



DX NEWS

The magazine of the
National Radio Club

— SINCE 1933 —

Volume 58, No. 29 - August 26, 1991 (ISSN 0737-1659)

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From the Publisher ... First, our condolences go out to NRC Membership Manager Ron Musco, whose mother passed away July 25.

We have in this issue an unusual amount of technical articles, specifically antenna articles, which tells me that you DX'ers are coming up with solutions to deteriorating conditions. My hat is off to those NRC'ers who continue to search for solutions to problems.

I should have announced earlier that we'd like to reactivate the "Target DX" column formerly edited by Jim Renfrew. Although the new editor doesn't necessarily have to be a long-time, "expert" DX'er, he/she should be able to evaluate contributions in order to provide readers with solutions to DX'ing problems. Please forward your application to the publisher in Topeka.

Where to send ... It occurs to me that it's time for me to remind you to check the back cover before mailing off orders, renewals, clippings, etc., not all of which come to me! Please send clippings concerning format changes to Tony Fitzherbert and those concerning status changes to Jerry Starr. To Laura McCusker should primarily go clippings about trends in the radio business, and to Pete Kemp should go those concerning individual stations and personalities. Send me the rest, and as space becomes available, I'll use them as filler.

The NRC grows ... My thanks to those who have been requesting sample copies for potential members, most recently Ken Romstadt, who decided that the growth of the NRC was important enough for a phone call to me. The NRC continues to grow. Remember, sample and replacement copies are free - don't hesitate to ask! Back copies are still available to members for the postage.

Check the inside back cover for news about the convention in Bridgeport and the new NRC Log - get those orders in early!

They joined ... J. J. Hitt, Houston, TX; David Klemp KM4DB, Clearwater, FL; Dean Peaks, Chicago, IL; Clifford Schnauffer, Elizabeth, NJ; Keith Short, Columbus, OH; and Jeff Tomasin, Cypress, CA.

DXChange ... Wanted: accurate transmitter patterns

for the new upcoming night-time pattern book. Send those coverage maps to Fred Tankersley - 4125 W. Saguaro Park Lane - Glendale, AZ 85310 ... Mike Hawk is looking for help or accurate station information on Latin American stations for a future project. Send your information or volunteer to help by writing to Mike at 10212 "P" Street - Omaha, NE 68127-2130. Mike also is looking for a receiver with a good FM section - tuner, portable, anything. Include a spec sheet with the offers, if at all possible ... If you'd like to acquire some old equipment from the now-defunct WREN, KJTY (see p. 42) is offering for bid/sale the following items (none guaranteed to work) through the publisher (for local pickup only): 5-tube Newcomb AM receiver; 4 Utah 10" speakers in wooden cabinets; Hallicrafters CRX-1 FM (30-50 mHz) rx; two Gates amps (I think) - M-3638, with tubes; RCA CC-20A control; Spotmaster 500 AR rackmount player/recorder; Harris Cartape II; Gates M5546A Level Devil; Monitoradio, MCA100H; GE phono-mike pre-amp, UPX-063B, 4 watts; 4 Aiphone handsets and adapters, a 12-line phone switcher, and an Ampex 620 PA amp + speaker. Send your bids for any or all pieces to the publisher; all monies/donations will go directly to the non-profit KJTY. 73.

DX Time Machine From the Pages of DX News

50 years ago ... from the August 19, 1941 DXN: Ernest Cooper suggested that there should be a theme song, preferably a march, to start and end all NRC DX programs.

25 years ago ... from the Aug. 20, 1966 DXN: New members included William Brooks, Gene Capener, Edward Judd, Lon J. Berman, Kenneth Behrens, and Thomas Behrens.

10 years ago ... from the August 10, 1981 DXN: Gary Atkins and Dick Truax warned NRC'ers that the Louisville Publishing Committee might not be able to put out DXN forever!

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

AM Switch

Jerry Starr

 c/o WHOT Radio
 4040 Simon Road
 Youngstown, OH 44512-1320

Status changes in AM stations, supplied by the FCC and NRC members
CALL LETTER CHANGES

Old call:		New call:
620	CFCL ON	Timmins CKOY
770	WRKX FL	North Fort Myers WWCN
820	WPNT IL	Chicago WXJZ*
830	KSRT CA	Orange KPLS
870	KROL NV	Laughlin KOWA
1100	*New AZ	Cave Creek KOCF*
1130	KLKY IA	Prescott KWDS
	WDGY MN	Minneapolis KFAN*
1260	WJOT SC	Lake City WVLC
1280	WSGX FL	Sarasota WTMY
1290	KESP CA	Santa Barbara KKSB*
1340	KICK MO	Springfield KIDS
1350	KBAD CA	Bakersfield KBID
1370	OFLV PQ	Valleyfield CKOD
1400	KZTR CA	Santa Paula KKZZ
1410	KQIV MN	Litchfield KLMO
1420	WKLT MI	Kalkaska WKAL
1430	WCOG SC	Ridgeland WNFO
1450	KUUB MT	Bozeman KMMS
1460	WLKQ GA	Buford WXEM
	WBZN WI	Racine WKKV
1500	KXTO TX	Sherman KJIM



Radio Montréal

 35, rue York
 Westmount (Québec)
 Canada H3Z 2Z6

Notes: WPNT-820 request for WXRT was set aside and not used. New 1100 station in AZ is a mystery, see Grants below. WDGY-1130 is in a market with a mixture of "W" and "K" calls and although this may look unusual it can be done. KESP-1290 is silent, new calls evidently signal it will soon be returning to the air.

APPLICATIONS FOR NEW STATIONS

None

GRANTS FOR NEW STATIONS

620	NV	Winchester: 500/450 U4 (southwest suburb of Las Vegas)
650	OR	Junction City: 10000/1000 U4 (15 miles N of Eugene)
860	OR	Eugene: 210/210 U4
	OR	Troutdale: 20000/500 U4 (eastern suburb of Portland)
1100	AZ	Cave Creek: This is a mystery. We went back through our records for the past several years and can find no record of any grant or even an application for a station here so we don't have any facilities information. In fact, the only hint that a new station exists here is listing of the call letter assignment in M Street Journal. We can't find a record of any new AM station being granted ANYWHERE in Arizona in the past few years. Hopefully we will be able to uncover this before #30.

APPLICATIONS FROM EXISTING FACILITIES

710 KUET AZ Black Canyon City: add 4100 watts nights (this added to their already existing CP for 50000 watts daytime, making the CP 50000/4100 U4)

GRANTS TO EXISTING FACILITIES

890	KGGN	MO	Gladstone: power to 1100 watts
1020	WART	FL	Port Orange: reduce power to 400 watts, change antenna to D1
1240	KDEC	IA	Decorah: reduce power to 580/580 watts

OTHERNESS

580	KANA	MT	Anaconda: silent station is ON THE AIR
610	KYJC	OR	Medford: station is SILENT
	WEXS	PR	Patillas: construction on this new station was halted after only one of their two towers was erected when, reportedly, funds ran out
740	WLVG	MA	Needham: station is SILENT
770	WWCN	FL	North Fort Myers: silent as WRKX is ON THE AIR
840	*App	OR	Springfield: application for new station has been DISMISSED
990	WANT	VA	Richmond: station is SILENT
1010	KTLE	UT	Tooele: silent station has been sold, new owners expect to return it to the air with Spanish format
1060	KFNA	TX	El Paso: silent station is ON THE AIR
1120	WHOG	AL	Hobson City: station is SILENT
1170	WARW	NY	Cornwall-on-Hudson: station is SILENT
1220	WTCN	MN	Stillwater: station is SILENT
1300	WYTL	IN	Terre Haute: station is SILENT
1320	WKIN	TN	Kingsport: station now relays WJCW-910
1350	WEGA	PR	Vega Baja: station is SILENT
1370	WZAO	WV	Moundsville: several issues ago we typo'd WQPN's new call as WVAO here in Otherness, WZAO is correct as we reported under Call Changes, and although they now ID as Glen Dale, which is their mailing address, they are still officially licensed to Moundsville and have made no request to change city of license.
1400	WFTL	FL	Fort Lauderdale: now relays WPBR-1340
1470	WHRD	WV	Huntington: silent station has been sold and is expected to return to the air
1480	KRRU	CO	Pueblo: station is SILENT
1490	WAJF	AL	Decatur: silent station is ON THE AIR
	KXRE	CO	Manitou Springs: station is SILENT again
1510	KPBI	MO	Greenwood: silent as KVOG, station is ON THE AIR
	CJRS	PQ	Sherbrooke: station is SILENT
1540	WYNC	NC	Yancyville: station is SILENT (and has been since 12-31-90 according to station)
1590	WABV	SC	Abbeville: station is SILENT

THANKS: Dave Schmidt, Wayne Heinen, John S. Bowker, M Street.

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

SEE YOU AT THE CONVENTION IN WEST-BY-GAWD-VIRGINIA!

Promote the NRC and DX News and help us grow!

Planning to attend a DX'ers or hobbyist gathering? Include DX News in your plans. Upon request, we'll send you a packet of up to 50 recent DXN's to be given free to attendees. Just send a postcard to NRC - P. O. Box 5711 - Topeka, KS 66605. Packets are sent by Book Rate, so please allow 21 days for delivery. Thanks - and tell your friends that the NRC is on the grow!

Domestic DX Digest - East

DX Catches in the Eastern U. S. and Canada, with 24-hr. ELT

William Hale

734 Burleson
San Marcos, TX 78666-4335

MEDIUM WAVE RAMBLINGS

- Russ Edmunds writes to say that he ...has always subscribed to the belief that a TIS was Travellers Information Service, providing info on sights, tourist attractions, etc, while a TAS was Travellers Advisory Service, advising motorists of traffic problems, constructions, etc. Even if it's not official, it's logical. Makes sense to me, Russ. Thanks.
- New NRC member Scott Barnett, 18, of Ferndale, Michigan checks in with his initial report in this edition. Some of the data he reported has appeared previously, so only those 'new' items will be relayed here. Thanks for your contributions, Scott. Glad your with us. And here's hoping we hear here, what you hear.
- I don't know long the sale was to last, but I heard a radio ad for Radio Shack mentioning the DX-440 on sale for \$139. On the other end of the scale, the new Drake R8 appears to be a real winner.
- MY deadline for Issue 30 (The Time To Get The Snowblower Tuned Up, Shawn Issue) is Sept. 7th. And September 21st for Volume 59, Issue 1!. Then weakly...er...weekly.

SPECIAL

- 600 WTAC MI FLINT - 7/31 1913 listed in Log as "Oldies", not anymore; It's gone REL and uses the slogan *Music and Ministry*, the farthest it got away from REL was *Amy Grants Every Heartbeat* (SB-MI)
- 730 WVIC MI EAST LANSING - format listed as MoYL, is definitely now CHR and has been for at least a year and simulcasts 94.9 FM (SB-MI)
- 830 KBUC TX CIBOLO - off the air; alleged that outfit leasing the facility was past due on payments, so owner pulled their plug (JB-TX)
- 960 KMA IA SHENANDOAH - now C&W mx (MH-NE)
- 1030 WUFL MI STERLING HEIGHTS - is REL, not CHR as Log indicates (SB-MI)
- WXSS TN MEMPHIS - 7/14 2245 good with ID and GOS; not silent anymore (MH-NE)
- 1080 WXLN KY LOUISVILLE - 7/10 0205 poor with urban ContChr mx and partial ID: 105.7 FM, 1080 AM, WXLN FM-AM; ex:WDJX (REH-ON)
- 1530 KGTN TX GEORGETOWN - off the air as of July 17th; this station has been on shaky ground for a couple of years now; a newspaper report that the station manager and \$10,000 worth of equipment was reported missing by the owner, after the station had failed to sign-on that day; I doubt they'll ever upgrade to 10,000 watts and go fulltime under present owners - Ed.-TX; first reported by GK-TX.
- 1550 WAMA? FL TAMPA - 7/10 0140 assumed to be WAMA with AC and promo for a rubber duckie race; 0200 legal ID given as WUSA WDAE Tampa- ??? W-101; not heard since; anyone know what the story is with this guy? (REH-ON)

UNIDS AND UNID HELP

- 760 UNID ?? - 7/23 0227 faded up over WJR for 6 or 7 minutes with ID jx which I could not make out and Louis Armstrong's *It's A Wonderful World*; not KRZN, and after ruling out daytimers, KGU, and WEND (commonly hrd as all TLK), only WAFK, CFLD and CKQR are left; anyone know which? (MH-NE)
- 1120 UNID ?? - 7/10 0235 way under KMOX with *Sports Final*; looped E-W (REH-ON)
- 1260 UNID ?? - 8/1 0656 all I could catch was the slogan *Q95* and they played *Desperado* by the Eagles; any help greatly appreciated (SB-MI)
- 1550 WMDH IN NEW CASTLE - 7/18 0150 with *Talknet*; gave *You're listening to WMDH* legal ID amidst time tones at 0202; my UNID of Issue 28 and my 5000th catch on the BCB (REH-ON) [Congrats, Chuck! - Ed.]



