1590 KCIN CA, Victorville 4/26 0300 faded up over KOGO with spot for Golf Digest, ID "KCIN Victorville-Apple Valley-Hesperia," Unistar news. (MS-CA)
- 1600 KBBX UT, Centerville per call to station 4/19, hasn't changed calls to KCPX. "Doesn't know anything" about application for those calls! (RW-CA)
- 1660 KDAB NV, Las Vegas was a promotional station for digital audio broadcasting at the NAB convention. Its power was 200 watts off a new, experimental transmitter. First noted with strong OC the evening of 4/16. Then 4/17 ran non-stop music (classical, Sousa march, jazz) with no voice from 2210-2328, when abruptly off. Then 4/18 copied 0840-0903 with rock and voice ID's between songs, thanking various participants located in booths. At 0855 man said "You're

listening to KDAB, 1660 AM, the AM DAB demonstration broadcast for NAB '93." Last noted with programming 4/21 p.m., OC only 4/22 a.m. Reception reports should go to Mike Smith, CBS Radio, 6121 Sunset Blvd., Los Angeles, CA 90028. I spoke with him while he was at KENO-1460 (which provided some facilities), and he mentioned receiving a FAX report from Hawaii. (LG-MT)

+4/17 new experimental test signal at 2300 with classical music, off at 2315. Noted back on at 0215 4/18 with country and rock music, announcements thanking AVI, Harris and other companies for equipment for running test. Also thanking RCS, mentioned "AM DAB," FM at 97.1, digital test on "The new AM band." Broadcasting from auxiliary studios of Lotus Broadcasting, KENO. Fair to good, some shortwave type fading. This sounded similar to earlier test on east coast. Wonder if I can get a QSL of this one? Thanks to Larry Godwin for the call. (PM-OR)

+Special station for NAB convention, noted from sunset to sunrise on 4/19 to 4/21. Good signal, running announcements that it was being run from KENO aux. facilities, ran mostly light rock, some country and various ID's and announcements for sponsors & booth locations. (FA-ID)

+4/21 0255-0400 good to fair and alone. Adcon music and taped announcements from USA Digital Radio, thanking equipment and computer firms helping with "in band, on channel digital audio broadcasting," mentioning booth numbers at NAB convention. Occasional "KDAB, 1660 AM." "Legal" ID's 0257 and 0358, "KDAB, 1660 AM, the AM DAB demonstration broadcast for NAB '93." Noted again 4/22 0105-0125, but gone 4/23 after convention ended. Thanks, Larry and Pat, for the calls! (BH-WA)

DX TEST

1330 (WVHI) IN, Evansville test 4/19, noting noted. (FA-ID)

+4/19 0212 DX test tried, not heard in KWKW null, only weak KUPL noted. (RW-CA)

UNIDS

- 1010 Spanish station gave MDT TC 4/6 0902. ID'd as "La super uno musical," followed by unreadable chipmunk jingle. Could be a Mexican. Then on 4/25 at 0853, gave ID or program name that sounded like "Radio Reporter." Who? (LG-MT)
- 1190 4/25 0849 Spanish with MDT/CST TC. Mentioned "X." Is KXKS Spanish? (LG-MT)
- 1350 4/17 0608 unID test tone weak under KSRO, looping east. (RW-CA)
- 1460 4/26 0418 under KENO in KTYM null, playing "I Will Always Love You" by Whitney Houston and "Sweet Home Alabama" by Lynyrd Skynyrd. Who is this? (MS-CA)
- 1470 4/12 0742 unID looping NE with BRN news. Is KBSN on net now? (RW-CA)
- 1490 4/7 0147 station ID'ing as "Power 1490," concert promos and rap music by Run D.M.C. (MS-CA)

Bill and I were very sorry to hear of the passing of Ric Heald. He was a great DX'er and friend. I'll miss his Saturday afternoon phone calls. It was nice to receive a report from Nick for this issue! The final contest standings should appear next issue. If you have some ideas for contests for next season, write them down and send them to me, or even better, tell me about them at the convention in Billings!

ALMANAC UPDATER 5.7 -- 1993 BASEBALL

IRCA Almanac Updater 5.7 covering 1993 major league baseball will be published no later than June 1. At least 22 of 28 teams will be included! If you didn't order Updater 5.7 last fall (it was supposed to be 1992 football), you may order it now for \$2 U.S. and Canada, \$3 elsewhere, payable to IRCA in U.S. funds, from Bill Hardy, 2301 Pacific Ave., Aberdeen, WA 98520-4527.

Central DX Roundup



John C. Johnson
979 Neptune Boulevard
Billings, Montana 59105-2129



FOR THE RECORD

REPORT ALL TIMES AS EASTERN.

DEADLINES: 5/29, 7/3, 8/19, 9/4.

RIDING GAIN

- [SA-MB] Shawn Axelrod, 30 Becontree Bay, Winnipeg, Manitoba R2N 2X9
Icom IC-R70 with PLAM board and 4kHz filter, 4-foot box loop, 100' wire.
- [RTE-MO] Richard T. Eddie, 152 West Rose Avenue, St. Louis, MO 63119-4653
Drake R8, Palomar loop.
- [TMJ-IL] Tom Jasinski, 419 North Raven, Shorewood, Illinois 60435-9640
FRG-7 with Quantum loop, R390A with 2½ foot loop, Sharp QT50.
- [JcJ-MT] Your editor using an Icom IC-R71A with a Radio West loop.

SPECIAL INTEREST

- 1140 **KXNO** NV, Las Vegas. **EX-KLUC**. 4/22 Noted using new format. Sometimes good signal mixed with KRAK and KGEM. KSOO nulled. Format is a TIS for Las Vegas and area. Back to back information on casinos, attractions, etc. "Give us 20 minutes and we'll give you Las Vegas." Slogan: "Casino Radio." Legal ID on hour is "Casino Radio is KXNO North Las Vegas. 11-40 Casino Radio." Report sent, needed for call change. Very quick verie. Station call history: KLUC>KMJJ>KRSR>KLUC>KXNO. [JcJ-MT]
- 1510 **KJLA** MO, Independence. **EX-KIDZ**. 4/13 fair. 2050 with NOS Music. "You're tuned to ??? radio station for great music 15-10 KJLA." 2059 sign off. Gave phone number 816-254-1073. [SA-MB]

DOWN THE DIAL

- 590 **KEZK** IL, Wood River. 4/4. 2318-2341. Simulcast of KEZK-FM 102.5's soft rock. On 4/5 format changed to all sports, still KEZK. [RTE-MO]
- 1030 **KBUF** KS, Holcomb. 4/14 good. 2055 with several "KBUF" IDs during Colorado Rockies baseball game. [SA-MB]
- 1060 **WHBF** MI, Benton Harbour. 4/3 fair. 0615 with NOS/BBD Music. "Central Coast original hits station AM 10-60 WHBF" and TC. New for me. [SA-MB]
- 1170 **KJOC** IA, Davenport. 4/2 with severe KVOO interference. 0248 with "11-70 radio K-jock" into sports. [RTE-MO]
- 1180 **WLDS** IL, Jacksonville. 4/4 fair. 0704 with "11-80 radio WLDS weather" into EZL music. Plus, now CBS News. [SA-MB]
- 1220 **WKNR** OH, Cleveland. 4/1. 0100 out of "Sports Byline" with SID "WKNR Cleveland." [RTE-MO]
- 1330 **KWLO** IA, Waterloo. 4/19 very poor w/KNOW. 0100 with "KWLO" ID. New for me, was tuned in for the WVHI DX Test. [SA-MB]
- 1380 **WMPS** TN, Millington. 4/6 poor in mess. 0650 with Gospel music and "WMPS" ID. [SA-MB]
- 1590 **KCNN** MN, East Grand Forks. 4/13 excellent. 2102 rebroadcasting CJOB's Winnipeg Jets Hockey game. Noted about a one second delay behind CJOB. Also, ran different spots than CJOB. [SA-MB]
- 1600 **KLEB** LA, Golden Meadow. 4/5 good signal. 0650-0710 with French/Cajun talk and mix of EE/FF C&W and Cajun music. ID on the hour. Heard every morning first week of April. [TMJ-IL]

CDXR Continued....

KWMX CO, Lakewood. 4/18 weak with noise. KBBX, KCRG nulled. 1850 with spot cluster and legal ID. "Mix 107.5" slogans elsewhere. Needed for call change. [JcJ-MT]

TIS

1610 IL, Morris. 4/15. 1600 noted new Illinois DOT taped loop for pavement rebuild on stretch of I-80 between Morris and Utica. Spotted what looks like a transmitter in a traffic control box on a pole with about a 10 foot whip antenna. This is on the west edge of the cloverleaf interchange for I-80 and route 47 on north edge of Morris. Signal makes it fairly well into Joliet 15 miles northeast. [TMJ-IL]

DX TESTS

790 **WLKW** RI, Providence. 3/29 DX Test. 0000-0015 listened during this period and heard only weak code at 0002 way under CIGM and WTAR. Code was too weak to copy. CIGM had potent signal tonight. [TMJ-IL]

+3/29 DX Test not heard here. [RTE-MO]

1280 **WCPM** KY, Cumberland. 4/1 DX Test. 0100-0115 heard weak TT and voice IDs under semi-local WBIG during scheduled test period. Unneeded. [TMJ-IL]

+4/1 DX Test. 0101-0116 both TT and voice IDs heard here. [RTE-MO]

1330 **WVHI** IA, Evansville. 4/19 good u/KNOW. 0119 with voice ID, TT at 0120, 0124, 0127, and 0130. New for me. [SA-MB]

+4/19 DX Test fairly weak with slop from local WJOL-1340. 0100-0130 heard TT with step changes in frequency during this period. Did not hear an ID during several spot checks. Presume this was them. Unneeded. [TMJ-IL]

+4/19 DX Test heard with interference from KFH. 0138-0210 heard TT and voice IDs. [RTE-MO]

FREQUENCY CHECKS

1530 **WMBT** PA, Shenandoah. 4/19 u/WCKY. Much weaker than signal from WVFC. 0043-0044 with TT on this 3rd Monday frequency check. [TMJ-IL]

WVFC PA, McConnellsburg. 4/19 u/WCKY. 0036-0040 with TT on this 3rd Monday frequency check. [TMJ-IL]

1600 **WINX** MD, Rockville. 4/19 mixing with or atop this GY sounding frequency. 0022-0024 with TT on this 3rd Monday frequency check. [TMJ-IL]

LOCAL CHANGES

1240 **KMAY** MT, Billings. 5/1 format change. Was elevator music now classic rock. IDing as "Kay-May" and "KMAY Billings" on the hour. Station was recently sold to May Technical College here. Formerly KUUS. [JcJ-MT]

25 YEARS AGO

Back in 1968 DX Monitor was published twice during May...May 4, 1968 issue of IRCA's DX Monitor...KWYS West Yellowstone, MT was one of the stations scheduled to conduct a DX Test for IRCA...Ken Dunn of Windsor, ON logged KNOX-1310, his first ND, state #38...Patrick Martin of Seaside, OR mentioned the Aussies and Asians had slowed down, only a few Japanese and Chinese being heard...May 18, 1968 issue of IRCA's DX Monitor...Mike Northam of Beaverton, OR told of his trip to the East Coast and bringing back a Dumont 304H 'scope with him on the plane...Larry B. Godwin of Littleton, CO told of his trip to Amarillo and a visit to KDJW where he learned the previous CE threw out all reception reports he received.

OPEN MIKE

Don't read everything you believe. I never did hear the Las Vegas NAB Convention test station, KDAB '660. Station operated in-band digital with 500 watts. It was heard as far away as Hawaii. I hope you had a chance to log this rare one! We're just 6 weeks away from the 1993 IRCA convention. This week's convention update contains important information for those that are planning on attending. There is a possibility Quality Inn will run out of rooms, but don't let that stop you from attending! 73, John.

GO-PHER IT!!

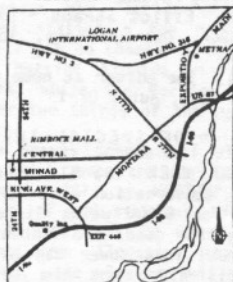


1993 IRCA CONVENTION UPDATE

The 1993 IRCA Convention will be held in Billings, Montana on June 25, 26, and 27th. We're getting into the vacation season and there is a possibility Quality Inn could run out of rooms very soon. If you called Quality Inn and they have told you there are no more rooms available in the IRCA block, don't despair. You can still attend the convention. You'll just have to make reservations at one of the other fine motels or hotels in Billings. Right nextdoor to Quality Inn is a Comfort Inn (406-652-5200) and next to them is a Marriot Fairfield Inn (406-652-5330). Within 3 miles of the convention site you can find

Motel 6, Super 8, Daystop, Elliott Inn, Kelly Inn, Ramada Inn, Holiday Inn, and others. Not quite as convenient, but close. Just be sure to fill out your registration sheet and mail that to John within the next few days. We're a little over a month away from the big event and we need to finalize activities! Many of you have already received the 1993 Montana Vacation Guide. Those who registered by May 1st will be sent Montana Vacation Travel Guides. If you registered after that date, or just want to receive a free 1993 Montana Vacation Travel Guide, call 800-541-1447. If anyone would like more detailed information about Billings, call 800-735-2635. For those driving into Billings take exit 446 off I-90 and head north on King Avenue West to the first set of stoplights at King Avenue West and Overland Avenue. Turn left into Homestead Business Park. Quality Inn can easily be seen. I-90 is well signed for this exit, King Avenue West. This is in the south-west area of Billings. Arriving from the west you'll see Quality Inn on your left while on I-90. Driving in from the east you'll drive about 5 more miles after reaching Billings. If you're flying into Billings call Quality Inn (652-1320) and request their courtesy pickup service. It will be about a 20 minute drive from the airport. 73, John & Larry.