TIS AND OTHER STUFF

- 530 TIS NC CHARLOTTE - (Douglas Airport) - 7/6 1400 presumed this while at airport and motel (±2 miles away); sounded like a male announcer, but signal garbled and poor quality; sign mentioning to *Tune to 530* noted on access road to airport arrival area (MH-NC)
- 1610 TIS NC RALEIGH - (Raleigh AP TIS) - NOT noted 7/5 1230 while driving by airport on I-40; sign noted for airport info to tune to 1610, but not even a hint of a station...nothing on 530 either; did a quick scan of the AM band, but nothing noted there either...operational or off? (MH-NC)



MIDNIGHT TO 0800 HOURS ELT

- 590 WOW NE OMAHA - 7/8 0006 with C&W mx, CL ID, TC (MS-MB2)
- 620 WTMJ WI MILWAUKEE - 7/28 0105 fair with wx report, WTMJ 620 ID; under/over CKCK; nice to get away from CKRC slop (VAL-DX)
- 800 KNKK UT BRIGHAM CITY - 7/14 0200 tuned in just as they ID'd as KNKK, *Brigham City, Ogden*; suspect they are more than the 30 watts listed; new (MH-NE) [Or didn't power down, knowing you were going to listen, hi - Ed.]
- 960 CFAC AB CALGARY - 6/29 0240 fair with restaurant ad, ...*More Summertime Fun on 960 CFAC* (MS-MB1)
- 990 CKIS PQ MONTREAL - 7/9 0135 in WWCN null with *Oldies Coast to Coast* and non-ID: *Montreal's newest radio station, all oldies all the time, Oldies 990* (REH-ON)
- CKIS PQ MONTREAL - 7/28 0212 fair with OLD mx by the *Guess Who*; new for us; ex:CHTX; CBW back on SPs at last (VAL-DX)
- 1040 CIMA BC VANCOUVER - 7/28 0117 poor - fair with lite ROK by *Whitney Houston*; under WHO and a new one; ex:CKXY (VAL-DX)
- 1050 CFYN ON SAULT STE. MARIE - 8/5 0043 good with ID: *You're listening to the Sault's classic hits, AM 1050* (RD-IA)
- 1070 KNX CA LOS ANGELES - 7/28 0750 strong with *KNX 1070 Weather* report, totally dominating the frequency (VAL-DX)
- 1210 KOKK SD HURON - 7/7 0032 with local wx mentioning Huron...*That's the latest weather from KOKK* (MS-MB2)
- 1240 WATN NY WATERTOWN - 7/28 7/28 0500 popped out of the mess with legal ID: *1240 WATN Watertown, New York, the area's first radio station* (REH-ON)
- CJAR MB THE PAS - 7/28 Midnight good with *CFAR/CJAR* ID - nx and wx by lady, came up in a mess, still on at 0100; 1st time hrd south of the Swan River (VAL-DX)
- 1250 KGDD TX PARIS - 7/23 0239 ID and OLD mx; up and down for 2+ hours; new (MH-NE)
- 1330 KNOW MN MINNEAPOLIS - 7/1 0029 fair...fooled me with CBC's *Canada Day* pgm, Royal Canadian Mounted Police comedy song, then - wx alert for Minnesota, National Public Radio mention, ID @ 0000 as *Minnesota Public Radio*; CLs not hrd (MS-MB1)
- 1350 WJBD IL SALEM - 7/28 0740 good with *WJBD Newtime is 6:40* during morning news report (RD-IA)
- 1400 KRPL ID MOSCOW - 7/28 0659 strong with *We're the Oldies Channel for the ___ City, 1400 KRPL Moscow-Pullman*; a new one! (VAL-DX)
- 1410 WRMN IL ELGIN - 7/28 0710 fair with two 1410 WRMN IDs noted (RD-IA)
- 1440 KMAJ KS TOPEKA - 8/2 0027 fair with 1440 KMAJ ID; strange, I thought this stn simulcasts its sister FM 100%...maybe not (RD-IA)
- 1460 KLTC ND DICKINSON - 7/8 0000 with ID *This is KLTC Dickinson - ABC Nx* (MS-MB2)
- 1470 WWWW OH TOLEDO - 7/28 0719 fair with two *AM 1470 Three W M* IDs noted (RD-IA)
- 1510 KGA WA SPOKANE - 7/28 0653 strong with sports, TC, totally dominating the frequency (VAL-DX)
- 1530 KFBK CA SACRAMENTO - 7/28 0525 fair with the *Jim Bohannon Show*, under WCKY (VAL-DX)
- KPCR MO BOWLING GREEN - 7/28 0700 weak with sign-on (RD-IA)
- 1550 WJIL IL JACKSONVILLE - 7/28 0730 weak with *Cubs BB* promo that included CLs (RD-IA)
- KXTO NV RENO - 7/28 0715 poor with *Radio Exitos* ID - Mexican-type mx; faded up for 5 minutes over CBE & KQWB; new + very nice (VAL-DX)

0800 TO 1600 HOURS ELT

- 660 **KQSR** ND WILLISTON - 7/1 1031 fair with **Paul Harvey**, non-ID as *News Radio 66*, TCs in both Central & Mountain Time Zones, local nx, lottery #s, local ads including one for Scobey, Montana, and sports (MS-MB1)
- 1450 **KZZJ** ND RUGBY - 7/7 1003 with ABC Info Nx in progress, then *KG Country* Weather sponsored by **Daryl's Refrigeration**, mention of *KZZJ studios here in Rugby* - pgm *Country Road* (MS-MB2)
- 1470 **KHND** ND HARVEY - 7/8 0951 with local ads including one for **First bank of Harvey**, *KHND Ping Pong Drive Contest* promo, C&W mx, wx at 0957, then *You're tuned to KHND Harvey...NBC News coming up.* (MS-MB2)
- 1590 **WTOQ** WI PLATTEVILLE - 8/1 1429 fair in KCRG splash with **Brewers BB**; 1st time hrd during the daytime (RD-IA)



1600 TO 2400 HOURS ELT

- 850 **WRMR** OH CLEVELAND - 8/5 2320 finally emerged with **OLD** and *...the Music of Your Life...*; thought **MoYL** was gone, but it's not, it's still on *Warmer* (WRMR); 1st time I've gotten 3 new stations on one channel on one evening (WN-MD)
- WJAC** PA JOHNSTOWN - 8/5 2305 on top occasionally with C&W mx, one garbled & one clear ID (WN-MD)
- WEEU** PA READING - 8/5 2042 faded in and out with minor league **BB** and ID (WN-MD)
- 900 **WFRO** OH FREMONT - 7/31 2149 with pbp of the **Indians-Blue Jays** game on the **Indians** network; see **CHML** (SB-MI)
- CHML** ON HAMILTON - 7/31 2033 with pbp of the **Blue Jays-Indians** game on the **Blue Jays** network; rotating the radio, I can hear both versions of the same game (SB-MI)
- 1010 **KLAT** TX HOUSTON - 8/3 2231 with **Houston Oilers** pre-season **FB** in **SS** (MH-NE) [Their **EE** broadcasts are on **KTRH 740** - Ed.]
- 1120 **WYFX** FL BOYNTON BEACH - 6/29 2058 noted weakly under **KMOX** with **UC** format (KJV-GA)
- 1190 **WSDQ** TN JASPER - 7/22 with C&W mx, female DJ; sign-off @ 1958 (KJV-GA)
- KYII** TX DALLAS - 7/22 2115 good with **CNN** **Headline News**; no sign of **WOWO** (KJV-GA)
- WBDY** WV BLUEFIELD - 7/22 2045 sign-off, mention of **WBDY-FM 106.3**, 10,000 watts (KJV-GA)
- 1240 **KDLR** ND DEVILS LAKE - 7/2 2347 fair with **TC**, local **PSAs**, pgm anncts, *KDLR Weather*; a daytime regular in **Winnipeg**, but clear reception at night indicates a dead band (MS-MB1)
- 1260 **KWYR** SD WINNER - 8/4 2244 good with ad for businesses in **Lemmon** and **Chamberlain** - ID (RD-IA)
- 1290 **WVOW** WV LOGAN - 8/4 2200 caught tailend of ID: *...on WVOW, Logan - Reds BB* (RD-IA)
- 1300 **KGLO** IA MASON CITY - 7/7 2330 good with *KGLO Comment 2000* competition promo for news tip of the month, mention of **Central Catholic Child Care** in **Mason City** (MS-MB2)
- KFLO** LA SHREVEPORT - 8/6 2350 good with promo for coverage of various pro sports teams this fall on **KFLO** (RD-IA)
- 1310 **WDOD** TN CHATTANOOGA - 8/4 2359 very good with soft piano instrumental - *WDOD, Chattanooga* ID (RD-IA)
- 1320 **KWHN** AR FORT SMITH - 8/4 2139 good with ID: *Playing more music more often, AM 1320, KWHN* - **GOS** song (RD-IA)
- 1350 **WDCF** FL DADE CITY - 7/23 2137 weak with country mx in **AU** conditions (KJV-GA)
- 1380 **KOTA** SD RAPID CITY - 7/7 2359 good with *You're listening to KOTA's Radio Classics Hour* (MS-MB2)
- WMPS** TN MILLINGTON - 7/14 2253 ID and **GOS** mx; very strong (MH-NE)
- 1430 **WFXP** IN INDIANAPOLIS - 8/1 1901 with ID *WFXP Indianapolis* and classic rock (SB-MI)
- KTYN** ND MINOT - 7/8 1817 with **ContChr** mx, ad for **State Farm Insurance**, *CLs - Great Bible Concert* (MS-MB2)
- 1450 **WLYV** IN FORT WAYNE - 8/4 2325 atop with *Oldies 1450, WLYV* ID; **Don Trelford** must've heard someone else on 5/23/91; **John Clemmer, Mark**

CJCL 1430 RADIO, 40 HOLLY STREET, 7TH FLOOR TORONTO, ONTARIO M4S 3C3

- Strickert** and I noted this as **WLYV** while in **Fort Wayne** for dinner last **Labor Day** (RD-IA)
- WXVW** IN JEFFERSONVILLE - 8/4 2338 weak with **Reds** network scoreboard show | **WLW** (RD-IA)
- WTCO** KY CAMPBELLSVILLE - 8/4 2259 good with ID: *This is your hometown station, AM 1450, WTCO, Campbellsville* (RD-IA)
- 1490 **WDAN** IL DANVILLE - 7/30 2115 atop with **Cubs BB** (RD-IA)
- 1520 **WTLN** FL APOPKA - 7/15 with **REL** pgms, **AM/FM** ID, power cut at 2030 & gone (KJV-GA)
- WKZQ** SC MYRTLE BEACH - 7/15 **ROK** mx, many local ads, 2029 sign-off mentioning **FM-101.7** (KJV-GA)
- 1550 **WARD** PA PITTSTON - 7/7 2235-2302 fair with sports-talk, local ads including *Pocono Playhouse*; quad-city ID *Pittston - Scranton - Wilkes-Barre - Hazleton*; slogan: **WARD - THE talk station** (KJV-GA)
- 1560 **WPAD** KY PADUCAH - 7/30 2259 weak with ID under **KCJJ's** **OC** (someone at the station wasn't paying attention!) (RD-IA)
- 1580 **WTTN** WI WATERTOWN - 7/27 2129 good with **Brewers BB** (RD-IA)

REPORTERS

- GK-TX** GARY KETTLER//Austin, TX//DXAS member
- JB-TX** JIM BOEHM//San Antonio, TX//
- KVJ-GA** KARL JETER//Stone Mountain, GA//HQ-150 + 4-ft loop, longwires
- MH-NC** MIKE HARDESTER//NC locations in loggings/GMC Jimmy w/fender antenna [Gee, I knew Fender made guitars, but not antennas, hi - Ed.]
- VAL-DX** SHAWN AXELROD, WAYNE MC RAE & LARRY SHEWCHUX (CIDX)//DX Bus at Valhalla Beach, MB/R-70 + 1500' beverage pointed 270°
- REH-ON** CHARLES REH//Leamington, ON//R-390A + Sanserino Loop + Realistic TR-3000 open reel tape recorder
- SB-MI** SCOTT BARNETT//Ferndale, MI//
- MH-NE** MIKE HAWK//Omaha, NE//R-1000, AT5-803 + 2' loop
- MS-MB1** MORRIS SORENSEN//Winnipeg, MB//RF-B65 barefoot
- MS-MB2** MORRIS SORENSEN//Killarney, MB//RF-B65 barefoot
- WN-MD** WALTER NISSEN//Silver Spring, MD//
- RD-IA** RICK DAU//Iowa City, IA//R-1000 + RW loop + West Virginia road map



GYDXA UPDATE

1240 kHz:

WATNNY Watertown	Charles Reh	Leamington, ON	362				
Totals:	1230	1240	1340	1400	1450	1490	Total
CHARLES REH Leamington, ON	63	75	85	66	78	82	449
MIKE HAWK Omaha, NE	24	14	14	16	29	11	108
MIKE HAWK Evergreen, CO	5	4	1	6	3	5	24

bold indicates updates

ABBREVIATIONS AND SPECIAL SYMBOLS USED IN DDXD-E

|| :parallel with or to - :to or into :00: on the hour AC:Adult contemporary AP:Associated Press BBD:big band BRN:Business Radio Net C&W:country & western CHR:contemporary hit radio CID:code ID ContChr:contemporary Christian EZL:easy listening EE:English FF:French GOS:gospel IRN:Interstate Radio Net jx:jingle LSR:local sunrise LSS:local sunset MLB:Major League Baseball mx:music nx:news NPR:National Public Radio OC:open carrier pbp: play-by-play PSRA:pre-sunrise authority PSSA:post-sunset authority QRM:man-made interference QRN:natural interference QTH:location REL:religious ROK:rock 'n' roll RS:regular schedule \$stereo SID:singing ID SRS:sunrise skip SS:Spanish SSB:Star Spangled Banner SSS:sunset skip TC:time check TT:test tones UC:urban contemporary UPI:United Press International wx:weather

73, Full

NRC FM Radio Log, 1991 Edition **U\$16.95;**
Includes listings by frequency, call letters, city/state - with locations, antenna height (in feet), horizontal/vertical power, address, stereo information, formats, networks, and construction permit info. **to Canada,**
 Now over 300 pages, with large, easy-to-read type, and in the popular 3-hole-punched 8.5x11" size. Order from NRC Publications. **U\$17.95**

Domestic DX Digest - West

DX Catches in the Western U. S. and Canada, with 24-hr. ELT

Wayne Heinen

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Aurora, CO 80013-3831
FidoNet: 104/108
(303) 699-6335 (prepaid only)
with 24-hr. ELT

SPECIAL

- 610 KYJC OR Medford
Returned to Air AdCon format //KFMJ-FM (formerly silent) (BF-CA)
Format now C&W (BF-CA)
- 930 KAGI OR Grants Pass
Format now C&W (BF-CA)
- 1240 KPOD CA Crescent City
Format now C&W (BF-CA)
- 1260 KSNO CO Aspen
7/25 0900 Still using these calls.. "KSNO, your country.. for the Roaring Fork Valley" (0W-CO)
- 1270 KAJO OR Grants Pass
Network now AP (BF-CA)
- 1300 KESI OR Phoenix
Format REL (ex-KDOV) (BF-CA)
- 1450 KDRW CO Silverton
7/15-7/18 Noted this station SILENT (RR-CO)
- 1480 KRRU CO Pueblo
7/14 & 7/18 Noted this station SILENT (RR-CO)
- 1490 KXRE CO Manitou Springs
7/18 0000 This station now SILENT (RR-CO)

Midnight to Midday!