Homestead Park



Traveling on I-90, Exit 446 and follow King Avenue West to Overland Avenue.



The *NRC AM Radio Logbook, 13th Edition*, is the most accurate AM radio listing of stations in the U. S. and Canada. Only \$16.95; Canada \$17.95 to U. S./Canadian NRC or IRCA Subscribers ONLY. \$19.95 to U. S., Non-Subscriber; \$20.95 Canadian Non-Subscriber. Airmail: to Europe, \$27.00, to the Pacific nations, \$32.00.

Mail to: NRC Publications - Box 164 - Mannsville, NY 13661 (NY residents add sales tax).

IRCA Reprints

The IRCA maintains a large file of articles which have appeared in past issues of *DX Monitor*. These articles cover a wide variety of topics, including: antenna theory and construction, tips for the foreign BCB DXer, how to improve your DXing skills, history of DXing and broadcasting, lists of stations by subject, construction projects and receiver modification, receiver reviews, medium wave propagation, and more. Copies are available for a nominal charge. For a list of reprints, send \$1.00 to:

IRCA Reprints, c/o Steve Ratzlaff, 1885 E Bayshore Rd Sp 90, E Palo Alto CA 94303.

IRCA Stationery

Black on white masthead with the IRCA logo and name. Great for using when writing for verifications. 100 sheets, \$5.00. Order yours today from: IRCA Bookstore, 9705 Mary Ave NW, Seattle WA 98117

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#####

DEADLINES: 5/28, 7/2, 7/30,
8/20, 9/4
TIPS: (703)953-0841 by 2230 ELT

* THE REPORTERS *

(MH) Mike Hardester - Jacksonville NC
(DLR) David Reitz - Louisville KY
R-1000, Palomar loop
(ES) Elliot Straus - Toms River NJ
R-390A, Quantum Loop, longwires, MFJ-
959B
(ed) the editor at home with R-392, 2'
box loop, Autek QF-1

* OF SPECIAL INTEREST *

1430 WKEX VA, Blacksburg
per conversation with owner Bob Smith,
CP for 5,000 watts listed in the NRC
Log is dead. No intent to revive.
(Whew! That tower can be seen from my
QTH.) Also, got him to agree to at
least consider running a DX Test next
fall. J.D. and I both tried to get him
to run one this past season. (ed)

1440 WNYG NY, Babylon
4/14 1940 noted in SS. First time ever
heard w/SS, and I pass it every evening
while DXing. (ES)

1580 WMOF NC, Camp Lejeune
4/8 local noted back on the air after
a silent period. First thing noted was
a more "positive / forceful" (but not
pushy) attitude of the ancrs. Format
anncd as "the best in Contemporary
Christian Music." CNN nx on the hour,
satellite wx twice each hour. Slogans:
"Morning Star Radio" & "Morning Star
15-80 WMOF." Still daytime. No
explanation or newspaper reports about
period off the air. (MH)

* THE REPORT *

640 WHLO OH, Akron
4/12 0250 MM, ads, "Contemporary
Christian music for Akron, Canton, and
NE Ohio, this is WHLO." (ES)

690 WPDQ FL, Jacksonville
4/6 1950 ads, "The Big One, the Mighty
690, news-talk radio WPDQ." Gone at
1800 power/pattern change. (ES)

710 WFNR VA, Blacksburg
4/18 1950 Atlanta Braves baseball. ID
at 2000, tune to "Kool 100" 100.7 FM to
hear rest of game. (DLR)

780 CFDR NS, Dartmouth
4/12 1740 concert tix giveaway, "All
hit radio CFDR." Rock mx follows. (ES)

830 CFJR ON, Brockville
4/20 1930 lcl items, churches, YMCA,
etc. "A public service of 830 CFJR."
Oldies format, o/u WMO. (ES)

870 ?WHCU? NY, Ithaca
4/21 1940 presumed the one with Mets
baseball. (ES)

940 WMIX IL, Mt. Vernon
4/26 0230 MM, w/promo for Larry King
Show weekdays on "AM 940 WMIX." Into
Jim Bohannon. Fair. (ES)

960 WFIR VA, Roanoke
4/17 2230 up briefly w/ID: "WFIR,
Roanoke's news station. Into CBS nx.
(DLR)

" WRMS NC, Kinston
4/18 2015 C&W mx, lcl spots. (DLR)

980 WMRC DC, Washington
4/14 1945 medical phone in show with
Dr. Merken. (ES)

990 WNTY CT, Southington
3/30 1815 laser sounder, "Digital 990"
"AM 990 WNTY." (ES)

1000 WRAR VA, Tappahannock
4/15 1946 AC mx. "AM 1000 WRAR."
Surfaced then sank into muck. Darn it,
I wanted this one! Maybe next time.
(ES)

1020 WKZE CT, Sharon
4/22 1929 s/off 1929:30 w/"Join us to-
morrow for more of your favorite music.
Listen to our sister station WKZE-FM
98.1 for continued fine prgmmg. (ES)

1030 WNTL MD, Indian Hill
4/6 1930 AA programming, AA tx, middle
eastern mx, into 1945 s/off. "Stereo
1030 AM Superstation WNTL." (ES)

1050 WLON NC, Lincolnton
4/21 2035 Charlotte Hornets basket-
ball, lcl spots, ID. (DLR)

1100 WHLI NY, Hempstead
4/22 2000 s/off w/SSB by YL vocal &
"This is WHLI Hempstead-Garden City,
NY. Have a pleasant good evening. (ES)

1130 KAAB AR, Batesville
4/21 2228 very strong w/REL tx. ID w/
s/off anmts at 2230 (but did not s/off
at this time.) Many lcl spots, frequent
"KAAB AM 1130 Batesville AR" IDs.
Finally off at 2236. (DLR)

1150 WHUN PA, Huntingdon
4/26 0245 MM, w/C&W mx. "WHUN." "Great
songs from the past and today's hot new
country." AN now? (ES)

1160 WBND KY, Florence
4/20 2010 now here, ex 1180. IDs "The
Blend: Cincinnati's music station."
Into NOS mx. (DLR)
(so BND stands for "blend, not "band"
as I surmised. -ed)

1180 *WHAM* NY, Rochester
4/26 0200-0300 noted w/OC and TT. (ES)

1220 WFAK VA, Falls Church
4/14 1925 REL tx, into community
calendar at 1929. "AM 1220 WFAK Radio,
Falls Church VA." (ES)

1420 WCOJ PA, Coatsville
4/22 2205 w/Phillies baseball. (ES)

1470 WTTR MD, Winchester
4/5 1955 wx for Carroll County, into
ABC nx at 1800. This stn mentions
Carroll County all the time. If you
hear Carroll County mentioned, it's
them. (ES)

" WSRO MA, Marlboro
4/5 1955 mixing w/WTTR. "This is your
good music station, WSRO." Into CNN nx
and local items. (ES)

" WMMW CT, Meriden
4/9 1945 NOS format. "Middletown's
musical memory station is 'Stardust
1470' WMMW." (ES)

1520 WKZQ SC, Myrtle Beach
4/6 1811 surfaced from muck for 30
seconds. "Right here at your home of
rock and roll, WKZQ." (ES)

1540 WMDO MD, Wheaton
4/7 1945 SS programming w/"Radio
Mundo" ID. (ES)

1550 WARD PA, Pittston
4/10 1930 w/Birmingham-Charlotte AAA
baseball game. AAA games noted here
other days at this time. (ES)

" WCLY NC, Raleigh
4/12 0318 MM. Continuous GOS mx. "Your
24 hour gospel station, WCLY. Gospel
all the time." No way this was 7 watts!
(ES)
+ 4/26 0315 MM, w/GOS mx, ads, ID.
Becoming a MM pest here. Definitely
running 1 kW, no way 7 watts. Permanent
power increase? Hope not. (ES)
(same here, Elliot. I will have to set

the alarm one MM and see about this
one. The pest here has been 250 watt
WMDH-IN. -ed)

*** unID HELP ***

J.D Stephen's 1570 unID is WZCC, New
Albany IN. They ID as "Inspiration
Radio" and there is an "Autorama" in
Louisville, KY, just across the Ohio
River. They are also // 1470 WBUL
Sheperdsville KY. (DLR)

*** EDITOR'S DESK ***

Thanks to Mike, Elliot and David for
their support this time.

Another reason why Florida needs a
clear channel station - the Marlins.
This team will get no chance to develop
a fan base outside Florida via it's
radio network, while the Rockies will
be heard over two thirds of the nation
on KOA.

An Atlanta Braves schedule I picked
up says that "all games are carried on
radio telecast (???) by WGST/WPCH-FM
and a network of 200 stations in the
Southeast." I take this to mean that
WSB is not the flagship station
anymore. Thus, the Braves will no
longer have a widely heard clear
channel voice, either. 73 de LLH. :-)

FREQUENCY OF THE MONTH: JUNE 1550 kHz

*** DX RECORDS ***

TOMBSTONE TERRITORY: 1240 kHz

Phil Bytheway	35/14
Robert Wien	33/22
Bruce Portzer	32/16
Shawn Axelrod	30/0
Ron Musco	25/23
Pat Martin	25/21
Elliot Straus	25/9

YEAR ROUND COVERAGE OF GEORGIA TECH SPORTS ON RADIO WCNN ALL NEWS 680 AM

13

IRCA DX TECHNIQUES

LEONARD HYDE - 1805 WHIPPLE DR #26 - BLACKSBURG VA 24060-2436

Elliot Straus on TARGET DXing: "Most of my earlier years at DXing were spent just slowly going up and down the dial, depending on my experience to recognize when I had come upon a new station, or one that I needed to verify. This technique served me well for many years, but as the totals grew, I realized that my technique had to change. I was spending a lot of time IDing stations previously verified.

I decided to take a tip from my shortwave DXing, and apply it to BCB DX. Shortwave DXing covers so many freqs on many meter bands that it's virtually impossible to tune around, and hope you just luck into something.

What I did was take 5 x 7 index cards, made one for every band, for every hour of the day, and listed the stations I wanted to try for. I subscribed to as many publications as I could, and joined 3 DX clubs. Every time someone on the East Coast reported a station that I needed, I would note the details on the appropriate card. That way, anytime I sat down at the dials I had specific targets to try for. If nothing on my target list was in, I would scan the band that had the best conditions at the time. My next question was: how to use this technique for BCB?

It's not as easy on BCB. Someone 50 to 100 miles away may report a station, and for you, it could be impossible due to an interfering station. I do a lot of SSS/SRS DXing, so what I did was go through the M Street guide, noted every freq that did not have a dominant station near me, and came up with 15 mostly wide open freqs. Then, I noted all the stations east of the Mississippi with a non directional pattern and at least 1000 watts. This gave me a list of possible SSS targets for the freqs listed.

Now at SSS, I concentrate on these 15 freqs, so I save a tremendous amount of previously wasted time hunting around. I did the same thing for MMs: listing all 10 kW or more stations in the states I need, and checking these freqs every MM. Sometimes I feel like an idiot checking for HI and AK, but one never knows, does one? I figure that a good DXer makes his or her own luck.

As for SRS DX, I went back to my 15 relatively QRM free freqs, and using the NRC Log, made a list of stations on each freq that s/on at 5, 5:30, or 6 AM. Then, at 4:55, 5:25, and 5:55 I zap back and forth between the most likely freqs looking for s/ons.

I think you should check band conditions as often as possible. Make a list of key stations for each period: SSS, SRS, evening, and MM. For example, for evening DX, I have a list of key Canadian, Western, LA and TA stations that I check for, to see about conditions to those areas. This can alert me to unusual conditions. I can get up on MM, and within 5 to 10 minutes, know whether to DX or go back to sleep. (I'd rather DX - hi, but I won't fight lousy band cx.)

It's also a good habit to keep track of the propagation forecasts from WWV at 18 minutes past the hour. Note the indices and comments in a notebook every day at a specific hour, and then make a note of what, where, or how DX was on that day. Pretty soon, you'll be able to get a good idea of what might be going on before you fire up the rx. For instance, if the solar flux is high, and the A and K indices are low, with a quiet geo-magnetic field, I will spend a lot more time seeking DX than if the opposite were true. At times of poor propagation cx, I'll just run through the appropriate check list, and call it quits.

As I mentioned before, a good DXer makes his or her own luck. If you are well prepared and ready to take advantage of unusual cx, you'll be surprised how "lucky" you can get."