- 880 KHAC NM Tse Bonito
7/15 0001 YL with s/off. Poor signal mixing w/ KRVN (TC-CO)

Midday to Midnight!

- 720 KDWN CA Lost Wages
7/26 1745 TLK prgm poor w/splash from KMPC. (MR-CA)
- 830 KFLT CA Tucson
7/26 1715-1735 REL prgms. Poor midday signal slogan "The Word of God and KFLT" (MR-CA)
- 1140 KRAK CA Sacramento
7/26 1740 C&W Mx poor signal. Splash from KSDO & KIIS. (MR-CA)
- 1230 KYVA NM Gallup
7/15 0000 ID as "Classic Oldies 12-30 KYVA" fair signal (TC-CO)
- 1320 KXOL OK Clinton
7/30 2237 Cards BB net... let ID break w/WWLS/KXTD/KXOL multi call ID & "Sports Radio" slogan... Unable to hear 640 or 1530. (0W-CO)
- 1360 KBUY NM Ruidoso
7/29 2359 Instrumental SSB, KBUY/KWES-FM s/off. off in mid sentence while giving addr. (0W-CO)

- 1360 KNRB TX Ft Worth
7/30 0000 Legal ID "Praise 1360" slogan hrd after KBUY s/off. followed by "Focus on the family". Fair signal (0W-CO)

Unidentified

- 1340 UNID
7/15 0015 "Crystal 93.9 and AM 1340" ID looped east west. (TC-CO)

TIS

- 530 WPH810 CO Montrose
7/18 1200 2 minute loop Colo Div of Wildlife w/ info on trout fishing, what to do if baby animals are found etc. Ment Phone # 249-3431. (RR-CO)
- 530 WNSV510 Denver CO
Corrected call from last report per Colo Higways Dept. (WH-CO) Call being used by six xmtrs. Dominant signal N-S w/ YL. Other YL/OM announcers all mixing underneath. Denver ushers in its very own Graveyard Channel! (0W-CO)
- 530 WNV5 CO Pueblo
7/14 1500 2:08 minute tape w/ area attractions and attractions. (RR-CO)
- 1610 KAF720 CO Curecanti Nat'l Recreation Area
7/18 1252 YL w/ 1 minute loop on hiking trails, boating camping etc. Range about 10 miles either side of the xmtr (RR-CO)

Contributors!

- (0W-CO) John Wilkins Wheat Aphid, CO - R-1000, 4.238' Anguilla Loop
(BF-CA) Bill Flynn via ADXR via John Wilkins
(MR-CA) Mike Riordan UCSD, CA - DX-440, Blaupunkt Car RX 5' whip
(RR-CO) "The Road Runners" Jeff Tynan & John Wilkins, receptions as they drove thru each area, Car RX.
(TC-CO) "Tent Campers" (RR-CO above) Needle Mountains in SW Colorado - Super Radio II

73
Wayne



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International DX Digest

Jim Renfrew

61 Wilcox Street
Rochester, NY 14607-3832

Foreign DX Catches. Times are UTC; for ELT, subtract 5 hours

With all of the IDXD spring and summer loggings, I'm prepared to encourage Paul to run a few extra issues during July and August. Thanks to all for year-round dedication in 1991!

TRANS-PACIFIC

We'll try an unusual presentation this time around, chronological! Perhaps this will give readers a sense of TPs as they unfold.

July 4 (Solar Flux=249, A=20, K=3)
0900 UTC: 891 weak het (F_{1j1}?), 1017 Tonga presumed w/Island mx & talk, threshold audio at 0920, 1026 presumed 12N//12K, 1476 unID Pacific station. 1000 UTC: 531 presumed Aussie het, 594 presumed 3WV het, 702 presumed 2BL het, 756 presumed 1YA het, 774 3LD Melbourne presumed w/woman giving Aust. mx @ 1010, 828 3GI het presumed, 830 KIKI Honolulu running S-9 from 1000 first check-in until near band-fade. A CW "beacon" heard on more or less 831 at 1030. 837 4RK het presumed, 864 Aust/NZ het, 873 2GB presumed het, 882 1YC presumed het. The 1000-1100 kHz NZ hets were all there (including 1044) but weaker than the presumed Aussies except 1035 2ZB presumed at 1025 w/very low audio in EE and 1026 12N/12K presumed at 1015 very poor w/man in EE, 1476 unID het, 1575 200 (very presumed w/weak EE audio by male anncr @ 1035. 1050-1100 UTC: 756 1YA Aukland // RNZ1, 1008 unID EE audio (12D presumed), 1620 2 stations in EE, one may be a mixing product from Vancouver BC, the other is clearly an Aussie RPH station w/female and male announcers talking. Female gave Melbourne address, so presume 1PPP. 1100-1245 UTC: 531 2MC West Kempsey, audio from 1122 until peak at 1243 (40 minutes after local sunrise here w/2MC IDs several times, commercials, phone # for dedications, pop mx show. Time check "25 til 10" at 1135 UTC. Good peaks. 639 2CS Coffs Harbor 1204 band fade at 1225 w/mx show, promo for a vacation trip, several mentions of Aust. locations and slogan "stereo 64" used often. Second station mixing also on 639, mention of Melbourne possibly one of the two ABC 3 stations. 702 2BL Sydney presumed w/phone-in talk show noted several times from 1120 to band fade at 1200+, 756 1YA // RNZ1 9700 threshold most of time from 1050 to 1200, 792 4QG presumed strong only on Pacific wire at 1159 UTC, 837 two EE audios here around 1200 presume either NZ or Aust., 1475 presumed Malaysia het on Asia wire at 1200 (excellent audio on 7/6), 1476 het continued from early morning until band-fade. Excellent

audio noted on 2BL 702, 2MC 531 and 2CS 639 until at least 1235, 2BL until 1247 and then dropped like a rock ... some kinda weird ducting?

July 5 (Solar Flux=247, A=11, K=2)
1017 Radio Tonga first noted w/audio at 0613, one hour after sunset in Tonga. Built to over S-9 at 1130, still above S-7 at eventual s/off (very late) at 1220 UTC. Annual Miss Heilala contest ran from about 0930 (discovered by Guy Atkins) until the 2 1/3 hour late s/off at 1220. Miss Heilala represents Tonga Tapu in the Miss South Pacific contest later in the year. Winners announced by the King of Tonga. Peaks to over S-9. We also wished that we were TV DXing, to say the least. (Perhaps your imagination is even better - Jim). 891 Radio F_{1j1} 2 presumed in Hindi at good level w/modern sub-continent mx at 0915. Fair level. 927 R. F_{1j1} presumed w/marginal audio, seeming // 891, but unsure at 0920. 1008/1026 12D and 12N/12K EE programming, but not // 9700 at 0930 fair to poor until band-fade at 1220. 1100-1300 UTC: 531 2MC w/audio at threshold at 1105 built to peak at 1227 S-7/8, many IDs as 2MC or MC light rr show w/male DJ, 612 4QR presumed at 1241 short appearance at band-fade w/Aussie male announcer, 702 2BL marginal audio at 1007, built to good levels around 1200, 774 3LD marginal at 1110, moderate at post-1200 peak, 830 KIKI Honolulu first tuned with excellent signal at 1112, playing original Beach Boys. A great experience to hear on the NW coast. Excellent levels throughout the evening. 1475 RTVM Malaysia Tagalog program from Kota Kinabala Borneo, heard at 1125-1135. Great carrier, but poor modulation. Audio barely audible when carrier at S-7. Most unusual for RTVM! Many other hets or brief audio on coastal Aussie frequencies in the post NW sunrise here, 1210-1245 (some were 1098, 1332, 1476, 1575), sunrise here at 1230 UTC.

July 6 (Solar Flux=251, A=4, K=1)
0900-1000 UTC: 1017 R. Tonga het noted on NZ wire @ 0510, 10 minutes past sunset in Tonga! Return at 0920 w/fair signal. 1026 12K/12N het noted on NZ wire at 0549 40 minutes past local sunset. Weak audio noted most of night. 891/774 R. F_{1j1} mostly hets w/some audio, primarily on 891, noted between 0900-1000. 1130-1245 UTC: 837 het and brief opening at 1139 in EE (4RK Rockhampton probable) and rock mx at 1215. 927 4CC Gladstone het?, 1026 weak audio @ 1141 (NZ or Aust.), 1206 het at 1144, 1475 RTVM Tagalog broadcast to Philippines. Good level from 1145 UTC until 1155 tune out,

female announcer in presumed Tagalog then into traditional gamelan orchestral mx. 1494 unID het, believe Asian het due to DFing w/4 differently oriented beverages (others agree, Taiwan or Japan most probable). 594 probable 3WV as other Aussies were booming in on lower band. Audio was too brief to parallel. 702 28L w/female reader at 1200 w/world nx until 1204, then Australian nx. Male nx reader at 1206 w/Aussie sx (including Rugby Union), followed a Oldies Rock show which ended at 1200, hosted by male DJ. Very good levels at times until band-fade at 1245. 612, 702 and 774 same general levels. 864 het noted all these nights. Since primary opening was to Southeastern Australia, was hoping for Tasmania. Audio during several mild back-to-back rock and roll numbers, no ID, no DJ. 873 2YE presumed @ 1222 male and female talking then into theme from "Days of Wine and Roses", fait to poor level. 531 2MC presumed in w/good audio 1220-1240. 1008 2 stations in EE mixing 1225/1230 UTC presume 12D NZ and an Aussie. Brief openings of probable Aussies noted on 1215, 1413, 1575, and 1620.

General Comments: Conditions on 160 meters were about the poorest of the season during our three days at Sombrio Beach, according to the folks on the 1832 kHz "Seance Net". Sunrise was 1230 UTC. The dawn enhancement period seemed to exactly match the 1.8 MHz experience this year, last hour before sun-up plus about 10 minutes. Probably due to disturbed solar cx, we heard nothing on 160 north of Borneo. Best receptions were from SE Australia at our local dawn all three days. [BC*DX]

TRANS-ATLANTIC

- 765 SENEGAL Dakar 0034 6/27. Carrier, bits of chant in heavy ORM. Semi-AU cx tonight, only Africans in. [MC-MA]
- 891 ALGERIA Algiers 0351 6/25. AA mx, poor to fair. [MC-MA]
- 1098 unID (CANARY IS. or SPAIN) 0242 7/18. SS vocal to good peaks. [MC-MA]
- 1107 SPAIN 0240 7/18. SS talk o/unID mx. [MC-MA]
- 1125 unID (YUGOSLAVIA or BULGARIA) 0237 7/18. Slavic talk by man, atop a mx station. [MC-MA]
- 1179 SPAIN 0317 7/18. Man in SS, fair w/1180 domestic and LA ORM nullified. [MC-MA]
- 1251 LIBYA Tripoli 0233 7/18. Female AA chant on big carrier in heavy sloop. [MC-MA]

- 1349 MAURETANIA (tent) 0041 6/27. Het. [MC-MA]
- 1458 unID 0314 7/18. Possible EE talk (UK or Albania?). [MC-MA]
- 1503 SPAIN 0221 7/18 SS talk by man and woman, poor. [MC-MA]
- 1512 SAUDI ARABIA Jeddah 0220 7/18. AA talk LOUD! w/local pest WSSH phased. [MC-MA]
- 1521 SAUDI ARABIA Daba 0218 7/18. Powerhouse [C before regular schedule programming. >>>> 0302 7/18 loud w/AA male chant. [MC]
- 1521 SPAIN 0302 7/18. Nx by woman in SS (fast, monotone style), o/u the Saudi's AA chanting. [MC-MA]
- 1530 VATICAN 0304 7/18. Slavic talk by man o/u WCKY. [MC-MA]
- 1539 GERMANY Mainfringen 0254 7/18. Bits of GG in WPTX sloop. [MC-MA]
- 1548 unIDs 0307 7/18. Strong carrier jumble. [MC-MA]
- 1575 SPAIN Cordoba 0328 6/19. Good carrier, low audio on SS mx. >>>> 0215 7/18 SS talk mixed w/possible GG station. [MC-MA]
- 1584 SPAIN 0327 6/19. Apparent nx by man in SS, poor to fair. >>>> 0210 7/18 Cl₄ mx, man in SS, fair/fluttery. [MC-MA]
- 1593 GERMANY Langenberg 0214 7/18. GG talk in sloop. Signal got loud by 0309. [MC-MA]
- 1602 SPAIN/unID 0326 6/19. SS talk by man, fair o/unID mx station. >>>> 0308 7/18 bits of SS talk in WUNR sloop. [MC-MA]
- 1611 VATICAN 0309 7/18. Slavic talk by man, poor to fair. [MC-MA]

Also hets (July 18) on 1293, 1296, 1314, 1323, 1413, 1476 and several other high-band TA channels. [MC-MA]

PAN-AMERICAN

- 670 MEXICO XETDR, Torreon 0558-0601 7/14. Taped s/diff announcement "R. Ranchito" IDs and mentions of Torreon, then NA to 0601 off air. [WH-CO]
- 890 unID 0730 7/14. Fair w/norteña mx in MS null. Either man or someone else is off frequency, with a loud het also noted. [MH]
- 980 MEXICO XENR, Nueva Rosita 0555 7/14. Heard "en Coahuila" two or three times, and W-R slogans. [MH]

STATION NEWS

- 1010 MEXICO XEKD, Cd. Acuña (tent) 0543 7/14. Norteña mx and Coahuila mention, loop pointed towards Cd. Acuña. [MH-NE]
- 1140 MEXICO XEMR, Monterrey 0539 7/14. 20dB over S₉ w/lots of M-R slogans and norteña mx. [MH-NE]
- 1210 VENEZUELA Barcelona 0039 6/27. YVZT good (loud!) w/R. Anzoategui (ahn-ZWAH-te-ghee) ID. Popped up out of graveyard-like mess and became totally dominant for a few minutes. AU cx, so no WOGL trouble (just WKDX-1200 sloop). [MC-MA]
- 1250 MEXICO XESC, Sabinas (tent) 0700 7/14. Poor w/mentions of Nueva Rosita and heard part of ID mentioning S_____, Coahuila, Mexico. There is a possibility of it being XESJ, but a lot of Nueva Rosita mentioning leads me to believe XESC. [MH-NE]
- 1292 MEXICO XEAP, Cd. Obregon SON 0530 7/14. Noted this putting a mild het on 1290. Easily separable w/2kc filter. R. Sensación IDs and mentions of Sonora. SS pop mx. Taped. [WH-CO]
- 1540 MEXICO XEHDS, Hermosillo 0615 7/14. Noted w/"La Poderosa" slogans and call letter IDs, obliterating KXEL. Taped. [WH]
- 1610 ANGUILLA The Valley 0011 6/27. Fair w/preaching, noted just before local sunset. Got superloud by 0043. >>>> 0818 7/1 fundraiser announcement that July is "double portion" contribution month. Black soul/dance hits were played. Good, despite some T-storm QRN. [MC-MA]

REPORT FROM MEXICO

Re DXN 7/29, XERB was on 1170 when I visited Cozumel off a Royal Viking cruise in March, 1989. Not only that, they had a giant sign in front of the transmitter promoting its 5000 watts. [but a lot of frequency changes in recent years - Jim] I visited Mexico City June 1-6, 1991. Not owning a current WRTH, I was not able to identify everything. Of note: 1080 presumed Toluca, fair days, 1200 R. Siesta, Toluca, fair days, better than 1080, 1210 unID R. Centro, fair nights, w/another SS under, completely devoid of XEB-1220 sloop, 1470 R. Canon, very weak at all times. Must be way out in the suburbs. Everything else was predictable and in concurrence with my old WRTH. On the whole, the stations do not seem to have mastered the art of overmodulation and distortion nearly as well as we have here. [PT-CA]

ALGERIA: RTVA's new R. Koran service (all religious) on 1422 (0800-1000, 1300-1500) and 254 (0300-0500) w/1.5 MW. IRTVA via Eric Beauchemin on R. Nederland Media Network via Mike Fern in NASWA Journal]

AUSTRIA: 585 and 1026 have been AN for some time. [OA in ARC]

COLOMBIA (all via ARC): 540 Em. Horizonte is now R. Autentica. 660 R. Uno now R. Autentica. [YHG in TRN] 580 RD Nacional now uses 100 kW. 650 RCN Antena 2 now uses 70 kW. [RRR in TRN] 780 R. Almirante now on 0900-0300 w/15 kW. [RRR in PAMPAS] 1040 R. Mil Cuarenta ex R. Super since 3/8/91. [YHG in PAMPAS] 890 R. Galeón (ex-895) 1580 LV de las Estrellas now 1000-0400 [Rodriguez/ WRTH-LANL]

DOMINICA: VO Life 740 ex-1060. [ARC]

ECUADOR: 610 Em. Gran Colombia (ex 615) heard in March. [YHG in PAMPAS in ARC]

EL SALVADOR: 800 YSAX LV Panamericana now 20 kW. [WRTH in ARC]

FRANCE: 1350 etc. no longer off Tuesday mornings. [BD,OA in ARC]

GUATEMALA: 640 R. Nacional, LV de Guatemala, power is now 11.5 kW. [WRTH in ARC]

ITALY: Adventist World Radio recently opened two MW outlets in Southern Italy, 1512 in Puglia and 1521 in Sicily. Both have 250 watts now, but may upgrade to 10 kW if official Italian licenses come through. [Jeff White and David Gregory on R. Nederland Media Network via Mike Fern in NASWA Journal]

NETHERLANDS: 1008 no longer AN. [OA in ARC]

POLAND: 812, 1305 and 1503 are the only frequencies now used 2300-0000 for FS. [OA in ARC]

USSR: 1215 R. Minsk has a new super-power tx here, as of 5/15/91. [Bengt A. Ericson in ARC] 1467 and 1548 FS transmitters are located in Moldava (new name for Moldavia). [RTVN Moldava via BT,OA in ARC]

VENEZUELA (all from ARC): All stations on Mundial net now on 24 hrs. [Lanza in TRN in ARC] 650 R. Vision Maracay now closes at 0400. 1183 LV de la Victoria (ex 1180). 1510 R. LV del Centro probably located in Valencia, Carabobo state is a new station testing since April with mx and IDs. The station announces 1510 but has been

heard on 1504, 1506 and 1508. Off the air since 5/9/91. [JSR in TRN] 1580 R. Occidental now on 24 hrs. [Lanza in TRN]

CORRECTIONS

Russ Scotka called on the telephone to remark that there is no R. Rebelde on 630, 1200 or 1210. Russ also points out that the 1990 and 1991 WRTH are incorrect in showing R. Metro Habana 860 as R. Progreso at night, for there is also a R. Progreso on 860 from a separate site.

CONTRIBUTORS

- [BC#DX] Sombrío Beach on SW coast of Vancouver island, BC; Guy Atkins (NRD 525 modified), John Bryant (NRD-525 modified), and Nick Hall-Patch. Antennas: 2500' terminated MW beverage 260° or 270° (Pacific), 1000' MW beverage at 280° (Asia), 1000' 220°. Asia wire largely unused. Nick present on days 2 and 3.
- [WH-CD] Wayne Heinen, Aurora CO; R-390A, w/4' loop.
- [MC-MA] Mark Connelly (WALION), Billerica MA, ICF-2010, R-600, 2 phased 37m longwires.
- [MH-NE] Mike Hawk, Omaha NE; R-1000, 2 foot loop
- [PT-CA] Pete Taylor, San Francisco CA; ICF 2010 w/Palomar MW and LW loops

**RADIO JAMAICA
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NAGGO HEAD (Kingston and environs) 720 KHZ (10,000w)
MONTEGO BAY 550 KHZ (5,000w)
SPUR TREE (Near Mandeville) 770 KHZ (5,000w)
GALINA (Near Port Maria) 580 KHZ (10,000 w)

CAPITAL STEREO (FM)

KINGSTON 92.7 MHZ AND 95.7 MHZ



Radio Jamaica Ltd.,
32 Lyndhurst Road,
P.O. Box 23,
Kingston 5, Jamaica
Telephone: 926-1100 Cables: Broadco

11th December 1983

Dear Mr. Renfrew,
This is to confirm your report of reception of Radio Jamaica on a frequency of 580Khz on 13th December 1982 as being correct and that the programme was broadcast by us.

Yours truly,
Wm. Wilkes
Chief Engineer,
RADIO JAMAICA LTD.

IN THE BEGINNING

BY JOHN D. BOWKER

THIS IS THE COMPLETE LIST OF U. S. BROADCAST STATIONS ON THE INDICATED FREQUENCY AS PUBLISHED BY THE FEDERAL RADIO COMMISSION IN 1934. "S" MEANS SHARED; "SH" MEANS SPECIFIED HOURS; "T" INDICATES TRANSMITTER LOCATION; "D" MEANS DAYTIME OPERATION ONLY; "U" MEANS UNLIMITED TIME. L = LIMITED TIME WITH DOMINANT STATION SHOWN.

Frequency (kc)	Call letters	Main studio and transmitter location	Power	Time designation
1070, clear	WTAM	Cleveland, Ohio	50 kw	U.
		T-Brecksville Village.		
	WCAZ	Carthage, Ill.	50 w	S.H.
		Tuscola, Ill.	100 w	D.
1080, clear	KJBS	San Francisco, Calif.	100 w	S.H.
		Charlotte, N.C.	50 kw	U.
	WBMT	Chicago, Ill.	5 kw	L-WBT.
		T-Addison.		S-WCBD.
WCBM	Zion, Ill.	5 kw	L-WBT.	
			S-WMBI.	

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1340 kHz

Logged from Jan 1, 1960 to Present

CKMG Radio Maniwaki
TELEMEDIA 1340 AM

Date of Last Update: June 15, 1991

163 A Des Oblats, Maniwaki, Qc J9E 1G4
449-1211

WKUL	AL	Cullman	Steve Francis	Alcoa, TN	199
WXOR		Florence	Charles Reh	Leamington, ON	572
WMRK		Selma	Joe Kureth	Uniontown, MD	740
WFEB		Sylacauga	Robert Kramer	Chicago, IL	607
AFRN	AK	Ft Yukon	Frank Merrill	Nenana, AK	177
KIKO	AZ	Miami	Dave Holten	Spokane, WA	1041
KPGE		Page	Rick Carr	Bloomington, IL	1231
KENT		Prescott	Don Kaskey	Sacramento, CA	562
KBTA	AR	Batesville	Wayne Helnen	Colorado Springs, CO	754
KZNG		Hot Springs	Wayne Heinen	Colorado Springs	718
KBRG		Springdale	Charles Reh	Leamington	736
KATA	CA	Arcata	Richard E Wood	Hilo, HI	2361
KWXY		Cathedral City	Gene Allen	Vallejo, CA	440
KMAK		Fresno	Richard E. Wood	Hilo	2452
KDOL		Mojave	Gene Allen	Vallejo	311
KSFE		Needles	Tim Hall	Chula Vista, CA	208
KORV		Oroville	Frank Merrill	Nenana	2052
KATY		San Luis Obispo	Frank Merrill	Nenana	2344
KIST		Santa Barbara	Doug Lamerson	Makapu'u Point, HI	2473
KOMY		Watsonville	Doug Lamerson	Kane'ohe, HI	2424
KDEN	CO	Denver	Esa Hanninen	Lemmenjoki, Finland	4537
KQIL		Grand Junction	Olle Alm	Abisko, Sweden	4535
KVRH		Salida	John Wilkins	Wheat Ridge, CO	97
WNHC	CT	New Haven	Niel Wolffish	Toronto, ON	365
WOCK	DC	Washington	Andy Rugg	Montreal, PQ	489
WTAN	FL	Clearwater	Alan Impreacia	New York, NY	1012
WWFL		Clermont	Shawn Axelrod	Orlando, FL	20
WROD		Daytona Beach	Andy Rugg	Montreal	1197
WTYS		Marianna	Emie Wesolowski	Omaha, NE	939
WPBR		Palm Beach	Emie Cooper	Provincetown, MA	1202
WFSH		Valparaiso	Steve Francis	Alcoa	393
WGAU	GA	Athens	Russ Edmunds	Parsippany, NJ	691
WIGO		Atlanta	Russ Edmunds	Little Silver, NJ	736
WBBQ		Augusta	Don Lynch	Lynn, MA	861
WGAA		Cedartown	Steve Francis	Alcoa	143
WOKS		Columbus	Charles Reh	Leamington	675
WALH		Mountain City	Steve Francis	Alcoa	66
WTIF		Tifton	Steve Francis	Alcoa	299
KSKI	ID	Hailey	Gene Allen	Vallejo	558
KSGR		Nampa	Olle Alm	Abisko	4367
WSOY	IL	Decatur	Charles Reh	Leamington	363
WJPF		Herrin	Shawn Axelrod	Winnipeg, MB	950
WJOL		Joliet	Esa Hanninen	Lemmenjoki	4114
WBVI	IN	Bedford	Charles Reh	Leamington	300
WTRC		Elkhart	George Santulli	Cranford, NJ	605
WLBC		Muncie	Carl Dabelestein	Lincoln, NE	599
KROS	IA	Clinton	Shawn Axelrod	Winnipeg	676
KFKF	KS	Kansas City	Esa Hanninen	Lemmenjoki	4396
KSEK		Pittsburg	Jeff Faloner	Clinton, ON	814
WCMi	KY	Ashland	Joe Fela	Newark, NJ	477
WBGH		Bowling Green	Carl Dabelestein	Omaha	587
WNBS		Murray	George Santulli	Cranford	820
WEKY		Richmond	Chris Lucas	Fairfield, CT	635
KVOB	LA	Bastrop	Rick Carr	Austin, TX	390
KRMD		Shreveport	Frank Wheeler	Erie, PA	1005
WFAU	ME	Augusta	Chris Lucas	Fairfield	280