From Phil Bytheway: "Dataworld, PO Box 30730, Bethesda MD 20824 has recently announced the completion of the 2nd edition of the 'Dataworld AM Allocation Map Book.' The 11x17 book contains two maps for each of the AM frequencies (540-1600.) The day time map depicts the predicted daytime groundwave contours using FCC soil conductivity and standard pattern calculations for all stations on that frequency (class I: 0.1 mV/m, class II-IV: 0.5 mV/m.) In addition, the 0.025 mV/m interfering contours are shown. The night time map shows the horizontal radiation pattern (class II, III & IV) or protected skywave coverage (class I: 0.5 mV/m.) Unprotected AM stations are not included. Certain Canadian & Mexican stations near the border are included where appropriate. The maps are laser printer generated, and very easy to read. These could be used by DXers to determine whether or not certain stations beam signal in their direction day or night.

The AM Map book is being offered for \$350 at the above address, or by phone at (800) 368-5754.

Dataworld also offers a wide variety of FCC radio/TV data services.



Western DX Forum ★ ★ ★ ★ ★

Reid Wheeler 5910 Boulevard Loop SE Olympia, WA 98501

Deadline: Saturday 2 weeks before publication

Patrick Martin, P.O. Box 843, Seaside, OR 97138-0843

[4/21] Hi everybody. Recently I spoke to a CE at Shaw Radio in Alberta, Canada. He is the CE for several stations for both Shaw and Nor-Net. A great guy that has been QSLing a lot of the stations for me. He told me about a current test going on in Toronto for Digital Radio, operating in the 1.5 GHz band. Apparently that is the frequency range the CRTC and Canadian Government has decided on. Even though the U.S. will be using the "Expanded Band" of 1610-1700 KHz, Canada will not. They will be using the 1.5 GHz band to get good quality without FM Multipath. The first Digital station should be on full time in 1994-95. The idea is for all Canadian AM stations to simulcast on both MW and the Digital Band for a time, then will be only on the Digital 1.5 GHz band. He said all Canadian MW stations should be operating in that band in the next 10-15 years. If that is the case, then hearing Canadian stations great distances will be a thing of the past, but the band will open up as most Canadian MW stations are NSP these days. I presume the CBC stations will be some of the first. At this time there are no plans for Canada to use the MW band after the change to Digital. It will be quite the interest in the future, with the U.S. using the expanded band and Canada on other frequency range. Speaking of Digital Radio - recently during the NAB Convention in Las Vegas, NV, a Digital Test was done. I received a call from Larry Godwin asking me if I had heard an UNID Classical mx signal on 1660 KHz. I hadn't at the time, but when I tuned in, there it was. Not bad. At the time I didn't know what it was. Later that evening they were playing Rock and C&W music and IDed, using KENO-1460's aux studios. I called the NAB the following MM and was told that this was a test running from an old tower of a dark station, about a 200 foot one, using the KENO's aux studio. They were running 20-25 watts. So I sent off a report to the NAB. Hope they QSL. It was interesting hearing the test transmission as the signal was rather fadey, much like SW. I wonder if the signals up that way will fade more than the lower frequencies. In QSLs lately, I received QSLs from KWNC-1370-Quincy and KKPL-630-Opportunity, WA. I now have all WA stations confirmed, along with all OR and HI stations, except for a call change or two. Now I am working on ID & MT stations. I don't need many ID stations and a few more GYers mainly from MT, mostly in the eastern part of the state. Good DX to all. 73s, Patrick.

Nick Hall-Patch, 1538 Amphion St, Victoria, B.C. V8R 4Z6

I missed the anniversary issue, but had a good reason as the traditional belated re-intro will show. I'm in my 40's, married and with two daughters; DXing does not seem hereditary here... Although I've been DXing MW on and off for the last 25 years, my main interests in recent years has been overseas DX and technical matters. Overseas DX has been enhanced by antenna experimentation, particularly on Beverage DXpeditions to various locations, and in the design and building of my own receiver. My technical interests have also led to a career change. I've spent the last couple of years qualifying as an electronic engineering technologist (equivalent to an associate engineer in the U.S.), and my excuse for not contributing to the anniversary issue was my final exams. I'm now working at an oceanographic research institute, assisting in design, building and maintenance of oceanographic instrumentation, which will probably cause me premature brain failure, but it'll be fun while it lasts. Actually, one of my big DXing experiences occurred while working for the institute on a summer job last year. As mentioned in previous editions of DX Monitor, I spent three weeks out in the north Pacific logging Sri Lanka-1548 and other good stuff, while tossing instruments overboard to justify the DXpedition. I'll be on a similar venture in late May, but doubt the DX will be quite so interesting. Although I've not been able to contribute much to IRCA in the last few years, I've really enjoyed the efforts of those who have been contributing. For a "small" club, there's been a lot of worthwhile material in DX Monitor. As well, it looks like the Billing convention is going to be one of the most interesting in years, which makes me sorry that I'll be unable to attend. Best of DX to everyone.

Gary Larson, 2806 Lincoln, Burbank CA 91504

[4/14] Recent change here is 1470 KUTY is now all Spanish. Old format was satellite C&W. Found out about this in LA Times and sent copies of story to Reid and Ralph as well as RW. Reason for change was that Spanish speaking listeners had no local to serve them. I'm sorry to see country go. Also and FM (103.1) in area plays country and sounds better in stereo. Called Pres/GM Dale Ware and he says an FM in works for Antelope Valley area. A minor addition here is another number of 818 841-2800. Still have 846-5540, too. Not much else going on. 73.

Mike Sanburn, P.O.Box 1256, Bellflower, CA 90707

I just received the sad news regarding the passing of fellow IRCA member and former longtime WDXF editor, Ric Heald. I guess we all thought that someday he would re-appear in the pages of DX Monitor to share his wit and wisdom with us again, but it wasn't to be. He sure contributed a lot to our club for many years. I'm glad I had the opportunity to meet him and talk a bit during the '89 convention. He really seemed to love BCB DXing and country music. It was unfortunate that during the waning days of his editorship a couple of people were giving him an undue hard time. I'm sure that most everyone of us really liked Ric, and are grateful and appreciative for the fine job he did, and will miss him. There's no question that he helped shape our club by adding a unique literary quality. It is my hope that our upcoming convention in Billings will be dedicated to Ric. Possibly the club can establish some type of award such as the T.V.A. bearing his name. As the note said, we should all remember him in our prayers and our hearts. 73 and best wishes to all - Mike Sanburn. *[Although I only met Ric a few times when he was in the Olympia area, we did have time to do a little DXing and a lot of talking about both DX and life in the late night hours. It was his enthusiasm and love for both the hobby and the IRCA that convinced me to volunteer for the WDXF editorship when he was no longer able to do it. We will all miss him - rcw]*

Larry Godwin, 2390 Clydes Dale Ln, Missoula, MT 59801

(406)-721-5131

[4/26] Greetings! I DXed more than usual in April and loved it! It was fun hearing the experimental KDAB-1660; see DXR for details. I finally set up a database for my "stations heard," which total right about 200. I ordered a KIWA loop which should be shipped around June 1. Craig Siegenthaler, KIWA President, will have a demo model at the convention in Billings, and will also offer attendees a discount! Rick Evans - the QVC AM/FM radio will pick up any radio station (provided you're near the transmitter site). I have a new problem with splatter (not a harmonic) from KLCY-930 around 680 and 1180. The CE says he's not violating FCC rules because the unwanted signals don't interfere with market area stations. Is this true? Tom Bryant - re antennas, I believe the best ferrite-rod model is the Quantum Loop, although my Sanserino air-core box loop outperforms it. It's not long until the convention; see you there! 73.

John C. Johnson, 979 Neptune Blvd, Billings, MT 59105-2129

(406)-259-9210

[4/26] I read the FCC has now started accepting applications for the expanded AM band. Priority is being given to AM daytimers in cities of more than 100,000 people with no full-time AM or FM station. Many of you got a chance to log the NAB Convention experimental DAB station on 1660 in mid April. Broadcasting from Las Vegas, NV with the calls KDAB. I kept trying for them, but never did hear this 1660. A recent "Radio World" featured an article on KNHN-1340 Kansas City, KS testing AM synchroncasting with their recently purchased KSEK-1340 Pittsburg, KS. Listeners in Kansas City will be able to drive 200 miles to the Oklahoma border and continue picking up programming. I'm finding enjoyment in Digital Music Express service offered by the cable TV people here. Push a button on the remote control and you get information on song title, artist, album, number, etc. No spots, no announcers. I wonder what effect this will have on broadcasters? BILLINGS '93! 73, John-John.

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Hearing It Through The Grape Vine

SHAWN AXELROD, 30 Becontree Bay, Winnipeg, MB R2N 2X9 Canada (204) 253-8644 before 2300 E.L.T.

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 YE OLDE EDITOR

FREQUENCY OF THE MONTH 540 KHZ

LEONARD HYDE FROM CALIFORNIA

KVIP Redding Ca CBK Regina SK

LEONARD HYDE FROM EAST COAST

WETC Zebulon NC	WRIC Richlands VA
CJSB Ottawa ON	WGTO Cypress Gardens FL
CBEF Windsor ON	WWCS Canonsburg PA
WSTH Columbus GA	XEWA Monterrey Mexico

PATRICK MARTIN

4QL Longreach Aust.	Good on DU AMs	JOJG/JOMG JAPAN	Good on Asian AMs
2AP Apia W Samoa	Semi reg on DU AMs	XEWA S.L.P. Mexico	Reg most AMs
XETIN Tijuana Mexico	Reg a LSS	HJKA Bogota Columbia	Often in late 60's
CBT Grand Falls NF	Once in late 60's	CBK Regina SK	Reg until S/OFF
CBXQ Ucluelet BC	Reg day/nites	KIEZ Carmel Valley CA	Often in evening
KJOI Costa Mesa CA	Once during Test	KVIP Redding CA	Reg at SSS
KNOE Monroe LA	Rare best in 60's	KNAK Delta UT	Occasionally

MIKE SANBURN

CBK Regina SK	Reg nites	XEWA S.L.P. Mexico	Reg nites
KDLT/KNAK Delta UT	DX Test '74 & '93	KDX Bellflower CA	Pirate Stn '84
XETIN Tijuana Mexico	Days thru KOJY	KSHO/KKGO/KKJZ Hesperia CA	Local
KJQI/KOJY Costa Mesa CA	Local		

KARL ZUK

WLIX Islip NY	SSS/SRS	CBEF Windsor ON
CJSB Ottawa ON	Powerfull at nite	

SHAWN AXELROD

CBK Regina SK	Dominates to S/OFF	XEWA Monterrey Mexico	Dominant nites
CJSB Ottawa On	some nites	CBEF Windsor ON	Some nites
KWMT Fort Dodge IA	Once in CBK SP	KDFT Ferris TX	Once in CBK SP
KNAK Delta UT	DX test		

STATE OF THE MONTH NEW YORK

MIKE SANBURN

880 WCBS New York	KRVN SP '70s	1180 WHAM Rochester	KOFI SP 70's
1520 WKBW Buffalo NY	KOMA SP IN '70's		

PATRICK MARTIN

550 WGR Buffalo	Once in 60's	660 WNBC New York	Reg nites
710 WOR New York	Occ in '60's	770 WABC New York	Reg 60-80's
880 WCBS New York	Reg 60's 70's	1010 WINS New York	Once in '60's
1050 WHN New York	Occ in 06's	1130 WNEW New York	Occ in 60's
1180 WHAM Rochester	Occ on MM	1190 WLIB New York	Once in 60's
1390 WFBL Syracuse	MM's 60's,70's	1560 WQXR New York	Often on Bev.
1560 WQEW New York	Often on east beverage		

More to come so read on. Including bandscans from Billings Montana and New York. Bandscans are always welcome here as are any comments on the column. So read on and enjoy.

NEW YORK CON'T

LEONARD HYDE

550	WGR	Buffalo		570	WMCA	New York City	
870	WHCU	Ithaca		1050	WSEN	Baldwinsville	
1050	WKSQ	New York City		1100	WHLI	Hempstead	
1280	WADO	New York City		1310	WTLB	Utica	
1390	WRIV	Riverhead		1600	WRML	New York City	
1620	WJDI	Unknown	Pirate	1620	WRMR	Monticello	Pirate

SHAWN AXELROD

550	WGR	Buffalo	Occ nites	570	WSYR	Syracuse	Once nite
660	WFAN	New York	Occ nites	770	WABC	New York	Occ nites
810	WGY	Schenectady	CKJS SP	870	WHCU	Ithaca	Once at SR5
880	WCBS	New York	Rare nites	930	WBEN	Buffalo	Rare nites
970	WEBR	Buffalo	Once	1180	WHAM	Rochester	Reg nites
1520	WWKB	Buffalo	Reg nites	1560	WQEW	New York	Occ nites

BILLINGS MONTANA AM FM TV BANSCAN- via JOHN JOHNSON

730	KRXL	Religius	790	KGHL	Country and Western
910	KBLG	News talk	970	KCTR	Country and Western //KCTR FM
1240	KMAY	Under going a change in May	1490	KBSR	Rock oldies (Sat/Sun MM are SS

91.7	KEMC	NPR,Classical	93.3	KYYA	AC Y-93
94.1	KRXX	Classic rock	95.5	KDWG	Country and Western "The dog"
97.1	KZLS	60-70's rock oldies "The Bear"	98.5	KIDX	Lite rock oldies Magic 98
102.9	KCTR-FM	Country and Western "the Cat"	103.7	KOHZ	EZL

2	KTVQ	CBS affiliate	6	KSVI	ABC Affiliate
8	KULR	NBC Affiliate			

NOW when you get to Billings for the convention you will know what to listen for!!!