WDME		Dover-Foxcroft	Don Voorhies	Oswego, NY	381
WGAW		Gardner	Ron Musco	Hartford, CT	55
WHOU		Houlton	Don Lynch	Lynn	298
WGAW	MA	Gardner	Don Lynch	Lynn	51
WNBH		New Bedford	Christian DeHaes	Chicoutimi, PQ	466
WBRK		Pittsfield	Tim Kerfoot	Weston, ON	320
WLEW	MI	Bad Axe	Morris Sorensen	Emsdale, ON	215
WLAV		Grand Rapids	Bruce Conti	West Warwick, RI	763
			Shawn Axelrod	Winnipeg	(Tie) 763
			Niel Wolfish	Winnipeg, MB	(Tie) 763
			George Santulli	Cranford	575
			Mike Csorbay	Canfield, ON	336
			Russ Edmunds	Parsippany	743
			Shawn Axelrod	Winnipeg	692
			Royal Oak	Fairfield	525
			Jerry Starr	Hubbard, OH	760
			Andy Rugg	Waterloo, ON	775
			Morris Sorensen	Leaf Rapids, MB	710
			Jeff Tynan	Parker, CO	705
			Niel Wolfish	Winnipeg	366
			Shawn Axelrod	Winnipeg	(Tie) 366
			Andy Rugg	Montreal	1016
			Charles Reh	Leamington	552
			Rich Eddle	St. Louis, MO	92
			Charles Reh	Leamington	659
			Frank Merrill	Nenana	1861
			Forest Osborn	Hooker, OK	775
			MB DXpedition*	Ames, MB	818
			Charles Reh	Leamington	714
			Shawn Axelrod	Winnipeg	639
			Shawn Axelrod	Winnipeg	648
			Frank Merrill	Nenana	2407
			Roy Millar	Marysville, WA	555
			Rich Eddle	St. Louis	1000
			Esa Hänninen	Lemmenjoki	3961
			Roy Millar	Marysville	1037
			Tim Hall	San Diego, CA	577
			Robert Wien	San Jose, CA	830
			Robert Wien	San Jose	900
			Don Lynch	Chelmsford, MA	275
			William Townshend	Washington, DC	314
			Andy Rugg	Montreal	360
			Carl Dabelstein	Lincoln	932
			Christian DeHaes	Chicoutimi	303
			Tim Kerfoot	Weston	320
			Charles Reh	Leamington	402
			Frank Merrill	Toledo, OH	537
			Don Lynch	Lynn	723
			Russ Edmunds	Syracuse, NY	605
			Andy Rugg	Montreal	811
			Andy Rugg	Montreal	731
			Wayne Heinen	Colorado Springs	513
			Shawn Axelrod	Winnipeg	127
			Rick Carr	Austin	1250
			Jeff Kosnett	Chicago, IL	3283
			Charles Reh	Leamington	190
			Shawn Axelrod	Winnipeg	949
			Steve Francis	Alcoa	363
			Charles Reh	Leamington	893
			Niel Wolfish	Winnipeg	1001
			Karl Jeter	Atlanta, GA	675
			Esa Hänninen	Lemmenjoki	4325
			Esa Hänninen	Lemmenjoki	4354
			Richard E. Wood	Hilo	2445
			Andy Rugg	Montreal	480
			Frank Merrill	Holland, OH	195
			Don Lynch	Lynn	454
			John Buehler	Toledo, OH	470
			John Buehler	Toledo	415
			Don Trelford	Scarborough, ON	397

WKRZ		Wilkes-Barre	Charles Reh	Leamington	351
WWPA		Williamsport	Don Lynch	Lynn	322
WOKE	SC	Charleston	Don Lynch	Boston, MA	815
WRHI		Rock Hill	Joe Kureth	Uniontown	385
WSSC		Sumter	Russ Edmunds	Little Silver	558
KJVV	SD	Huron	Frank Merrill	Milan, MI	757
KTOQ		Rapid City	Esa Hänninen	Lemmenjoki	4220
WBAC	TN	Cleveland	Frank Merrill	Milan	479
WKRM		Columbia	Dave Yocis	Fairfield, CT	840
WGRV		Greeneville	John Malicky	Pittsburgh, PA	417
WKGK		Knoxville	Roy Millar	Marysville	2138
WLOK		Memphis	George Santulli	Cranford	950
WCDD		Winchester	John Malicky	Pittsburgh	489
KWKE	TX	Abilene	Brett Hanavan	Chula Vista, CA	1009
KHLD		Burnet	Carl Dabelstein	Lincoln	704
KAND		Corsicana	Frank Wheeler	Erle	1139
KSET		El Paso	John Wilkins	West Des Moines, IA	974
KDUB		Lubbock	Roy Millar	Marysville	1439
KRBA		Lufkin	Carl Dabelstein	Lincoln	665
KPDN		Pampa	Roy Millar	Marysville	1375
KOLE		Port Arthur	Alan Imprescia	New York	1396
KTEO		San Angelo	Wayne Heinen	Colorado Springs	564
KVIC		Victoria	Carl Dabelstein	Lincoln	830
KTMP	UT	Heber City	Shawn Axelrod	Winnipeg	911
KMTI		Manti	Gene Nix	Billings, MT	465
WVNR	VT	Poultney	Don Voorhies	Oswego	188
WTWN		St. Johnsbury	Tim Kerfoot	Weston	360
WKEY	VA	Covington	Shawn Axelrod	Winnipeg	1231
WHAP		Hopewell	Mike Csorbay	Canfield	416
WJMA		Orange	Tim Kerfoot	Weston	400
WBLB		Pulaski	Steve Francis	Alcoa	195
KAGT	WA	Anacortes	John Campbell	Mainagen, Norway	4042
KSMK		Kennewick	Don Kaskey	Sacramento	545
KAPA		Raymond	Tim Hall	Vancouver, BC	180
KWWW		Wenatchee	Nancy Hardy	Aberdeen, WA	173
WOKE	WV	Charleston	Tim Kerfoot	Weston	780
WHAR		Clarksburg	Don Lynch	Lynn	533
WEPM		Martinsburg	Neil Kazaross	Pawtucket, RI	385
WMON		Montgomery	Rodney Valdron	Petit Rocher, NB	1030
WXEE		Welch	Jeff Kosnett	Charleston, WV	60
WLDY	WI	Ladysmith	Joe Kureth	Uniontown	810
WRIT		Milwaukee	Joe Fela	Newark, NJ	724
KSGT	WY	Jackson Hole	Robert Kramer	Chicago	1177
KYCN		Wheatland	Gene Allen	Vallejo	952
KWOR		Worland	Esa Hänninen	Lemmenjoki	4296
WNOZ	PR	Aguadilla	Cesar Objio	Santo Domingo, DR	180
WSTA	VI	Charlotte Amalie	Tim Hall	Crane Beach, Barbados	499
CFHC1	AB	Banff	Tim Hall	Lake Louise, AB	30
CIBQ		Brooks	Niel Wolfish	Winnipeg	604
			Shawn Axelrod	Winnipeg	(Tie) 604
			Esa Hänninen	Lemmenjoki	3543
CJLW1		Grande Centre	Roy Millar	Marysville	298
CBRY	BC	Alert Bay	Roy Millar	Marysville	226
CHNL2		Ashcroft-Cache Creek	Roy Millar	Marysville	208
CFKC		Creston	Roy Millar	Marysville	207
CKGF		Grand Forks	Roy Millar	Marysville	411
CBUF		Ocean Falls	Roy Millar	Marysville	304
CKCR		Revelstoke	Roy Millar	Marysville	304
CIVH		Vanderhoof	Richard E. Wood	Hilo	3025
CKWK	NF	Comer Brook	Mark Hattam	Hereford, England	2376
CFGB		Happy Valley	Esa Hänninen	Lemmenjoki	3043
CFYK	NT	Yellowknife	Esa Hänninen	Lemmenjoki	3163
CJLS	NS	Yarmouth	Esa Hänninen	Lemmenjoki	3494
CBON	ON	Chapleau	Tim Hall	Near Chapleau, ON	10
CKNR		Elliot Lake	Don Lynch	Chelmsford	613
CFCH		Hearst	Morris Sorensen	Leaf Rapids	840
CKAR1		Parry Sound	Jeff Falconer	Clinton	141
CKDK		Woodstock	Rodney Valdron	Petit Rocher	795
CHAD	PQ	Amos	Jeff Falconer	Clinton	381
CJAN		Asbestos	Charles Reh	Leamington	588
CJAF		Cabano	Andy Rugg	Montreal	253
CHRD		Drummondville	Andy Rugg	Montreal	73
CKMG		Maniwaki	Tim Kerfoot	Weston	240
CJQC		Quebec	Charles Reh	Leamington	646

CBGA7	Ste-Anne-des-Monts	Esa Hänninen	Lemmenjoki	3197
CKVT	Tamiscaming	MB DXPedition*	Ames	841
CFSL	SK Weyburn	Carl Dabelstein	Omaha	695
ZBM	BER Hamilton	Olle Alm	Göteborg, Sweden	3886
XEAA	BCN Mexicali	Esa Hänninen	Lemmenjoki	5159
XEZE	NAY Santiago Ixcuintla	Tim Hall	20mi SE of Cabo San Lucas, BCS	277
XECW	SIN Los Mochis	Esa Hänninen	Lemmenjoki	5524
XEOS	SON Ciudad Obregon	Tim Hall	Poway, CA	574
R Uno	CLM Bogota	Cesar Objio	Santo Domingo	998
BECA8	TAIWAN Matsui	Frank Merrill	Nenana	4627

* MB DXPedition [Shawn Axelrod, Wayne McRae]

The Drake R8 Communications Receivers ...by Rob Keeney

(a user-friendly review)

by Rob Keeney, 10315 Antioch, Overland Park, KS 66212-4332

It was not hard to become intrigued by the picture and published specs of the new Drake R8 in a recent DX NEWS. I immediately called the Drake factory for more information.

I spoke to the factory sales representative for about 15 minutes. He was very friendly, helpful, and knowledgeable. He didn't have to do much selling to get me to order a factory-fresh R8! The factory price, \$979 + shipping, was \$20 above what I was quoted by some of the mailorder outlets, but there were advantages to ordering factory-direct. Unlike the mailorder outlets and the Olympics, Drake was happy to take my American Express card. By using AmEx, I was able to double the factory warranty to 2 years. Drake also had a 15 day trial period. I could have sent the R8 back if I had been unhappy with it. How can you beat that?

The R8 was tested next to my year-old R71A. The first thing I noticed was a dramatic difference in noise. I think a lot of this has to do with the R8 using a backlight LCD display, instead of the vacuum fluorescent "noise generator" used by the R71A. My Radio West loop was able to operate only a foot away from the R8. It did not pick up any noticeable noise from the display. The loop had to be at least four feet away from the R71A to reduce the noise from the display. The noise blanker on the R8 seemed to be more effective also.

The R8 comes with 4 usable bandwidth selections for the BCB, 6.0, 4.0, 2.3, and 1.8 kHz. There is also a .5 kHz CW setting. The stock R71A had only 2 bandwidth selections. The audio on the narrow setting was sometimes too narrow for listening to broadcast stations. Both receivers sound best while using the optional external speakers. The Drake speaker was not available when I placed my order. It should be available by the time you are reading this. The R8 also has a 300mV recorder output, PLUS another 300mV output for a RTTY/FAX demodulator. This is really great for Utility DXers.

Sensitivity was measured by listening to several weak tropical band stations. Both receivers performed equally, but it was easier to copy the stations on the R8 because of the reduced noise. The Drake features a synchronous detector which improves the quality of broadcast signals. This really brings a weak signal up and out of the mud.

The passband offset and notch filter are very useful in reducing adjacent channel interference. My R71A did not have the passband tuning feature. This works great on removing hets, TV "birdies", and splash from strong local stations.

The R8 has the usual array of dual VFOs, clock and timer, 100 memory channels, two antenna inputs, 10dB preamp/kicks in above 5MHz). There is also a RS232C serial interface for computer control of the receiver. Drake will have the software package available shortly.

I liked the R8 so much I traded in my R71A on some RTTY/FAX equipment! I can't wait for the upcoming BCB DX season so I can really put the R8 to a real test. There can't be a better receiver out there for the money. Drake's phone number is 513-866-2421. Call them for more information, or I would be happy to try to answer any questions. You can reach me by phone or fax @ 913-649-1405, E-Mail on Prodigy (CBN45A), or by regular mail.

For Beginners

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Information and advice of interest to inexperienced DX'ers

We have received several questions which concern possible effects of the weather on medium-wave reception. Does temperature affect medium-wave reception? How about if the ground is frozen? Does rain or snow have an effect on medium-wave reception?

The answer to these questions is no, not to any significant extent. Now, to explain and qualify that answer, let's consider the ground and sky wave separately.

The ground wave is radiated from the transmitting antenna along the surface of the earth, and it follows the earth's curvature. At medium-wave frequencies it penetrates the ground down about 50 feet, as it moves along the surface. Electrical currents generated in the ground, and the electrical resistance of the ground cause part of the energy in the wave to be dissipated as heat. The rate of energy loss depends partly on the ability of the ground to conduct electrical current. Some of the best-conducting ground, and therefore having lower losses is flat land with deep moist loam, typical of farming areas in the midwest United States. Some of the poorest-conducting ground with higher losses is dry, rocky, rough-surfaced ground. Sea water has much lower losses than any ground.