BAND SCAN FROM KARL ZUK CROTON ON HUDSON NY

530 WNYF 574 NY Tarrytown:two TIS stations on either side of the Tappan Zee Bridge synchronized together with ultrastable crystals and fed the same program via phone lines. 3 DTMF tones used to signal flashing light signs give these stations a unique identifier. 10 watts each.

530 CIAO ON Brampton "Chow Toronto's Multicultural Radio" Strong nights. Fights for frequency with TIS stations.

540 WLIX NY Islip "Christian 54" very strong signal for 250 watts. transmitter located on Fire Island right on ocean. 7 watt PSA/PSSA easily heard.

540 CJSB ON Ottawa "54 Rock" Rock master blaster. Strong nights.

550 WJMW PA Bloomsburg (Wilkes-Barre/Scranton) Country, days.

560 WEAZ PA Philadelphia FM simulcast "EZ-101" MOR pop standards.

570 WMCA NY New York Christian and time-sell.

580 WHP PA Harrisburg "Radio 58 WHP" MOR/standards CBS news

590 WEEI MA Boston all-news

590 WROW NY Albany "Radio 59 WROW" MOR

590 WARM PA Scranton

600 WICC CT Bridgeport "Service 60 WICC" Oldies days, talk nights.

610 WIP PA Philadelphia all sports

620 WSKQ NJ Newark "El Super Kah-Coo" MOR en espanol.

630 WPRO RI Providence

640 WNNZ MA Westfield (Springfield-Hartford) Adult pop.Days.

640 WHLO OH Akron "Contemporary Christian and more" Nights.

650 WSM TN Nashville Hard to pull in: WFAN sloppy! Nights.

660 WFAN NY New York "The Fan" All-sports. Mets baseball.

670 WMAQ IL Chicago Nights.

680 WRKO MA Boston

690 WADS CT Ansonia Ethnic/time-sell. Financially instable.

700 WLW OH Cincinnati Days and nights.

710 WOR NY New York "Radio 710 WOR" Talk.

720 WGN IL Chicago nights.

730 CKAC PQ Montreal FF MOR

730 WACE MA Chicopee religion

18

740 WGSN NY Huntington Adult standards
740 CBL ON Toronto CBC EE net
750 WSB GA Atlanta
750 WWAX PA Olyphant "All-news WWAX" also Business Radio Network
760 WJR MI Detroit News-talk Detroit Tigers baseball
770 WABC NY New York "Talkradio 77" Yankees baseball
780 WBBM IL Chicago CBS all-news
790 WAEB PA Allentown
790 CIGM ON Sudbury "All-star Country AM 790 CIGM"
800 WLAD CT Danbury Pop standards
800 CKLW ON Windsor "The Big 8" is now talk for the ladies!Aaaa!
800 TWR NA Bonaire Trans World Radio and R. Nederland. Strong.
810 WGY NY Schenectady Full service, CBS news "81-WGY"
820 WNYC NY New York NPR and APR. Also Christian Science Monitor.
830 WCCO MN Minneapolis Full service CBS news hourly
840 WHAS KY Louisville Talk and sports
850 WREF CT Ridgefield "The Reference AM-85" Nostalgia-big band.
860 CJBC ON Toronto CBC FF net
860 WSBS MA Great Barrington light pop and rock. 250w CH 3.9w PSA
870 WHCU NY Ithaca Cornell University CBS news
870 WWL LA New Orleans Full service, CBS news
880 WCBS NY New York "Newsradio 88" shares tower with WFAN 660
890 WLS IL Chicago days and nights ABC O&O
900 CHML ON Hamilton oldies/pop days and nights
900 WDVV PA Philadelphia gospel
910 WRKL NY New City Full service/pop rock standards
930 WPAT NJ Paterson "Easy-93" Instrumentals/light pop L.King 3pm
940 WINE CT Brookfield-Danbury CNN Headline News & local talk
950 WHVW NY Hyde Park SMN Real Country. Home-brew country 6am-530p
WTZA ch.62 news at 5:30p Owner: Al Weiner of RNI fame
950 WPEN PA Philadelphia Nostalgia
950 WROL MA Boston Religion/time-sell
960 WELI CT New Haven Full service/pop rock standards
970 WWDJ NJ Hackensack "97-DJ" Religion
990 WNTY CT Southington "AM-99 WNTY" SMN rock automation
1000 WLUP IL Chicago Whatever it is this week!
1010 WINS NY New York "All news 1010 WINS" Group W Westinghouse
1010 CFRB ON Toronto heard nightly in WINS null.
1020 KDKA PA Pittsburgh talk, days and nights
1030 WBE MA Boston talk, days and nights
1040 CHR8 PQ Montreal/St.Jean rock
1040 WHO IA Des Moines regular at night
1050 WEVD NY New York ethnic and talk. My strongest signal.
1060 KYW PA Philadelphia Group W news
1070 WKMB NJ Stirling country
1070 CHOK ON Sarnia oldies
1070 CBA NB Moncton CBC EE net Atlantic time zone
1080 WTIC CT Hartford Full service. Red Sox baseball
1090 WBAL MD Baltimore Full service, days and nights.
1100 WHLI NY Hempstead Nostalgia, MOR
1100 WWVE OH Cleveland pop music
1110 WTBO NY Warwick Adult/contemporary
1110 WBT NC Charlotte Full service. Huge signal at night.
1120 KMOX MO St. Louis CBS news, talk. Surprisingly strong.
1130 WBBR NY New York "Bloomberg News Radio" What an ego!
1140 WRVA VA Richmond
1150 WCNX CT Middletown talk, local news.
1160 WJJD IL Chicago
1170 WWVA WV Wheeling religion and country music
1170 WRWD NY Cornwall just began simulcasting FM with JSA Country.
1180 WHAM NY Rochester full service
1190 WLIB NY New York Urban talk, Caribbean music.
1190 WOWO IN Fort Wayne top 40/sports
1200 WOAI TX San Antonio
1210 WOGM PA Philadelphia sometimes "Oldies 98" simulcast/Phillies
1220 WGNV NY Newburgh CNN Headline News
1220 WKNR OH Cleveland all sports
1230 WFAS NY White Plains automated nostalgia/local talk
1240 WBAB NY Freeport simulcast of "102.3 WBAB" rocker
1250 WMTR NJ Morristown same nostalgia service as WFAS/also talks
1260 WBNR NY Beacon oldies
1280 WADO NY New York Spanish "Waddo Radio"

Geomagnetic Indices

+	high point	mas	major storm	SA	solar activity
-	low point			spe	satellite proton event
GEO	geomagnetic activity	mis	minor storm	ss	severe storm
maf	major flare	pca	polar cap absorption		

Geomagnetic Summary March 3 1993 through March 29 1993

Date	FLUX	A	K	SA	GEO	ETC
3/ 3	151	19	4	low	unsettled-mas	swa
4	167	20	2	moderate	quiet-active	spa/swa
5	165	5	0	low	quiet	swa
6	167	8	3	high	quiet-unsettled	maf/swa
7	153	11	3	low	quiet-unsettled	swa
8	146	19	6	low	unsettled-ss	-
9	143	51	2	low	mas-unsettled	mas/swa
10	149	9	2	low	quiet-unsettled	mas end/swa
11	150	29	3	high	unsettled-mis	mis/maf/swa
12	161	20	5	high	unsettled-active	maf/spe/swa
13	142	23	2	low	unsettled-active	spe end/swa
14	136	16	4	low	quiet-active	swa
15	131	39	4	moderate	unsettled-mas	mis/swa
16	122	23	3	low	quiet-active	swa
17	124	17	4	low	quiet-active	swa
18	127	14	1	low	quiet-active	swa
19	135	9	4	moderate	quiet-unsettled	swa
20	128	14	3	moderate	quiet-active	swa
21	131	19	2	low	quiet-active	swa
22	128	19	2	moderate	unsettled	swa
23	121	9	5	low	quiet-active	swa
24	115	27	4	low	unsettled-mis	swa
25	117	14	3	low	quiet-active	swa
26	117	8	2	low	quiet-unsettled	swa
27	122	9	2	low	quiet-unsettled	swa
28	126	11	3	low	quiet-unsettled	swa
3/29	129	13	3	moderate	quiet-active	swa

Word was received last week of the passing of Ric Heald on April 6 1993. Ric was best known to IRCA members as the editor of Western DX Forum, a column he assumed responsibility for on April 12 1975 (Vol 11, #28)... continuing on until illness prevented him from continuing a couple of years ago. Ric also served several terms on the IRCA Board of Directors. In 1989, Ric hosted IRCA's annual convention in Sacramento (I had a great time - thanks Ric). While living in the San Francisco area, he formed the Bay Area Radio Freaks, a local group of DXers that had organized meetings and DXpeditions. He was an active and enthusiastic member who devoted many hours of his personal time promoting club activities and will be missed.

A DXers TECHNICAL GUIDE

Now in its 2nd edition, this 120 page book answers questions on receiver and antenna theory, how to make them work better, what audio filters and loop antennas will do for you (and hints on their construction), how to build a beverage and phasing unit, and much more. Only \$5.50 for IRCA members, \$6.50 for non-members (overseas airmail add \$2.50). Order your copy today from: IRCA Bookstore, 9705 Mary Ave NW, Seattle WA 98117

NEWS RELEASE

For Immediate Release

Contact: Harry Helms

Antenna Expert Joe Carr Writes A "Cookbook" Of His Favorite Antenna "Recipes" For Shortwave Listeners

Joe Carr, operator of ham radio station K4IPV, is widely recognized as one of the world's leading authorities on practical antenna systems for shortwave radio enthusiasts. His monthly columns in *Popular Electronics* and *Popular Communications* magazines are among the most popular features in those publications, and his 42 previous books for such publishers as McGraw-Hill, Howard Sams, and TAB Books have sold hundreds of thousands of copies around the world. Joe has now used his technical expertise and writing skill to fill a major gap in radio books—a collection of antenna designs specifically for receiving purposes from longwave to 30 MHz.

The result of his efforts is *Joe Carr's Receiving Antenna Handbook*. Unlike some other antenna books for shortwave listeners, this is not a warmed-over collection of slightly adapted ham radio antenna designs. Nor is it a too-basic "how to build a dipole" type of book. Instead, Joe has written a book aimed at shortwave listeners and other radio hobbyists interested in maximizing the potential of any shortwave receiver. In thirteen chapters, Joe discusses elements of antenna theory, such as the angle of arrival of radio signals and response patterns, that are important to receive-only antennas. He discusses the trade-offs and compromises inherent in any real-world antenna system. There is extensive coverage on construction techniques and safety considerations for antenna installation. Joe even devotes an entire chapter to grounding techniques and lightning protection.

The bulk of *Joe Carr's Receiving Antenna Handbook* deals with wire antenna designs. Dipoles (single band, multiband, and stacked), doublets, Zepps, Vee beams, Franklin arrays, slopers, rhombics, full wavelength loops, and bobtail curtain arrays are just a few of the designs Joe discusses in detail. The operating theory behind each design is given along with construction details and formulas to determine the proper dimensions of each antenna for a desired frequency range. Fans of low frequency DX will especially appreciate Joe's extensive discussion of Beverage antennas, including phased and steerable notch designs.

Joe Carr's Receiving Antenna Handbook also describes vertical antennas for receiving purposes, and shows how to phase different vertical antennas together to produce directional receiving patterns. Joe also tells how to build directional Yagi and quad antennas for the shortwave broadcasting bands. And for longwave and AM broadcast band DXers there is an entire chapter devoted to indoor loop antenna designs.

The book discusses the pros and cons of active antennas and other solutions for limited space or other difficult situations. Accessories, such as antenna tuners and preamplifiers, are covered in detail. Finally, Joe describes the different types of transmission lines in use and shows how to use instruments such as noise bridges and SWR analyzers to determine the true resonant frequencies of a receiving antenna.

Joe Carr's Receiving Antenna Handbook has a list price of \$19.95, and is available from leading SWL and ham radio book and equipment dealers. It is also available from HighText for \$19.95 plus \$3.00 shipping by calling 1-800-888-4741, or by mail from P. O. Box 1489, Solana Beach, CA, 92075.

Ralph - How about these antennas?

73, Harry.

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Geomagnetic Summary March 30 1993 through April 25 1993

Date	FLUX	A	K	SA	GEO	OTHER
3/30	129	17	2	low	unsettled	swa
3/31	125	7	3	low	quiet	swa
4/ 1	124	8	2	very low	quiet	-
2	121	5	2	very low	quiet	-
3	117	1	1	low	quiet	-
4	116	26	6	very low	mis-mas	mis 1434
5	119	66	2	low	active-mas	mas
6	-	-	-	-	-	-
7	130	13	1	low	quiet-unsettled	-
8	143	17	2	low	unsettled-active	-
9	136	20	5	low	active	-
10	-	20	2	low	unsettled-active	-
11	119	9	4	low	quiet-unsettled	-
12	103	11	2	low	quiet	-
13	97	25	4	very low	quiet-mis	-
14	92	17	4	very low	quiet-active	-
15	88	26	4	low	unsettled-active	-
16	90	12	2	low	quiet-active	-
17	96	8	4	low	quiet-unsettled	-
18	106	16	3	high	unsettled-active	maf 1950
19	111	9	3	low	quiet-unsettled	-
20	119	23	4	low	unsettled-active	-
21	119	25	4	low	unsettled-active	-
22	117	15	2	moderate	unsettled	-
23	122	9	3	low	quiet-unsettled	-
24	129	7	2	low	quiet	-
4/25	125	13	1	low	quiet-active	-

Flux - Ottawa 10.7 cm (2800 Mhz) radio flux observed at approx 1700 UTC.