The ground losses cause the ground wave to decrease in strength with distance from the transmitter (in addition to the weakening of the signal caused by the energy fanning out from the transmitting antenna in all directions). Depending on such factors as antenna design, transmitter power, frequency, and ground conductivity, the ground wave may give useable signals from less than 100 miles to as much as 1000 miles. Because the losses are distributed through the ground well below the surface, temporary weather effects on the surface such as rain, snow, or frost generally have little impact on the strength of the ground wave.

"Skywave" is the term given to the wave which leaves the transmitting antenna at angles above the horizontal and is reflected or refracted from the ionosphere back to the ground at distant locations (the reader who is now thinking "what is the ionosphere?" should consider that it is a zone of the upper atmosphere starting at an altitude of about 35 to 50 miles, sufficiently ionized by the sun's radiation to reflect or refract radio waves back to earth. It contains several sub-zones of maximum ionization which are termed "layers"). At medium-wave frequencies the sky wave occurs at night, including sunset and sunrise. Depending on distance from the transmitter, signals received at night may be a combination of ground wave and sky wave. Although the skywave leaves the antenna at angles above the horizontal, it is reduced by ground losses for a considerable distance, perhaps several miles, from the transmitter and a similar distance from the receiving antenna at the other end of the path.

Now to qualify the answer given above: there is convincing evidence that cold fronts and low barometric pressure affect radio reception and give opportunities for unusual DX. Experienced DXers have reported much enhanced reception during and after cold front passage. Cold fronts and low pressure areas are shown daily on the TV weather maps and usually occur together. Rain, hail, and lowering temperatures often accompany cold front passage and could be assumed to be the cause of unusual reception.

The process whereby cold fronts and low pressure areas affect radio reception is not clear. However, studies have shown a connection between these weather effects and the ionosphere. A study at the U.S. Army Signal Engineering Laboratories, Fort Monmouth, NJ during the 1950s showed a change in the height and intensity of ionization of the E2 layer during cold front passage. That study does not indicate what if any effect there would be on medium-wave DX. The point is that those weather effects can bring about a measurable change in the medium responsible for long distance reception. Whatever the connection, some veteran DXers find unexpected DX during and after cold front passage. So watch the TV weather maps this winter, and good luck!

References used in preparing this article include the Radio Engineers' Handbook by Terman, the NASA publication "Sun, Weather, and Climate" received from Gerry Thomas, the article "Influence of the Ground Near Transmitting and Receiving Aerials on the Strength of Medium-Frequency Sky Waves" by Knight and Thodwa, received from Randy Seaver, and a U.S. Government publication, AC00-6A, "Aviation Weather".

Radio Roundup

News of radio personalities, of interest to DX'ers

Greetings all ... Pittsburgh sportscaster Milton Love of WJAH has been named the NAB's Man of the Year ... in Chicago, radio station WLUP has filed a letter of protest with Arbitration, over WGN's on-air tactics during the recent sweeps ... former ADKA talker Mike Levine has signed on with WJAH ...

Now that baseball season is upon us, have you noticed how many people are listening to their radios again? With many teams going to pay cable for play by play delivery, non-cable types are turning to AM radio for the action and not just away games, as in the past ... NBC president of NBC Sports Dick Ebersol and his actress-wife Susan St. James have been awarded an FM license, #7.3, in Litchfield, CT ... ABC's talkmaster Bob Grant, whose real name is Bob Gigante, has received the Excellence in Broadcasting Award from the Italian-American Heritage and Culture Committee ... RKO General is now totally out of the broadcasting business with the sale of KFRC in San Francisco ... Despite a variety of rumors, Cindy Garvey has been tapped to fill in on the Sally Jesse Raphael talk show on the ABC Network until the fall when Deborah Norville will take over permanently ... WMAZ in Washington, D.C. isn't too happy with EFM Media, the syndicator for the Rush Limbaugh Show. They are expanding the show from 2 to 3 hours daily and want all affiliates to carry the entire three hour block, regardless of their needs. Affiliate defections will probably occur in some markets ... Tired of the male bashing on talk shows all across the country? WMEZ-1150 is offering a new show called Men's Quest, on Saturdays from 8 to 10 a.m. Host Richard Warden says that it is a show "... of men, by men and for men." It will focus upon the Men's Movement issues, e.g. divorced men's problems, relationships, stereo-types etc. ... Former WINS newsman Joe Gillespie has been named Director of News and Programming at WTOP-1500 ... In Chip Morgan's State of the Art Column for May, he talks about a new chemical memory storage device the size of a sugar cube. It was developed at the University of California. It is said to be capable of storing and retrieving one trillion bytes of data. The problem? The device loses all memory at room temperature! NRCers interested in antique radios may enjoy stopping by the Pavek Museum of Broadcasting housed at Brigham Young University, in Provo, Utah, if

Pete Kemp (KZ1Z)

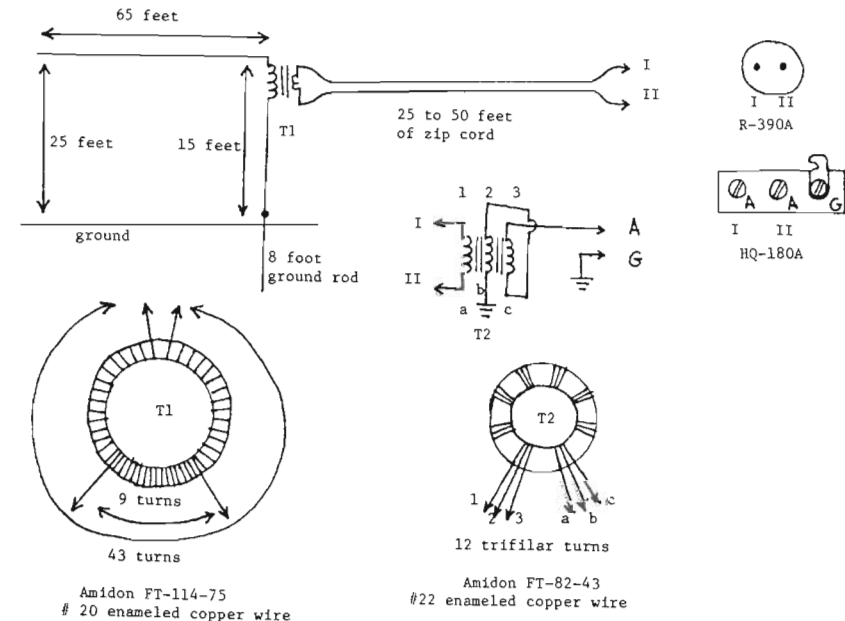
P. O. Box 73
Bethel, CT 06801-2203

they are in the area. It offers a wide variety of classic radios, number over a 1,000 radios and related memorabilia. The collection is a unification of the Joseph Pavek and P.R. McIntire collections, in conjunction with Bonneville International Corporation KSL will have some of the equipment on display, in Salt Lake City, on a rotating basis ... The FCC's Emergency Broadcast System (EBS) is being re-evaluated to look into the system with regards to current technology. While it has changed from the 640-1240 little triangles on the dial, technology has changed drastically in the last thirty years. The Federal Office of Emergency Management (FEMA) is assisting in the project. The EBS program is now under the direction of the Field Operations Bureau ... The Windy City's Dave Baum, on WBBM, has announced his retirement, after 20 years in the market. He will go into the consulting business ... The FCC is looking into relaxing its 12/12 Rule for station ownership. Numerous scenarios are being considered. The NAB has not been a party to the discussions. Insiders believe that without NAB support this approach will prove fruitless ... CBS and CNN are in discussions concerning the development of a mutual news gather operation. CBS has just let go 100 staffers and CNN is in the process of expanding its off shore news bureaus according to Duncan's Radio Market Guide. KABC has the highest gross sales, with billing around \$31.5 million. In second place is Chicago's WGN. WGN also gets kudos in their report, as being voted the most admired and respected radio station in the nation, by a poll of 600 general managers from around the country ... with the resurgence of American patriotism, Byron MacGregor, Canadian Newsmen on CNN back in the late 60's and early 70's who received a gold record for his dramatic readings of news commentary he aired called, 'The Americans, hopes that lightning will strike twice. He has just released another record, actually a cassette. On this cut he recites an editorial from the Toronto Globe and Mail, with America the beautiful playing in the background. NRCers wishing to contribute to the column are cordially invited to do so via, GENIE (P.KEMP3), CompuServe (72376,2557), FIDO (SWL, Ham and Broadcasting echo areas), amateur radio packet (KZ1Z @ K1UOL) and even the U.S. Snail, hi, at the address above. So much for now

Inverted L Noise-Reducing MF/VLF Antenna ... by Dallas Lankford

If you could reduce all of your regular MF noise sources and pests by 10 dB to 35 dB and your VLF noise even more for an outlay of two ferrite toroids, some Teflon pipe thread tape, 25 to 50 feet of zip cord, and an 8 foot ground rod, wouldn't you convert your inverted L to a noise reducing inverted L antenna?

Recently I have been experimenting with some remarkable noise reducing antennas for MF and VLF reception. My current inverted L version of these noise reducing antennas is shown below. I was introduced to these antennas by Denzil Wraight who informed me of the Wireless World articles by F. R. W. Strafford, "Screened Aerials," Nov. 25, 1937, pages 516 - 518, and "Vertical or Inverted 'L' Aerials," June 22, 1939, pages 575 - 577. Denzil also sent me details of the antenna transformer T1 which he designed. The toroid he used, a Siemens B64290K0618X830, is apparently not available in the USA, so I designed an equivalent transformer using an Amidon FT-114-75 ferrite toroid.



My inverted L has a 65 foot horizontal section, one end about 15 feet up at the roof of my house, the other end about 25 feet up at a telescoping TV mast, guyed opposite the direction of the horizontal section. If you already have a longer and/or higher horizontal section, you may use that. I included the dimensions of my inverted L to give you some minimum dimensions for adequate signal levels. An 8 foot ground rod is sunk in the ground directly below the low end by the wall of my house. Use #18 or 16 copper wire to connect the ground rod to the primary of the antenna transformer T1. It is a good idea to use some kind of strain relief for mounting the antenna transformer T1. High wind can whip the antenna around and eventually break the transformer leads. All of the connections were soldered. Merely twisting bare wires together is not a good idea.

The zip cord may be #18 stranded lamp cord, speaker wire, or true zip cord. Since the zip cord should be soldered at the secondary of the antenna transformer T1, you should make sure that both wires of the zip cord pair are copper. With some speaker wire, one of the pairs is stranded aluminum wire. Although I specified 25 to 50 feet of zip cord, you may use up to 100 feet of zip cord. For longer lengths of zip cord, you may need to retune the front end of your receiver.

If you use an R-390A or HQ-180A, you may connect the ends (I and II) of the zip cord directly to the balanced antenna inputs as shown. Be sure to remove the shorting link between the G and adjacent A terminal of the HQ-180A as shown. For unbalanced antenna input terminals, or for use with a VLF converter or accessories such as a phasing unit, you will need an antenna matching transformer.

My current antenna matching transformer T2 is an Amidon FT-82-43 ferrite toroid wound with 12 trifilar turns of # 22 enameled copper wire. The three wires are wound side by side as shown. As shown, T2 is a balanced to unbalanced 1:4 stepup transformer. For some receivers a 1:1 bifilar transformer may provide adequate signal levels. If you use the antenna with other receivers, you should try both antenna transformers and use the one which gives best signal levels.

The antenna transformer T1 is wound on a ferrite toroid made from 75 material, which is a semiconductor. Thus precautions should be taken to prevent the enamel of the windings from being broken and making direct contact with the ferrite material. Otherwise turns of the windings will be shorted, and the antenna transformer will not perform as it should. To insulate the toroid I wrapped it with two layers of Teflon pipe thread tape, Harvey's brand, type T-1/2 6F - 12. Harvey makes both a thin Teflon tape and a thick Teflon tape. This is the thick Teflon tape. I discussed insulating the toroid with someone at Amidon and they suggested using glass cloth electrical tape (which they sell). A single layer of GC tape was satisfactory. As for weather proofing T1, you are on your own. I haven't done anything. For the 43 turn primary you will need about 6 feet of # 20 enameled wire. Fold the 6 foot length into two 3 foot halves, and start winding at the center of the primary, leaving enough space between turns (in both directions from the center) for the 9 turn secondary windings to fit in between the primary windings. After that, the remaining primary windings should touch each other on the inner circumference of the toroid. There is just enough space around the inner circumference to accommodate all of the windings in a single layer. You may have to do some pushing on the primary turns to get the secondary turns flat in between the primary turns, especially at the inner circumference. For the secondary winding a 3 foot length of # 20 enameled wire is needed. The 6 foot primary length and 3 foot secondary length will give ample excess for about 1 foot leads. I used Teflon spaghetti to insulate the leads, and fixed the ends of the windings with plastic push-through cable ties. I also used a plastic cable tie to mount the finished antenna transformer to the edge of my roof (a short piece of 2 by 2 fir nailed to the fascia makes a convenient tie point through a hole drilled in the fir) and another cable tie through a knot tied in the zip cord for zip cord strain relief.

When the inverted L noise reducing antenna described above is compared to an ordinary 80 foot inverted L antenna in the MW band, the noise reduction can only be described as amazing. In some 37 years of DXing the MW band I must have tried at least two dozen noise reducing schemes, and not a single one of the previous schemes had any effect on noise except for nulling a single noise source with a good loop antenna. The inverted L noise reducing antenna does not null noise because it is not a directional antenna; it reduces noise in all directions. According to Strafford, these kinds of noise reducing antennas are most effective against nearby noise, i.e., against noise which originates in your house or apartment, in nearby houses, in nearby power lines, and so on. Noise which will be reduced or eliminated includes, but is not limited to, TV horizontal oscillator harmonics (HOH) and associated noise sidebands, fluorescent light noise, air conditioner compressor motor noise, air conditioner fan and heater fan noise, power line noise, and vacuum cleaner motor noise. The amount of reduction depends on the type of noise, the location of the noise source relative to the antenna, and perhaps other factors. Strafford said that noise reduction with a vertical noise reducing antenna was 30 to 100 (30 dB to 40 dB), but he did not specify what antenna his noise reducing antenna was compared to.

In my experience, the amount of noise reduction (both with my inverted L and with a 30 foot vertical noise reducing antenna) is not as great, namely 3 to 56 (10 dB to 35 dB) compared to my original inverted L. With my noise reducing inverted L, fluorescent light noise was reduced 10 to 15 dB, TV HOH and associated noise sidebands were reduced about 15 dB, air conditioner compressor motor and AC/heater fan motor noise were virtually eliminated, power line noise (60 Hz harmonics) were reduced to the threshold of detectability, vacuum cleaner motor noise was reduced more than 30 dB and virtually eliminated, and assorted regular noise "pests" of undetermined origin were reduced 15 to 25 dB. There is now only one irregular "pest" which ruins daytime MW listening, a 40 dB + monster which used to "kill" the entire MW band except for strong locals. It is still a serious problem even though it has been reduced about 20 dB. Fortunately it does not appear often, and never at night. It is my only remaining noise source where nulling it with my loop will produce clearer weak signal reception than the noise reducing inverted L.

According to Strafford, for maximum noise reduction the antenna transformer T1 should be mounted where the horizontal part of the inverted L changes to vertical. I found no difference in noise reduction with the antenna transformer T1 mounted at the base of the vertical part of the inverted L. Nevertheless, I currently have my antenna transformer T1 at the "knee" of the inverted L as shown above just in case there is any advantage to that configuration.

I tried my noise reducing inverted L antenna briefly with a borrowed Palomar VLF converter and got as much or more noise reduction as for the MW band. I am not an experienced VLF listener, so I don't know how this compares with other VLF noise reducing schemes, such as remotely located active broadband whips or loop antennas. However, I am sure VLF listeners will be pleasantly surprised by the performance of the noise reducing inverted L antenna.

Noise reduction begins to fall off in the 2 to 3 MHz range, and by 6 MHz there is little, if any, difference between the noise reducing inverted L and a standard inverted L antenna. Strafford discusses noise reducing doublet antennas for SW reception in the articles mentioned above. But I have not tried them.

With the noise reducing inverted L antenna perhaps 6 to 10 dB increase in signal levels has been observed at 15 MHz by reversing the zip cord lead connections (I and II) at the primary of T1. After that adjustment was made, the noise reducing inverted L antenna was an excellent all band antenna, about as good as a standard inverted L antenna at the higher SW frequencies.

I have compared my noise reducing inverted L antenna with a noise reducing vertical antenna similar to the one described to me by Denzil Wraight. When the vertical was mounted within a foot or two of the wall of my house, the inverted L was slightly quieter. When the vertical was mounted 50 feet away from the house, the vertical was slightly quieter. Thus it appears that some additional small amount of noise reduction can be obtained by optimizing the placement of the antenna. For my antennas and noise sources, the amount of additional noise reduction was so small that optimal antenna placement was not worth the effort. But that may not be the case in general. Since most DXers will have to compromise with regard to antenna placement, my recommendation is to do the best you can. Try to maximize the distance between your antenna and obvious noise sources, such as fluorescent lights, TVs, the AC power line to your house, and so on. The zip cord picks up little, if any, signal at low and medium frequencies, so it can pass near noise sources without contributing much, if any, to received noise.

I tried several variations on the noise reducing inverted L antenna described above, such as center tapping and grounding the center tap of the primary of the antenna matching transformer T2, and electrostatically shielding the primary of T2 from the secondary of T2. None of the variations reduced noise further, and center tapping the primary of T2 actually increased the noise slightly.

I would like to express my appreciation to Denzil Wraight for sharing his noise reducing antenna information and discoveries with me which made it possible for me to convert my inverted L antenna to a noise reducing inverted L antenna. I am convinced that these kinds of noise reducing antennas will be the wire antennas of choice for most MW listeners in the future.



PROCEEDINGS 1991

Fine Tuning's *Proceedings 1991* is this year's information-packed collection of in-depth reviews, articles, and features for the SWBC DXer. This 4th edition, at nearly 200 pages, will be a valuable addition to your reference bookshelf. Some of the most experienced DXers in the hobby have contributed to this 1991 volume, and each article has been thoroughly examined for clarity and content by the *Proceedings* Review Panel. Included are reviews of receivers and accessories, features on various topics including antennas, propagation, and more. This is an essential guide for any DXer.

Proceedings 1991 is shipping now. The cost is \$19.50 plus \$2.00 postage (US funds on a US bank). Outside of North America, postal costs are \$3.00 surface book rate (3-4 months typical delivery time) or \$15.00 airmail. Make checks or money orders payable to Fine Tuning Special Publications and mail to: Fine Tuning Special Publications, c/o John Bryant, RRT #5 Box 14, Stillwater, OK 74074 USA. Special notice: Limited quantities of previous *Proceedings* editions are available (1988, 1989, 1990). Price and shipping costs same as above.

The Broadcaster's Guide to DX

A tri-fold guide for use with reception reports explaining DX'ing, how the NRC was formed, and the importance of QSL's to DX'ers. Versions also available in Spanish and French. US\$1.50 for 20. Available from NRC Publications.

The RTU-1 Remote Tuning Unit for Active Whips ... by Mark Connelly

The RTU-1 varactor tuner is meant to tune an active whip remotely so that the benefits of tuned-circuit selectivity and dynamic range / gain enhancement can be realized. The result: better DX than when the whip is used in its customary broadband mode.

The DX role of a remotely-sited active antenna

The active whip antenna is useful in many DXing situations.

Two come to mind immediately:

- (1) when DXing from an apartment or a hotel where in-room operation of a loop is not feasible because of shielding and/or electrical noise. Also, for legal or logistical reasons, installation of an outdoor longwire is not possible. It is possible, however, to place an active whip in a window or on an outside balcony.
- (2) on mobile DXpeditions where the in-vehicle receiving set-up must be fed from an antenna mounted on the vehicle. A loop won't work inside a vehicle; furthermore, the specific situation may rule out a longwire (either because DXing is to be done while the vehicle is in motion or because the site chosen for stationary listening has no available space, is too crowded, etc.). A busy beach, park, street, or shopping-mall parking lot could be a good place for listening but an impossible place for a wire antenna.

The active whip also has merit at more conventional sites (e. g. at a wood-frame house in a suburban neighborhood where other antennae could be used) because it can be tower-mounted for improved signal pick-up and local noise rejection.

Limitations of Existing Remote Active Antennae

The vast majority of remote active antennae sold, whether of a loop or whip design, utilize broadband techniques. Both the active antenna's amplifier and the receiver's front end are exposed to a wide spectrum of signals, quite likely including those of high enough strength to cause intermodulation distortion ("spurs") and cross-modulation (strong-station audio superimposed on the audio of weaker stations). Some companies (e. g. Grove) offer tuners or attenuators to place in the coax. path from the antenna-head amplifier to the receiver input. In many cases, though, the worst overloading occurs at the front end of the remotely-sited antenna-head amplifier. "The damage has already been done" so to speak: in-shack tuners and attenuators offer no fix. A remedy must be applied where the problem exists: this is at the remote site, whether it's at the top of a tower or at a mounting bracket bolted to the exterior of a car, plane, boat, or truck.

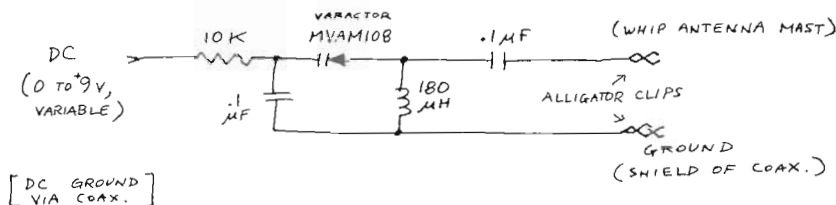
Early experiments with the MFJ 1024: I have used the MFJ 1024 active whip with a great deal of success. Typically, the RF output is passed through a passive or active preselector enroute to the receiver in order to reduce the likelihood of receiver-front-end-generated spurs. A DXpedition to the Marblehead, MA waterfront last January went well other than the distracting addition of WBZ-1030 audio in the background of some DX stations' audio (e. g. on BBC/Albania/Saudi-648). WBZ, at about 15 miles distance over salt water from the DXing site, was overloading the MOSFET front end in the MFJ 1024's amplifier. Additionally, "intermod." (mix spurs) showed up on a few channels due to the potent signals from WBZ-1030, WESX-1230, WROL-950, WSSH-1510, WJDA-1300, WLYN-1360, WEZE-1260, WEEI-590, WRKO-680, WKXS-1430, WILD-1090, and WHDH-850. The "RF hot" location by the sea in a large metropolitan area was a bit more than the broadband front end on the active whip could comfortably handle. A few shortwave spurs got into the act too, both from SW broadcasters and from powerhouse RTTY/CW utility stations such as WCC. Harmonics of LORAN-C (Nantucket, 100 kHz) showed up also.

All in all, considering the pounding the MFJ's front end was taking, it held up fairly well. Most frequencies were spur-free and perfectly DXable. 15 to 20 MW countries were logged in a less-than-2-hour session that started over an hour before sunset. Still, I thought improvements would help and that a tuned-tank-circuit approach, applied directly at the whip antenna, would be the solution. Selectivity, rather than added gain, was the desired objective, but if a few more dB of gain were to be had, all the better.

The RTU-1 Remote Tuning Unit

The simplest approach to tuning a remotely-sited antenna system is to construct a tank circuit consisting of a varactor diode, an inductor, and a few other needed components. The varactor diode, when biased by a DC voltage sent on a control line from the "shack", acts like a variable capacitor. My previous articles on "Varactor Diode Applications for DXers" and on the "RT-1 Remotely - Controlled Antenna Tuner" (1984) give an introduction to these useful devices. The articles are available through the reprints services of NRC and IRCA. A crude experimental set-up (Figure 1) was quickly "kluged" up and alligator-clipped onto the MFJ 1024. The results were impressive!

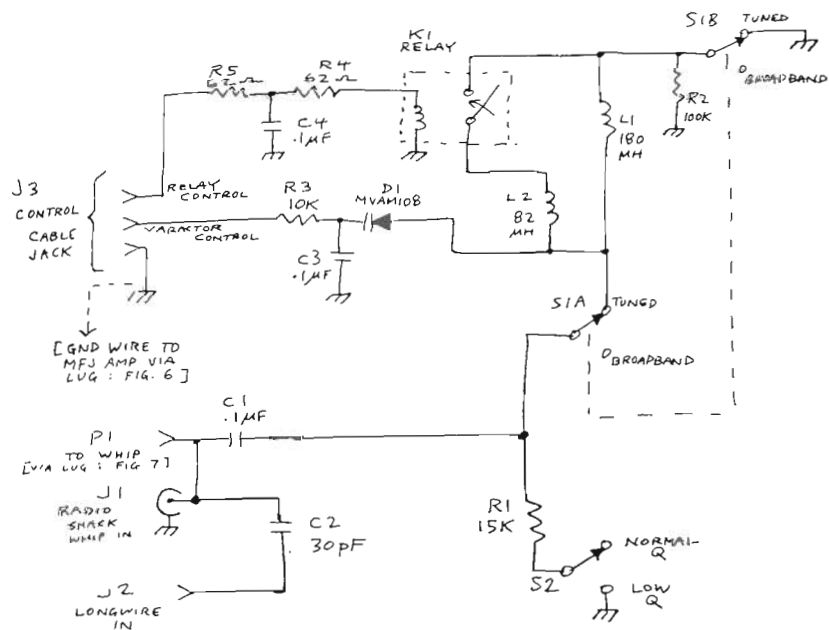
FIGURE 1: "KLUGE" TUNER SCHEMATIC



With the tuner, received signals were about 10 to 12 dB (2 S-units) stronger than when the MFJ 1024 was run in the normal broadband mode. When the set-up is properly tuned for the frequency of interest, no spurs are noted. By comparison, in the broadband mode, at the suburban home QTH (Billerica, MA), spurs are noted on:
 770 = (WSSH)1510-(WLVG)740 and (WRKO)680-[WRKO(680)-WEEI(590)]
 830 = (WSSH)1510 - (WRKO)680
 1360 = (WRKO)680 X 2
 1530 = (WRKO)680 + (WHDH)850

The sensitivity of the MFJ 1024 with the Figure 1 "kluge" tuner rivalled unamplified longwires of considerable length. Weak daytime signals used for sensitivity tests in this area include WLIX[NY] (o/WJMV/CJSB/CBT)-540, WMCA[NY] (o/WSYR/CJEM)-570, WCHP[NY] (o/WJR)-760, WNYC[NY] (o/unID "Love 82")-820, WCLZ[ME] (o/WSSR/CKDH/CKTS)-900, WOGL[PA] -1210, WQXR[NY] -1560, and WLIM[NY] (o/CBJ)-1580. At a low-RF-noise field site (near Shawsheen River marsh / Tew-Mac Airport: Tewksbury, MA), all of these were detectable and, in most cases, easily readable with the tuned MFJ 1024 feeding the Sony ICF-2010 receiver used for DXpeditions. One thing I noted about the "kluge" tuner is that its tuning range with a single inductance value did not quite cover the entire MW band. The ratio of maximum capacitance to minimum capacitance with the varactor diode is not as great as the comparable ratio of an air-variable capacitor. The Motorola MVAM108 varactor gives about 550 pF max. to 55 pF min. (10:1 ratio) versus 360 pF max. to 15 pF min. (24:1) typical of the air-variable. I wanted coverage from 500 kHz or less through 2 MHz or greater. A second inductance, switched in parallel with the first by means of a relay, accomplished the complete band coverage. At this juncture I decided that the results of tuning the whip were so good that a tuner box to be mounted to the MFJ head unit on a permanent basis would be a good idea. After some experimentation, the circuit of Figure 2 evolved:

FIGURE 2 : RTU-1 SCHEMATIC



J1 is used for a Radio Shack 20-008 whip. This can be used instead of the normal MFJ whip section with only a slight penalty to sensitivity. Doing this makes the mated MFJ amp / RTU-1 assembly much easier to pack into a suitcase for air travel. It also permits simpler operation on the roof of a car or other vehicle.