A - Fredericksburg VA magnetic field monitor 24 Hour index. An A > 30 indicates local geomagnetic storm conditions

K - Fredericksburg VA magnetic field monitor index. 0 - very quiet, 9 - extremely disturbed. There are 8 of these per day, I only tabulate the 0600 UTC one (I usually monitor WWV/WWVH at 0618/0645).

SA - very low - less than 5 quiet regions on the solar disk, fewer than 10 C-class subflares, no important centimetric radio bursts or sudden ionospheric disturbances. Low - between 5 and 10 quiet regions, only C-class subflares, no important centimetric radio bursts or sudden ionospheric disturbances. Moderate - eruptive regions on the solar disk, fewer than 5 M-class x-ray events, important centimetric radio bursts or sudden ionospheric disturbances. High - active regions on the solar disk, several M-class x-ray events, important centimetric radio bursts and strong ionospheric disturbances and/or one or two importance-2 chromospheric flares or X-class x-ray events. Very High - one or more regions on the solar disk capable of producing proton events, one or more chromospheric flares of importance 2 or greater, outstanding centimetric radio bursts (500 flux units or greater), X-class x-ray events and major sudden ionospheric disturbances.

GEO - Quiet - A < 8, K < 3. Unsettled - 8 < A < 16, K < 4. Active - 16 < A < 30, few K = 4. Minor storm (mis) - 30 < A < 50, K = 4/5. Major storm (mas) - 50 < A < 100, some Ks > 6. Severe storm (ss) - A > 100, some Ks > 7.

The above information from the guide to Solar-Geophysical Activity published by NOAA in Boulder CO. I use the information to attempt to discern trends in MW propagation DX conditions in the 27 day solar cycle. Certain DX conditions MAY repeat every 27 days.... phil b

22



An Unamplified Four Foot Box Loop

by Shawn Axelrod

For several years I have been using a three foot box loop that Don Moman put together for me. Although I have been more than happy with its performance, I have been wondering whether a four foot loop might produce either a better signal or deeper nulls. So I set out to build one, using the principle that the less metal inside the loop winding the better.

Parts

--one variable capacitor, 10-365 pF. I got mine from an old radio. (Fair Radio Sales, P.O. Box 1105, Lima, OH 45802, or Antique Electronic Supply, 6221 S. Maple Ave., Tempe, AZ 85263 can supply these as well if you're not interested in paying the new price.)

--one knob for the above. I used a vernier for finer tuning.

--175 feet of wire. I used enamelled 20 gauge wire.

--four end pieces (wire supports). Each is a 7" length of 2x2 finished lumber.

--two cross arms: 45 1/2" lengths of 2x2.

--two braces: 6" lengths of 1x2

--dowel: approximately 40", 1 1/2" diameter

--loop support: 4" length of 2x2

--a loop stand. I used a stand for an outdoor umbrella stand

--suitable length of coax to run from loop to receiver

--a connector for interfacing the loop pick-up winding to the coax; I used a screw-type terminal block

--two 3 1/2" bolts with nuts

--four flat head wood screws, approximately 2" long

I used cedar for the wood in my loop. Measurements may change for other types of finished lumber.

Preparation of the Various Parts

A. Cross Arms

First, drill holes (suitable to thread some of the wire through) 3 1/2" from each end of the 45 1/2" length. Measure 3/4" each side of the center of each length. Shade this area as in Figure C, then cut out the area to a depth of 3/4". The arms can now be fitted together in the same plane.

B. End Pieces

Mark lines every 1/2" across the face of each piece as in Figure A. Cut about 1/8" deep on each line; these grooves will be for holding the loop windings in place. Their width should be just large enough to allow a press fit for the wire which you are using. On the opposite side of each end piece from the grooves, shade the area 3/4" each side of the center of piece as per Figure B, then cut the area to 1/4" depth. This notch should allow the end pieces to fit the ends of the cross arms. Next, drill a hole in the exact center of each end piece suitable for one of the wood screws, and drill an appropriate countersink.

C. Braces

Drill two holes on the flat side of each of 6" long pieces of 1x2. Each should be centered one inch from each end and be a suitable diameter for the bolts you'll be using.

D. Loop Support

Figure F shows the dowel and the 4" long piece of 2x2. Cut a 4" long 1/2 inch deep piece from one end of the dowel to form a notch that the 2x2 piece will sit in. Take the 2x2 and drill a hole through it about 1 to 1 1/2 inches from the top end. This hole's diameter should accommodate the 3 1/2" bolt you will use.

Assembly

A. Loop Support

Take the 4" piece of 2x2 and fit it into the notch on the dowel. Once you are sure it will fit well, glue the two pieces together with a good wood glue. The other end of this dowel should fit into the outdoor umbrella stand and rotate with ease.

B. Mounting the End Pieces

Fit the two cross arms together to form a coplanar X; use wood glue to keep them together. For added strength, put a one inch screw through the center as well. Attach each of the four end pieces to the ends of the cross arms. Insure that they are placed so that you can wind the wire around the outside of the loop as per Figure G. Glue each end piece securely, and use the countersunk wood screws for added strength.

C. Tuning Capacitor Board

Take the 6 inch long piece of 1x2 as shown in Figure D and mount the wire connector one to two inches from the end of the board. Mount the variable capacitor on the underside of the board as shown in Figure D so as to allow the shaft to stick out far enough so that the knob can be attached.

D. Mounting the Tuning Capacitor Board.

Glue this board on the underside of any of the end pieces, i.e. on the opposite side from the grooves. One end will butt against the cross arm, while the end with the capacitor and connector on it will stick out from the end piece. This part of the frame will be the bottom of the loop as in Figure G.

E. Mounting the Braces

Take one of the 3 1/2 inch bolts and put it through a hole in one brace (Figure E), then through the piece of 2x2 attached to the dowel

(Figure F), and finally through the second brace (Figure H). Secure the bolt using a wing nut to make it easier to adjust. Put the dowel into the stand and you now have a rotating and tilting mechanism for your loop. Before attaching the loop to the dowel, you'll likely need to weight the stand; sand worked well for me.

F. Mounting the Loop

Slide the bottom arm of the loop frame between the two braces (Figure G). Find where it will balance best for tilting, then drill a hole suitable for the second 3 1/2 inch bolt at that position. Slide this bolt through the brace, the loop arm and the other brace (Figure H) and secure it with a nut.

G. Pick-up Loop

Drill another hole in the bottom arm of the frame about 4 1/2" from the end piece. One end of the pick up loop wire is fed through this hole to the connector. The wire is then threaded through the holes in the other arms to get back to the bottom arm from where it will run to the other side of the connector. Make sure the pick-up loop is tight.

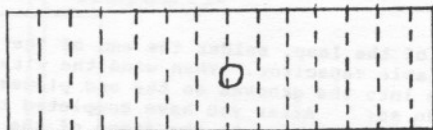


FIGURE A
End Piece Top View

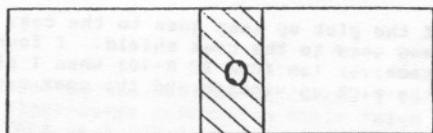


FIGURE B
End Piece Bottom View

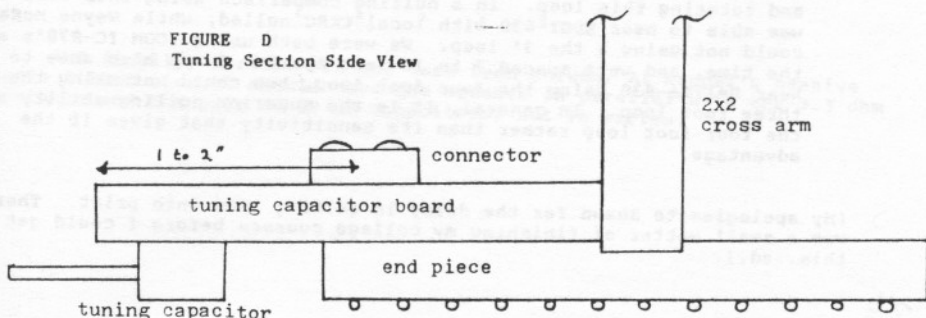
Cross Arm Bottom View

FIGURE C



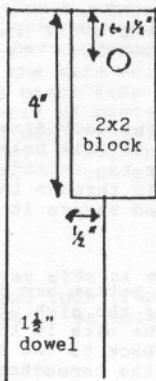
3 1/2"

FIGURE D
Tuning Section Side View



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FIGURE F
Dowel Side View



Dowel Top View

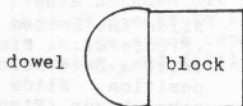
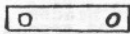


FIGURE E
Brace Side View



H. Winding the Loop

To wind the main coil of the loop, solder the end of the wire to the solder lug on the variable capacitor. Then wind the wire around the loop, pushing the wire into the grooves on the end pieces, keeping the wire taut as you do so. After you have completed the winding, solder the remaining end of the wire to the frame of the capacitor.

I. Attaching the Coax Feed Line

Simply put, one end of the pick up loop goes to the coax center conductor, the other end goes to the coax shield. I found that I got a better match to my receiver (an ICOM IC R-70) when I placed a 680 pF capacitor between the pick up winding and the coax center conductor.

Tuning up the Loop

Attach the coax to your radio using whatever connector is appropriate. Try peaking the loop tuning capacitor on a signal around 1000 kHz. Vary the receiver tuning and readjust the loop capacitor to discover its tuning range. If you cannot tune the top of the band, remove a winding or two. Eventually, you should be able to tune from about 520 to 1700 kHz on this loop.

Conclusions

I have been able to get nulls up to 40 dB on my S-meter by tilting and rotating this loop. In a nulling comparison using this loop I was able to hear WDGY-630 with local CKRC nulled, while Wayne McRae could not using a the 3' loop. We were both using ICOM IC-R70's at the time, and were spaced 7 to 10 feet apart. I was also able to hear Belize-830 using the four foot loop, but could not using the three foot loop. In general, it is the superior nulling ability of the four foot loop rather than its sensitivity that gives it the advantage.

(My apologies to Shawn for the delay in getting this into print. There was a small matter of finishing my college courses before I could get to this..ed.)

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FIGURE G

Antenna Side View

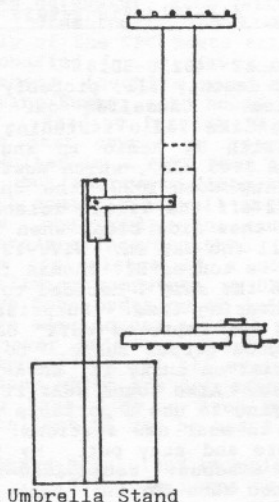
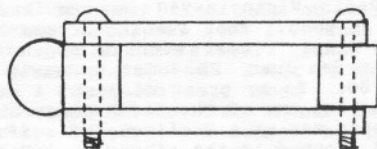


Figure H Braces Seen From Above



* * * * *

And continuing on the subject of loops, I've just received a brochure from Kiwa Electronics concerning their "High Performance MW Air-Core Loop Antenna". This is a 12" diameter circular frame antenna which can be rotated and tilted for maximum nulling, is electronically balanced and features an "antenna bandwidth" control, which controls amplifier regeneration. A bandwidth of less than 2 kHz is claimed with maximum regeneration. There are fine tuning and attenuation controls as well as the main tuning control, and output can be provided to two receivers at once if desired. Power is supplied by a modular AC supply or by a 13.7V battery (current consumption is not specified). This loop looks very elegant mechanically, and a great deal of care seems to have gone into its design. Price is \$330 plus \$10 shipping (\$17 shipping to Canada), with an introductory price of \$280 until April 30th, though I don't know if this will see print before then...Further details from Kiwa Electronics, 612 South 14th Ave., Yakima, WA 98902, or phone 1-800-398-1146 inside the U.S., 509-453-5492 outside the U.S.

* * * * *

And finally, errata: In the last tech column, Al Koppel's passive audio filter circuit should have the speaker in parallel with the 3.3 ohm resistor and the pair of 20 uF capacitors, not in series.

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Richard C. Evans

P.O. Box 21883

Milwaukee, WI 53221-0883

R.C. Watts, 4109 Graf Drive, Louisville, Kentucky 40220-3016

Leaving Panama last month (March), I got deathly ill, probably from eating something contaminated in Costa Rica. Cancelled our shore excursion on Curacao 3/20. Didn't feel much like radio listening, but did hear Radio Victoria-960 out of Aruba with UN Radio in English. Signed off at noon. That evening at sea heard "940 WIN", which must have been WINZ, Miami. Next evening began hearing WOSO-1030, the English news/talk in San Juan, PR. Got up early 3/22 off the Virgin Islands to tape ZBVI-780. To my great disgust, I found that side blank when I got home. I suppose one of the patch plugs not all the way in. WIVV-1370 on the other side was ok. Feeling good again so we toured St. Thomas in the morning and shopped in the afternoon. Back on the ship I decided to tape the five USVI MW stations. Really enjoyed hearing them. Surprised to find C&W on Radio One, WVWI-1000. The "New and Improved WSTX" on 970 seemed to try harder and WGO-1090 had some good gospel music. Lots of local spots and super female DJ with "local jam" on Lucky 13, WSTA-1340. Reef Radio, WRRR-1290 also had good local music. Also found WBMK-1190 in English from San Juan, PR, WIVV affiliate. Trying to use a portable radio aboard a cruise ship is not the easiest way to hear new stations. The serious listening would find a beach somewhere and stay put. My thing was the Panama Canal, so anything I heard was a bonus. Would like to go back and island hop someday, but 10 days was too much for us. Back in KY I found a UPS from WFAN-660. Inside a nice T-shirt and Mets stix to welcome us home.

Ernest Cooper, 5 Athony Street, Provincetown, Massachusetts 02657

Veries received since the last report have come in from local WUOK-1240, WTYR-1550 TN, WANM-TEST-1070-FL, and two Provincetown stations: WLKW-790, and WALE-990. The total comes to 4428. I have just finished filing my "recent" veries which I had put in a folder marked "as-yet unfiled veries". (The pile went back to 1986, so I had quite a bit of work sorting them and putting each one its proper permanent folder.) To cross-prove my verie count, I then took the list of new veries (from 1986) and added the number of veries in each state/province/country folder, and when I added them up, the total comes to 4426! Now I have to find where the discrepancy lies - should be a time-consuming bit of tedious fun! Or should I just split the difference and settle for 4427, hi? Several of the special DX Tests for NRC and IRCA which I heard and reported have so far failed to reply! Did they get overwhelmed with reports, I wonder, or what? The most recent DX Tests logged here were WWJZ-640-NJ, WKTX-830-OH and unn WVCH-740-PA. Reports have also been sent to WTYR-1550-TN, WCLY-1550-NC and WOOD-1240-RI, thru WUOK, which was partially nulled, daytime reception. The only new one reported has been WCLY-1550-NC which is now running AN with GOS music, logged on a tip from NRC's Stan Morss, and report taken on Sun 4/11, no verie as of 4/23. I've done just barely better than .500 this season - people seem to be getting more unfriendly, not just at radio stations, but everywhere in general. It sure is hurting the grand old hobby of DXing and verifying! WWKB-1520-NY seemed to start ANING in SS on St. Patrick's Day, but on Thu. 3/25 they had an AN sports talk show, but then the next morning, back to Spanish. I've been able to hear WMMK-1440-MI behind WVEI several times, but I can't get any verifiable data as yet. A call on 4/21 from Larry Godwin alerted me to a Nevada special tester he was hearing on 1660 (that's right - 1660) that he figured might have a chance of being heard out here in the East, but so far, no go. He said the station would be doing this testing for only a couple of days. Did anybody else hear it, I wonder, out this way? I hope y'all have a great convention in Montana. It's just too far for me for a two day weekend, and besides, it conflicts with "R.B.Hall Day" in Maine, which I

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plan to attend. Many local town bands gather in one place on the last Saturday of June and I went last year and recorded all the music for my WOMR show. Last year it was held in Camden. This year 'tis in Auburn. Have fun & Forward - March!

Mike Hardester, 3118 Gaitway Ct, Jacksonville, North Carolina 28546-6973
Greetings! The 92-93 DX Season went fairly well for me, with the help of the CPC Tests arranged by J.D.Stephens. Two bouts with the flu, preparing for a (Navy) Admin Inspection, and now recovering from nose surgery (ouch!) have somewhat ended the year...just in time for Spring/Summer yard/house work. Still, hopefully I'll have some time to DX. Reading Patrick Martin's 4/24 WDXF report really struck a nerve. The past couple of years, including my last tour on Okinawa (89-90) resulted in a VERY POOR QSL return rate, and here I include not only BCB DX, but shortwave, longwave and utility DX as well. Also, this includes both domestic as well as international reports. A lot of my QSL requests are now only for unusual reception of when I log a new state/province/country. In the same issue, Rick Evans commented about the convenience of a computer, and quite a number of hobbyists are utilizing computers in DX-related matters. In my spare time this year, I've been updating my 3x5 file card of stns heard/QSLed (all modes), and have come across several previously QSLd stns which, for whatever reason, I never made out a 3x5 card for. Someday, I'll break down and get a computer and get all my logs/QSLs entered...who knows how many other QSLs I have which are not entered as such? Enough for now. Try summer DX if you have time - from past experience, between static crashes, some excellent DX can be heard. Very 73. and best of DX de Mike!

Leonard Hyde, 1805 Whipple Drive, #26, Blacksburg, Virginia 24060-2436
Everyone seems to be assuming IRCA has only two options with the publisher situation: reduce the number of issues to 22 a year to Keep Ralph, or turn it over to Paul Swearingen. Not true! There is a third option, which remains" a new publisher, or publishing team, who will keep our current 34 issues a year schedule going after Ralph's announced retirement date of summer 1994. This is not a dead issue or a moot point. The 22 issues a year only came up in the event that no other publisher was found and it had to be changed to keep Ralph on. If someone else comes up with a viable proposal before Volume 32, it does not have to happen! It may be that comments I made in past Forums might have had something to do with this assumption, so I feel obligated to point out these facts. Not to detract from the job that Ralph does as Pub, but we don't really want to go to biweekly DXMS unless we have to, do we? By now, the voting should be all over. Hope we made the right choices, and that those we elected will keep the club on course for the next two years. It is going to be an interesting two years, that's for sure. DX is dead. Got a call from Phil Bytheway this past weekend, who was in NOVA (Northern Virginia) on vacation. Phil is an interesting person. He now has a new respect for us (we?) Right Coast DXers. One of his comments was about how crowded the channels are here. I suggested he tune "the fabulous 640" and then take a trip up to "the wonderful 930" for starters. (Inside joke for Easterners only. Hi) He also promised to send me a report for EDXR, if he heard anything worth sending in. By the way, EDXR is looking great these days, thanks to the guys who send in reports. We sure appreciate all the new reporters, too. Has anyone heard from Neil Kazaross or Karl Zuk lately? Both have been conspicuous by their absence. You are missed, guys. Send in something and let us know you are still among the living. Well, that's enough absent minded drivel from me, so 73 and good DXing. Enjoy your summer, and remember: your DXR editor likes to get summertime reports as well as (maybe even more than) wintertime ones.

Rick Evans, 4841 South 26th Street, Milwaukee, Wisconsin 53221-2937
I made it back from my trip to southeast Alabama in good shape and with another DX log to keep track of. It gives me six different AM logs, of which I consider 4 to be active ones (in a sense). The Alabama log is for Echo, Dale Count, about 30 miles north of Florida and 20 miles west of Georgia. The closest station in the log was at 13 miles in Ozark, with 3 more at 22 miles in Dothan. I spent perhaps 11 hours in all

across 3 days listening, and heard 65 stations in 17 states and DC. Best frequencies were 940 and 1320, both with 3 hrd, followed by 960, 990, 1290, 1500 and 1560, each with 2 heard. Of the 65 stations, I had previously veried 32, mostly while I was living in Gary, ind. 25 had not been heard at my other 5 locations, so they were all a pleasant surprise. The biggest surprise was probably that I only heard one station from the state of Mississippi and none from Pensacola or Mobile. This was all done with a Superadio II and no external antenna. Coming back, we passed thru Houston, Miss., and I spotted the three towers of WCPC-940. They are lined up running east-west, right next to a stream, and looked higher than the clouds. My thought was "No wonder they get heard so well up north". Yes, it was the one Miss. station I heard down there. In Alabama, I generally ran bandscans rather than looking for target stations, and didn't bother hanging around on stations which were running programs (such as presumed WSM on 650 with the Grand Ole Opry, or the station on 930 or 940 running Rush Limbaugh), but I was surprised at how quick I was able to pull call letters out of stations I heard. I'm looking forward to going back next spring, but my wife's already said I can't take the loop, hi. 73.

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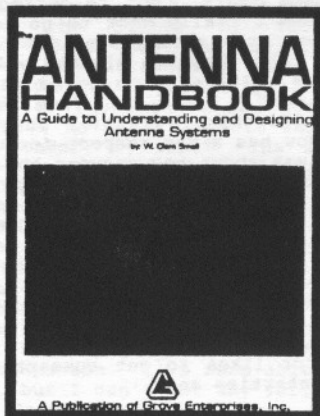
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NEWS RELEASE

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Antenna Expert Joe Carr Writes A "Cookbook" Of His Favorite Antenna "Recipes" For Shortwave Listeners

Joe Carr, operator of ham radio station K4IPV, is widely recognized as one of the world's leading authorities on practical antenna systems for shortwave radio enthusiasts. His monthly columns in *Popular Electronics* and *Popular Communications* magazines are among the most popular features in those publications, and his 42 previous books for such publishers as McGraw-Hill, Howard Sams, and TAB Books have sold hundreds of thousands of copies around the world. Joe has now used his technical expertise and writing skill to fill a major gap in radio books—a collection of antenna designs specifically for receiving purposes from longwave to 30 MHz.

The result of his efforts is *Joe Carr's Receiving Antenna Handbook*. Unlike some other antenna books for shortwave listeners, this is not a warmed-over collection of slightly adapted ham radio antenna designs. Nor is it a too-basic "how to build a dipole" type of book. Instead, Joe has written a book aimed at shortwave listeners and other radio hobbyists interested in maximizing the potential of any shortwave receiver. In thirteen chapters, Joe discusses elements of antenna theory, such as the angle of arrival of radio signals and response patterns, that are important to receive-only antennas. He discusses the trade-offs and compromises inherent in any real-world antenna system. There is extensive coverage on construction techniques and safety considerations for antenna installation. Joe even devotes an entire chapter to grounding techniques and lightning protection.

The bulk of *Joe Carr's Receiving Antenna Handbook* deals with wire antenna designs. Dipoles (single band, multiband, and stacked), doublets, Zepps, Vee beams, Franklin arrays, slopers, rhombics, full wavelength loops, and bobtail curtain arrays are just a few of the designs Joe discusses in detail. The operating theory behind each design is given along with construction details and formulas to determine the proper dimensions of each antenna for a desired frequency range. Fans of low frequency DX will especially appreciate Joe's extensive discussion of Beverage antennas, including phased and steerable notch designs.

Joe Carr's Receiving Antenna Handbook also describes vertical antennas for receiving purposes, and shows how to phase different vertical antennas together to produce directional receiving patterns. Joe also tells how to build directional Yagi and quad antennas for the shortwave broadcasting bands. And for longwave and AM broadcast band DXers there is an entire chapter devoted to indoor loop antenna designs.

The book discusses the pros and cons of active antennas and other solutions for limited space or other difficult situations. Accessories, such as antenna tuners and preamplifiers, are covered in detail. Finally, Joe describes the different types of transmission lines in use and shows how to use instruments such as noise bridges and SWR analyzers to determine the true resonant frequencies of a receiving antenna.

Joe Carr's Receiving Antenna Handbook has a list price of \$19.95, and is available from leading SWL and ham radio book and equipment dealers. It is also available from HighText for \$19.95 plus \$3.00 shipping by calling 1-800-888-4741, or by mail from P. O. Box 1489, Solana Beach, CA, 92075.

Ralph - How about these antennas?

73, Harry.

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1.7 ** CAPACITOR / POTENTIOMETER INTERACTIVE ADJUSTMENTS FOR NULL **
Perform procedure 1.7a, 1.7b, or 1.7c as determined by step 1.6.

1.7a (Prior adjustment: R3)

If R3 is at center position, or CCW from center:

Set S2 to Null-a. Adjust C1 to improve the null.

If the null isn't well-defined or C1 is near the

CW or CCW end of its range:

Set S2 to Null-b and re-adjust C1 for the null.

Interactively adjust R3 and C1 to get the best
available null with these controls.

If R3 is CW from center:

Set S2 to Null-a. Adjust C2 to improve the null.

If the null isn't well-defined or C2 is near the

CW or CCW end of its range:

Set S2 to Null-b and re-adjust C2 for the null.

Interactively adjust R3 and C2 to get the best
available null with these controls.

1.7b (Prior adjustment: R1 - e. g. R1 is not fully CCW)

Set S2 to Null-a. Adjust C2 to improve the null.

If the null isn't well-defined or C2 is near the

CW or CCW end of its range:

Set S2 to Null-b and re-adjust C2 for the null.

Interactively adjust R1 and C2 to get the best
available null with these controls.

1.7c (Prior adjustment: R2 - e. g. R2 is not fully CCW)

Set S2 to Null-a. Adjust C1 to improve the null.

If the null isn't well-defined or C1 is near the

CW or CCW end of its range:

Set S2 to Null-b and re-adjust C1 for the null.

Interactively adjust R2 and C1 to get the best
available null with these controls.

1.8 ** FINAL TOUCH UP TO GET MAXIMUM NULL **

Do the final null "touch-up" with an interactive adjustment
of C1, C2, and R3.

*** Super-MWDX-5 Loop vs. Wire Phasing Procedure ***

2.0 Phasing Steps (Loop vs. Wire)

NOTES: The loop should be equipped with a Q-spoiling resistor of approximately 22K across its parallel-tuned LC tank. A 50K potentiometer (initially set to center) might be substituted; it can provide an added control over nulling if desired. The pot or fixed resistor should be easily removable (switch or clips) to facilitate stand-alone (high-Q) loop usage.

A loop used in a phasing application is usually oriented for best directivity toward desired DX signals, whether or not that position reduces the dominant. Sometimes orienting the loop for MAXIMUM dominant signal pick-up, or for dominant level equal to that from the wire, can actually help nulling.

2.1 ** INITIALIZATION OF SWITCHES **

Set frequency-range switch S1 to the correct range for the frequency of operation (see Table 2). Set S2 Function switch to Line 1; set S3 to Common (unless using an antenna system with noise-reduction transformers). Set Input Coupling switch S4 to Normal (or to a different position, depending on experimentation that leads to having determined the best position for the wire being used). Set S5 Output switch to Phaser / Unamplified, and set S6 to Loop.

2.2 ** INITIALIZATION OF POTENTIOMETERS **

Set level pots R1 (Line 1) and R2 (Line 2) to fully counterclockwise (minimum attenuation). Set Null Vernier (Q-Balance) pot R3 to center position.

2.3 ** CONNECTIONS **

Connect longwire #1 to J1 and connect the loop (coax.) to J8. If coaxial cable is used on Line 1, a BNC or SO-239 to dual-banana-plugs adapter should be used to connect to J1 (center) / J3 (shield). Earth ground may be connected to J4. Connect the phaser's output (J5), via coaxial cable, to the input of the receiver to be used, or to a tunable preamp. between phaser and receiver. Connect a 9V battery to the J7 battery holder

and plug P1 into J6, or connect the plug of an 8V to 15V DC power source to J6. Connect the loop to its power source.

2.4 ** PEAK LINE 1 **

Tune Line 1 by peaking desired-frequency signal strength with C1. At this time, leave C1 at its peaked-signal position.

[At this time, other positions of Input Coupling switch S4 may be tried to see if greater signal transfer is possible. Re-adjustment of C1, and possibly S1, may be needed to re-establish a peaked condition. In any event, the peak should have reasonable Q (be well defined) and C1 should not be set too close to fully CW or fully CCW. In most cases, S4 on Normal will provide good enough signal levels and reasonably sharp tuning.]

2.5 ** PEAK LINE 2 **

Set S2 Function switch to Line 2. Tune Line 2 by peaking the desired-frequency signal strength with the loop's tuning capacitor. Leave this capacitor at its peaked-signal position.

2.6 ** DETERMINE LINE HAVING STRONGER DOMINANT-SIGNAL LEVEL **

Note the difference in the strength of the dominant signal to be nulled as you switch S2 between Line 1 and Line 2.

2.7 ** INITIATE NULL **

The potentiometer that will be adjusted initially will be that corresponding to the antenna line having the stronger peaked level (from step 2.6): adjust R1 if Line 1 is stronger; R2 if Line 2 is stronger. Set S2 to Null-a. Adjust the pot determined above (R1 or R2) to search for a null of the dominant. Try this again with S2 set to Null-b. Leave S2 on the position yielding the better-defined null.

If a well-defined null was not obtained; set the pot of the stronger line such that signal level of the dominant is the same when S2 is switched from Line 1 to Line 2. Set S2 to the position (Null-a or Null-b) having the lower level of dominant signal / greater evidence of subdominant signals.

Adjust the tuning capacitor (C1 or the loop tuning capacitor) of the line OPPOSITE of that whose pot was adjusted. Adjust this capacitor for best nulling of the dominant. If the null is not easily obtained or tends to occur at the end of the

capacitor's adjustment range; set S2 to the other null position (e. g. Null-b if you had started on Null-a). In rare cases, better results may be obtained by re-peaking the capacitor (e. g. go back to S2 on Line 1 if C1 was just adjusted and re-adjust C1 for a peak), and then adjusting the capacitor of the SAME line as the pot that was offset from its fully-counterclockwise position. Again, this adjustment should be tried with S2 on Null-a and on Null-b to see which position results in the better null and in the adjusted tuning capacitor being closer to the center of its mechanical range at null.

2.8 ** COMPLETE THE NULL **

Once as much nulling as possible has been obtained by alternately adjusting the pot (R1 or R2) and tuning capacitor (the loop tuning capacitor or C1) determined by Step 2.7; do the final null "touch-up" with an interactive adjustment of C1, the loop tuning capacitor, and R3. Slight physical re-positioning of the loop may also help to finalize the null. If a 50K pot (initially set to center, 25K) had been installed across the loop coil (instead of the approximately-22K fixed resistor), it may also be touched up for null completion.

3.0 *** Output Amplification ***

3.1 If more gain is required after nulling, set S5 to Phaser / Amplified. Occasionally a slight touch-up of the pots and tuning capacitors might be required to get the best null. This generally occurs only with portable receivers that leak some pickup from their internal ferrite rod or whip antennas.

NEW FEATURES:

Besides the enhanced controllability of nulls mentioned in the above nulling procedures, Super-MWDX-5 affords two other critical improvements over its predecessors:

Compatibility with noise-reducing antenna systems

If Input Coupling switch S4 is set to the Noise-Reduction mode and Ground Mode switch S3 is set to the Float position,

the phasing unit may be interfaced correctly with coaxial inputs from low noise antenna systems consisting of a wire antenna and a "field site" earth ground fed to the primary of a (field site) step-down transformer in the 4:1 to 12:1 range; either a Mini-Circuits T9-1-X65 or Nick Hall-Patch's homebrew version consisting of an Amidon FT50-43 core with 35 turns primary / 11 turns secondary will work well. The lower impedance output of this field-site transformer is paralleled with 270 to 330 ohms; one secondary lead goes to the shield of the coaxial cable going to the operator's "shack" and the other secondary lead goes to the center conductor of this coaxial cable through a small series resistor in the 5 to 12 ohm range. The resistors form a low-loss matching pad to reduce the degree of mismatch. Excessive mismatch can compromise the shielding effectiveness of the coaxial cable. One such low-noise set-up can be phased against a loop or, even better, against a second low-noise antenna system with different directional properties. In any event, the "shack end" of a Line 1 low-noise coaxial feed is connected to J1 (center) and J3 (shield) of the phasing unit; similarly, if such a coaxial feedline is to be used for Line 2, it should be connected to J2 (center) and J4 (shield).

For further discussion of noise-reduction schemes, the reader is advised to consult my articles "Another Look at Noise-Reducing Antenna Systems" (6 JUL 1992), "Bevmatcher" (15 JAN 1991), the Nick Hall-Patch / John Bryant article "Impedance Matching a Beverage Antenna to a Receiver" in Proceedings 1988, and the 1991 noise-reducing inverted-L articles by Dallas Lankford and Denzil Wraight. The reader should be advised that the noise being reduced is LOCAL electrical noise of the type caused by TV sweep oscillator harmonics, light dimmer buzz, and the like. These antenna systems cannot, singly, reduce static from lightning bolts. Such noise CAN be nulled by phasing two antennas if it is coming from far enough away as to approximate a point source not having great incoming-angle variation over time (it is then treated as a "dominant signal" as if it were a broadcast station interfering with desired DX).

"Spare antenna" input

DXpeditioning in Newfoundland and elsewhere has taught me the value of having a broadband antenna available with the flip of a switch without having to disconnect the phased set-up. This antenna is characteristically used for rapid bandscanning and searching for parallel frequencies. The beauty of having it go through the phasing unit is that you could have nulled out a noise

or a "pest" station on medium-wave and be monitoring a rare African when the idea of checking a 60-meter parallel comes to mind. With one flip of Super-MWDX-5's Output Switch S5 to one of the spare antenna positions ("Spare / Unamplified" or "Spare / Amplified"), you are now on a third antenna, fed into J9. This could be a longwire, a Beverage, or even an untuned active whip such as the MFJ-1024. The 60-meter parallel is confirmed and then you can flip back to the phaser signal without upsetting the null whatsoever. In home set-ups, some DXers might like to feed a loop into J9 so they can switch back and forth between a two-phased-wires-created-null and one created by the loop. Entirely different stations might be logged when the same dominant station has been nulled by the two different methods. It sounds weird, but it can happen. A few receivers such as the Drake R8 have their own antenna switches that let you pick one of two sources. But many don't. Sony ICF2010's and Realistic DX-440's are very popular for DXpeditions. Neither has such an antenna switch.

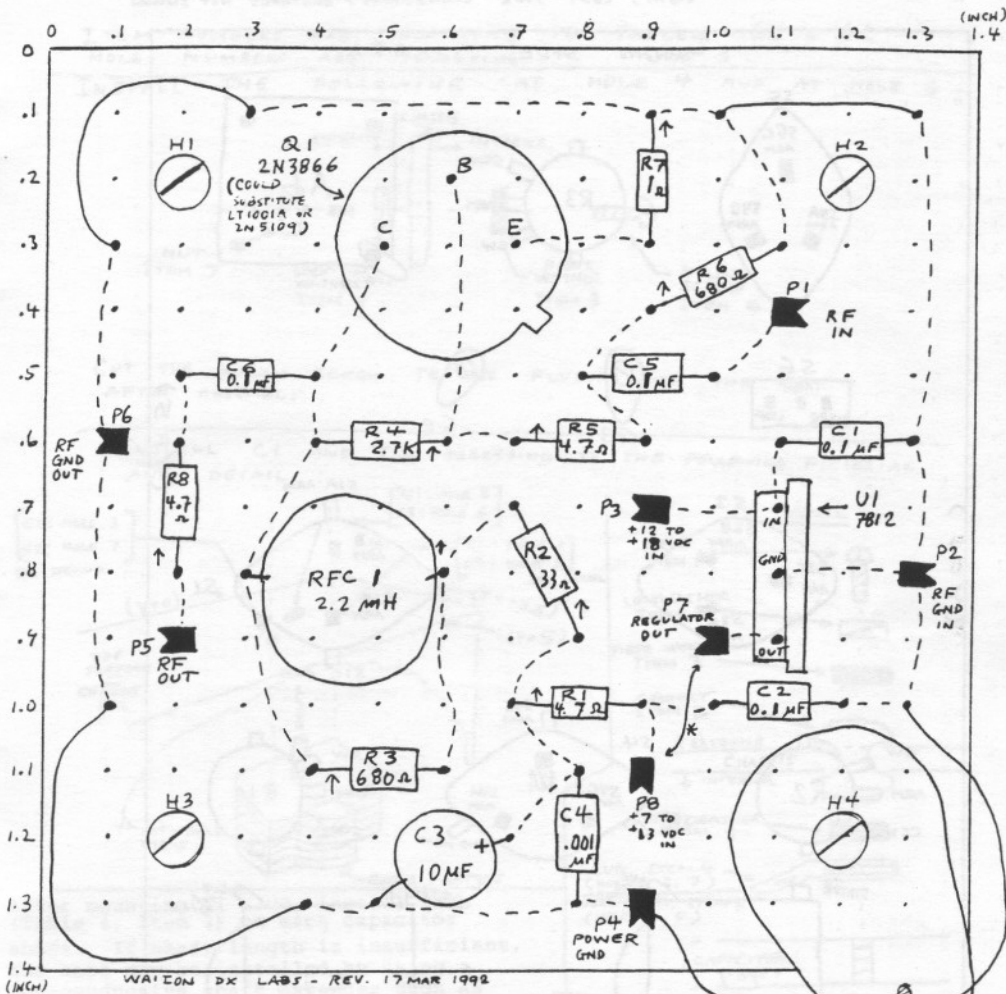
The added features make the Super-MWDX-5 a bit more complex than the standard MWDX-5 and much more complex than the Mini-MWDX-5. A well-equipped DX shack should have a very simple phaser such as Mini-MWDX-5 as well as a full-features version such as Super-MWDX-5. The simple unit will get nulls much of the time, but the more complex (and therefore, more flexible) unit can get more DX for the operator who has the patience to master its use.

Building the Super-MWDX-5 Phasing Unit

The documentation (schematics, assembly drawings, parts lists, hole lists, etc.) serves as the starting point. The following procedure should serve as an outline for the builder.

1. Gather all necessary parts (see parts lists to follow). Prepare work area with appropriate tools.
2. Drill out chassis box, in accordance with Table 3.
3. Assemble the A1 (BBA-C1) Broadband Amplifier Card subassembly, per Figures 4 & 5 and Table 5.
4. Mount the A1 (BBA-C1) circuit card at the hole locations noted in Table 3.
5. Install jacks, pots, and switches. Solder inductors onto S1 per Figure 2 and Table 2.

FIGURE 5 : BBA - C1 IMPROVED BROADBAND AMPLIFIER CARD - ASSEMBLY



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NOTES :

FOR SCHEMATIC, SEE FIGURE 4.

FOR PARTS LIST, SEE TABLE 5.

↑ = LONG-LEAD SIDE OF VERTICALLY-MOUNTED COMPONENT.

--- = BUSS WIRE ON COMPONENT SIDE OF BOARD

- - - = BUSS WIRE ON SOLDER SIDE OF BOARD

⬛ = "FLEA CLIP" TERMINAL PIN

⬛ = JUMPER INSTALLED FOR REGULATED OPERATION

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FIGURE 6: SUPER-MWDX-5 SWITCH DETAILS
 (SKETCH OF INTERIOR VIEW OF COMPONENTS, BOTTOM COVER REMOVED)
 NOTE: POSITIONS, SIZES APPROXIMATE -- NOT TO SCALE
 RIGHT, LEFT SIDE CONNECTORS / CONTROLS NOT SHOWN

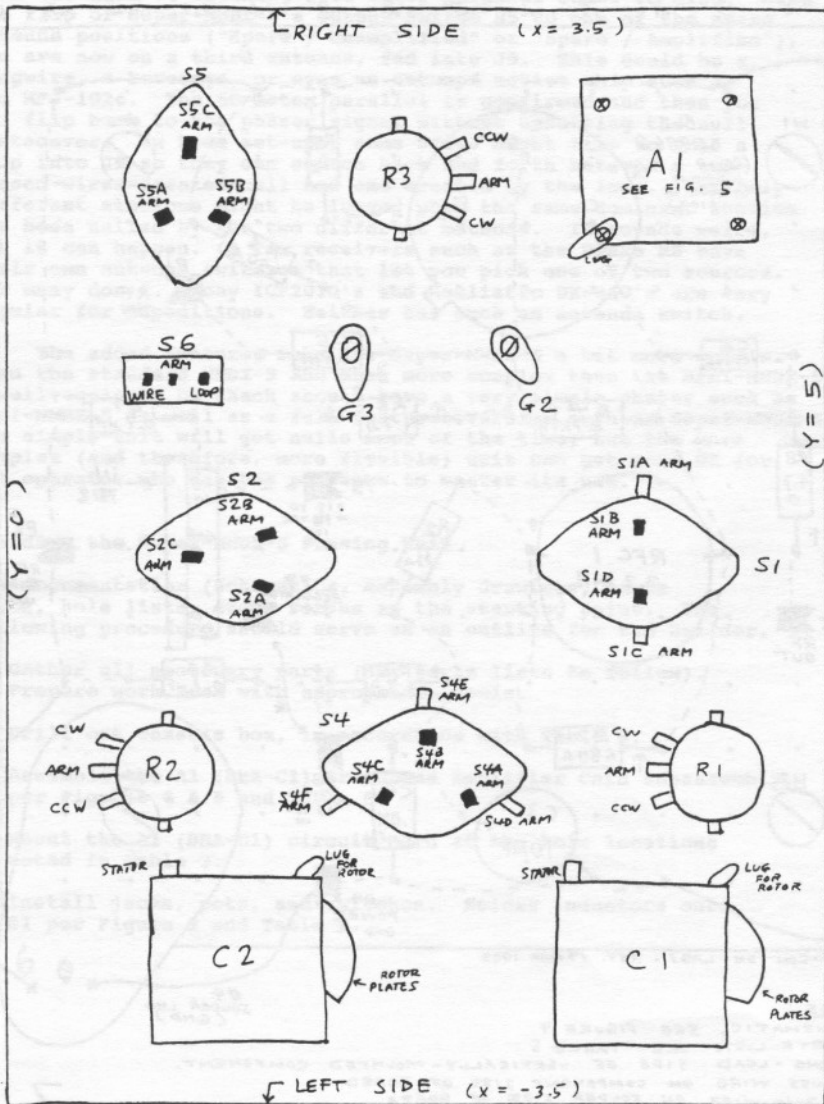
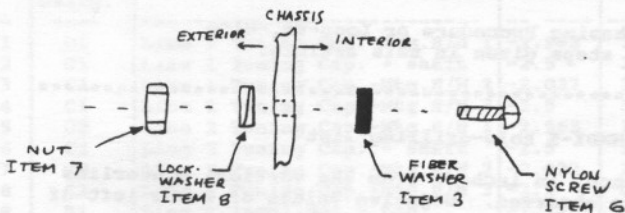


FIGURE 7

C1, C2 MOUNTING DETAILS

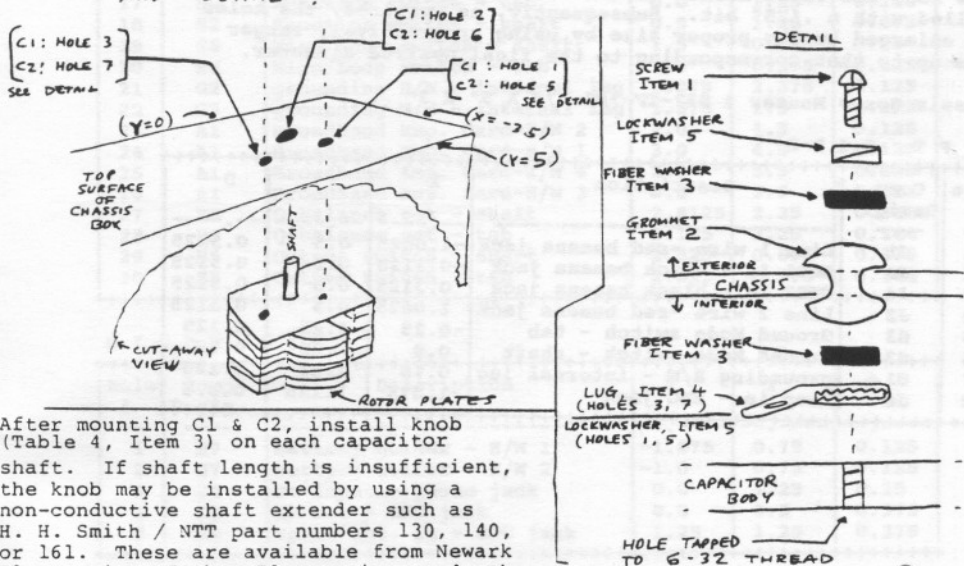
ITEM NUMBERS ARE ACCORDING TO TABLES 6B & 6C.
HOLE NUMBERS ARE ACCORDING TO TABLE 3.

INSTALL THE FOLLOWING AT HOLE 4 AND AT HOLE 8 :



CUT THE NYLON SCREW TO BE FLUSH WITH THE NUT AFTER ASSEMBLY.

INSTALL C1 AND C2 ACCORDING TO THE FOLLOWING PICTORIAL AND DETAIL :



After mounting C1 & C2, install knob (Table 4, Item 3) on each capacitor shaft. If shaft length is insufficient, the knob may be installed by using a non-conductive shaft extender such as H. H. Smith / NTT part numbers 130, 140, or 161. These are available from Newark Electronics, Gerber Electronics, and others.

6. Install wiring and other components per Figures 1, 2, 3, 6, 7 and Tables 1-4, 6, 7, 8. Install knobs on C1, C2, R1, R2, R3, S1, S2, S4, and S5 per Tables 2, 4, and 8. Place labels near controls and jacks.
7. Follow Two-Wire Phasing Procedure or Loop-vs.-Wire Phasing Procedure steps given in this article.

Table 3: Super-MWDX-5 hole-drilling list

X = Horizontal distance, in inches, from the vertical centerline (VCL) on the side observed. Negative values of X are left of VCL, positive values of X are right of VCL.

Y = Vertical distance, in inches, from the bottom horizontal edge of the side observed.

D = Hole diameter in inches.

Hole loci are first marked on the box with a scribe and are then drilled with a .125" bit. Subsequently, as required, the holes are enlarged to the proper size by using progressively larger bits up to that corresponding to the final desired diameter.

Chassis Box = Mouser # 537-TF-782: 7" X 5" X 3"

L E F T S I D E

Hole #	Comp. Desig.	Description	X	Y	D
1	J1	Line 1 wire -red banana jack	-1.0625	0.5	0.3125
2	J3	GND1 In - black banana jack	-0.3125	0.5	0.3125
3	J4	GND2 In - black banana jack	0.3125	0.5	0.3125
4	J2	Line 2 wire -red banana jack	1.0625	0.5	0.3125
5	S3	Ground Mode switch - tab	-0.25	1.25	0.125
6	S3	Ground Mode switch - shaft	0.0	1.25	0.25
7	G1	grounding H/W - internal lug	0.75	1.25	0.125
8	J8	Loop in - BNC jack	1.875	1.125	0.375

Table 3 (continued)

TOP SIDE

Mounting holes on C1 & C2 must be tapped to 6-32 thread.

Hole #	Comp. Desig.	Description	X	Y	D
1	C1	Line 1 Tuning Cap.-Mtg.H/W 1	-2.963	3.875	0.144
2	C1	Line 1 Tuning Cap. - shaft	-2.5	3.625	0.5
3	C1	Line 1 Tuning Cap.-Mtg.H/W 2	-2.037	3.875	0.144
4	C1	Line 1 Tuning Cap.-Mtg.H/W 3	-2.5	3.0	0.144
5	C2	Line 2 Tuning Cap.-Mtg.H/W 1	-2.963	1.625	0.144
6	C2	Line 2 Tuning Cap. - shaft	-2.5	1.375	0.5
7	C2	Line 2 Tuning Cap.-Mtg.H/W 2	-2.037	1.625	0.144
8	C2	Line 2 Tuning Cap.-Mtg.H/W 3	-2.5	0.75	0.144
9	R1	Line 1 level pot - tab	-1.125	4.125	0.144
10	R1	Line 1 level pot - shaft	-0.8125	4.125	0.3125
11	S4	Input Coupling switch-shaft	-0.625	2.375	0.375
12	S4	Input Coupling switch - tab	-0.125	2.375	0.144
13	R2	Line 2 level pot - tab	-1.125	0.875	0.144
14	R2	Line 2 level pot - shaft	-0.8125	0.875	0.3125
15	S1	Bandswitch - tab	0.0	3.75	0.144
16	S1	Bandswitch - shaft	0.5	3.75	0.375
17	S2	Function switch - tab	0.0	1.25	0.144
18	S2	Function switch - shaft	0.5	1.25	0.375
19	S6	Wire/Loop switch - shaft	1.5	0.625	0.25
20	S6	Wire/Loop switch - tab	1.5	0.375	0.125
21	G2	grounding H/W - internal lug	1.875	2.375	0.125
22	G3	grounding H/W - internal lug	1.875	1.5	0.125
23	A1	Broadband Amp. Card-H/W 2	2.0	4.5	0.125
24	A1	Broadband Amp. Card-H/W 1	3.0	4.5	0.125
25	A1	Broadband Amp. Card-H/W 4	2.0	3.5	0.125
26	A1	Broadband Amp. Card-H/W 3	3.0	3.5	0.125
27	R3	Q-balance pot - shaft	2.8125	2.25	0.3125
28	R3	Q-balance pot - tab	3.125	2.25	0.144
29	S5	Output switch - shaft	2.625	0.875	0.375
30	S5	Output switch - tab	2.625	0.375	0.144

RIGHT SIDE

Hole #	Comp. Desig.	Description	X	Y	D
1	J7	battery holder - H/W 1	-1.875	0.75	0.125
2	J7	battery holder - H/W 2	-1.0	0.75	0.125
3	J6	B+ input - phono jack	0.0	1.25	0.25
4	J5	RF out - BNC jack	0.0	0.5	0.375
5	J9	spare ant. in - BNC jack	1.25	1.25	0.375

Table 4: "upper level" parts list

NOTE: For bandswitch inductors, see Table 2.

*: Note follows parts list.

Vendor codes for this and subsequent parts lists:

AE = Antique Electronics /688 W. First St.
/Tempe, AZ 85281
/Tel. 1-602-894-9503

DK = Digi-Key /P. O. Box 677
/Thief River Falls, MN 56701-0677
/Tel. 1-800-344-4539

MCL = Mini-Circuits Lab. / P. O. Box 350166
/ Brooklyn, NY 11235-0003
/Tel. 1-718-934-4500

MOU = Mouser Electronics / 11433 Woodside Ave.
/ Santee, CA 92071
/Tel. 1-800-346-6873

RS = Radio Shack / Many locations worldwide

Item	Designator	Description/Value	Vendor	Vendor Stock #	QTY
1	-	chassis box	MOU	537-TF-782	1
2	A1	BBA-C1 amp. card		(refer to text)	1
3	(C1,2)	knob	MOU	45KN014	2
4	*	knob	RS	274-416	7
5	B1	9V alkaline battery	RS	23-553	1
6	C1,2	var. cap., 10-365pF	AE	CV-235	2
7	C3,4	capacitor, 33 pF	MOU	232-1000-033	2
8	C5,6	capacitor, 75 pF	MOU	232-1500-075	2
9	C7,8,9	capacitor, 0.1 uF	MOU	539-CK05104K	3
10	J1,2	red banana jack	RS	274-662	2
11	J3,4	black banana jack	RS	274-662	2
12	J5,8,9	BNC jack	RS	278-105	3
13	J6	phono jack	RS	274-346	1
14	J7	* battery holder	MOU	534-1290	1
15	P1	phono plug	RS	274-339	1
16	R1,2	pot., 500 ohm, linear	MOU	31CT205	2
17	R3	pot., 50K, linear	MOU	31CT405	1
18	R4	resistor, 33 ohm	RS	271-007	1
19	R5,6	resistor, 68 ohm	RS	271-010	2
20	R7,8	resistor, 4.7 ohm	MOU	29SJ500-4.7	2
21	R9	resistor, 1 ohm	MOU	29SJ500-1.0	1
22	S1	switch/4pole/6pos.r	MOU	10WR046	1

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