J2 is used if tuning a longwire or tree-height vertical is to be done (typically at a campsite or similar QTH). Using a 100 ft. / 30 m. wire instead of a whip can give tremendous (Beverage-like) sensitivity. Because of overload considerations, this should only be done at rural locations and in the tuned mode.

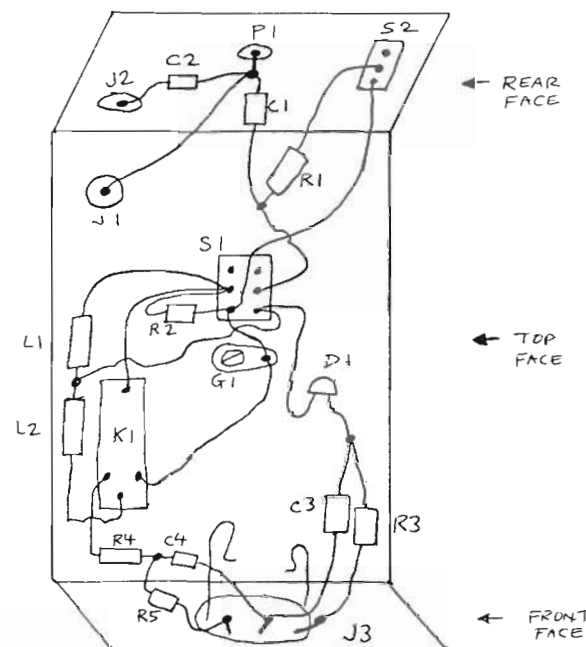
J3 connects the control cable from the shack. Control cable functions are varactor tuning (by means of a 0 to +9 volt variable DC supply) and tuning-range-relay switching (by means of a switched 0 V / +12 V DC source)

Toggle-switch S1 sets either the tuned mode for the active antenna or the normal broadband mode. Switch S2 selects normal or low Q (selectivity). Low Q is only used if two tuned-mode whips are to be phased. The functions of S1 and S2 could be implemented with relays if the active antenna is to be mounted permanently at a remote location (e. g. on a tower). Also, in such a circumstance, greater attention would have to be paid to weatherproofing. As my use of this system is primarily for set-it-up / take-it-down beach or mountain DXpeditions of (typically) 2 hours duration, switches are preferable for their simplicity. Generally, S1 is left on Tuned Mode and S2 is left on Normal Q.

P1 is used for the wire that is to be connected to the MFJ 1024 head-unit whip antenna input. A ground wire is connected to the MFJ 1024 circuit-card ground (/ coax. shield) from a lug on RTU-1 J3. Assembly instructions of greater detail follow in this article.

Construction Information

Figure 3 gives a pictorial of the components inside the RTU-1 box. Figure 4 shows hole locations. Table 1 is a parts list for the RTU-1 assembly.

FIGURE 3 : RTU-1 COMPONENT LAYOUT
(VIEW INSIDE BOX WITH BOTTOM COVER OFF)High Power AM Station
Planned for Caribbean

Radio World
-via Jerry Starr

by Alex Zavistovich

5. CAICOS ISLAND, BWI A New York-based engineer is working on a 100 kW AM station in the Caribbean that will blanket a large part of the Southern Hemisphere with its signal.

According to Bob Janney, currently employed as a maintenance technician at WNEW in N.Y., two Nautil 50 kW solid state AM transmitters and a combiner will be used to transmit from a tiny island in the Caribbean as early as January 1992. Construction of the facility is slated to kick off in mid-August.

According to Janney, the site has four construction authorizations: a 100 kW at 1580 kHz (The Atlantic Beacon, currently operating at 25 kW), two other 100 kW stations at 530 kHz and on shortwave, and a 50 kW facility at 100.1 FM.

It is the 530 kHz facility that Janney is constructing. The station will be operated under the Radiovision Christiana name.

Work on the station, located on South Caicos in the Turks and Caicos chain, is scheduled to begin in mid-August, with a projected completion date of January, 1992, Janney said.

The three-tower, dogleg system for transmitting the 1580 kHz signal is 265 feet tall, with top-loading giving it the equivalent of 345 feet of height. The 530 kHz tower is 500 feet tall, with no top-loading. Signal density at 1 km is approximately 7000 to 8000 mV/m, according to Janney.

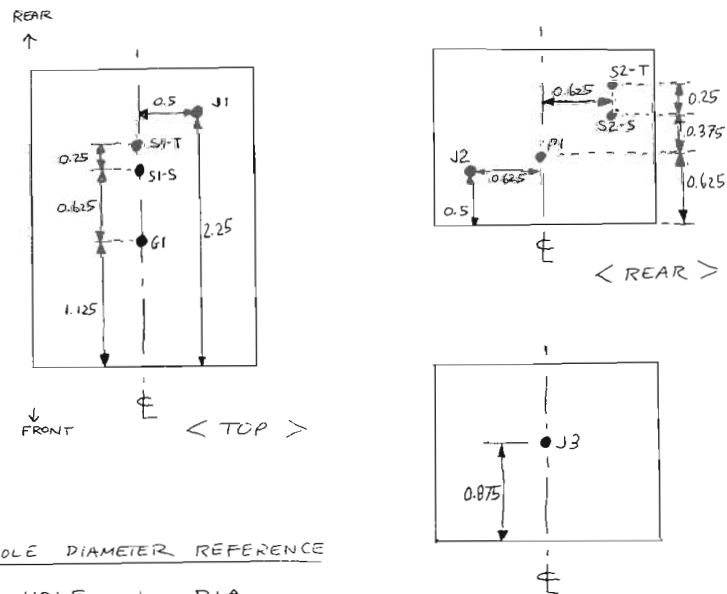
With towers of that height, coverage of the station will be extensive. Nighttime service contours are expected to reach Mexico, Cuba, the Bahamas, the Dominican Republic, Haiti, Puerto Rico—in all, "a fair portion of the Southern Hemisphere," Janney said.

Daytime service contours are expected to include Cuba, the Dominican Republic, Haiti, part of North Carolina, Florida and numerous other Gulf Coast states, he added.



BOX 6310
FORT ST JOHN, B.C
V1J 4H8

FIGURE 4 : RTU-1
HOLE DRILLING GUIDE
(EXTERIOR VIEWS -- DIMENSIONS IN INCHES)



HOLE DIAMETER REFERENCE

HOLE	DIA	
J1	0.375	} TDP
S1-T ₂₆	0.14	
S1-Shaft	0.25	
G1	0.125	
J2	0.3125	} REAR
P1	0.25	
S2-T ₂₆	0.14	
S2-Shaft	0.25	} FRONT
J3	0.375	

Table 1: RTU-1 remote tuning unit / parts list

Vendor codes:

ACT = Active Electronics /11 Cummings Park
/Woburn, MA 01801
/Tel. 1-800-677-8899

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

The Challenging Crystal Set

For hobbyists demanding the ultimate DX challenge, Ray Cole's publication detailing step-by-step procedures in building a crystal set is for you! Only \$3.00 ... order from the Publications Center.

HOS = Hosfelt Electronics/2700 Sunset Boulevard
/Steubenville, OH 43952
/Tel. 1-800-524-6464

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	RS	270-235	1
2	C1, C3, C4	capacitor, 0.1 uF	RS	272-109	3
3	C2	capacitor, 30 pF	MOU	ME-232-1000-030	1
4	D1	MVAM108 varactor	ACT	2 10MOR	1
5	G1	ground hardware -- including:			
5a	-	screw, 4-40 X.375"	MOU	572-01881	1
5b	-	hex nut, 4-40	MOU	572-00484	1
5c	-	solder lug, #4	MOU	534-7311	1
6	H	box-mounting hardware (Fig. 9) -- including:			
6a	-	hex nut, 6-32	MOU	572-00486	2
6b	-	split lockwasher, #6	MOU	572-00650	2
7	J1	BNC jack	RS	278-105	1
8	J2	red banana jack	RS	274-662	1
9	J3	stereo headphone jack	RS	272-312	1
10	(for J3)	solder lug, .375"ID	DK	ARF1068-ND	2
11	K1	relay (12V)	RS	275-233	1
12	L1	inductor, 180 uH	MOU	43LR184	1
13	L2	inductor, 82 uH	MOU	43LR825	1
14	P1	feedthrough terminal	HOS	885B	1
15	R1	resistor, 15K	RS	271-1337	1
16	R2	resistor, 100K	RS	271-1347	1
17	R3	resistor, 10K	RS	271-1335	1
18	R4, R5	resistor, 62 ohm	MOU	28SJ500-62	2
19	S1	switch, DPDT, on-on	RS	275-614	1
20	S2	switch, SPDT, on-on	RS	275-662	1

Some minor modifications are to be made to the MFJ 1024's amplifier box to facilitate use of the tuner. Table 2 is a parts list for modifying the MFJ amplifier (head) assembly.

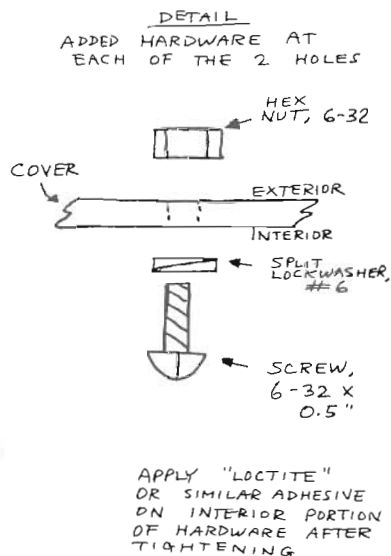
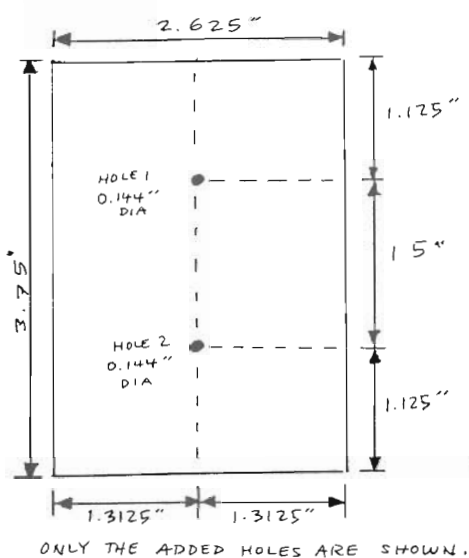
Table 2: modification kit for MFJ 1024 / parts list

Vendor codes: see Table 1

Item	Designator	Description/Value	Vendor	Vendor Stock #	QTY
[Hardware to connect antenna line to RTU-1] (see Fig. 7)					
1	-	screw, 4-40 X .5"	MOU	572-01882	1
2	-	hex nut, 4-40	MOU	572-00484	1
3	-	solder lug, #4	MOU	534-7311	2
[Hardware for mating RTU-1 bottom cover to MFJ amp. cover](Fig.5)					
4	-	screw, 6-32 X .5"	MOU	572-01890	2
5	-	hex nut, 6-32	MOU	572-00486	2
6	-	split lockwasher, #6	MOU	572-00650	2
[other associated hardware is considered part of RTU-1 (Table 1)]					
[BNC jack & associated hardware] (see Fig. 6)					
7	-	BNC jack (w/ nut)	RS	278-105	1
8	-	solder lug, .375"ID	DK	ARF1068-ND	2

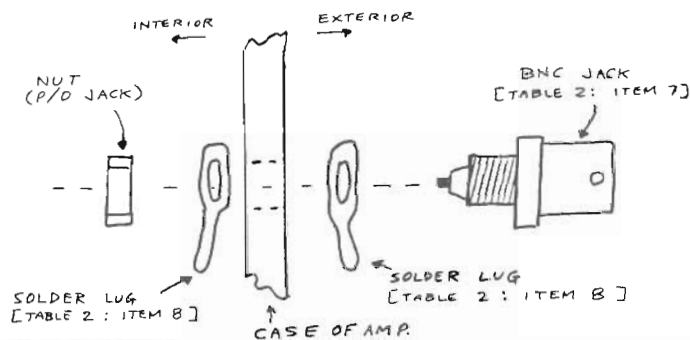
MFJ 1024 amp. box modification #1: Remove the four screws on the amplifier cover. Set these aside. Separate the cover from the amplifier box. Drill 2 holes on the cover and install hardware in accordance with Figure 5.

FIGURE 5: PREPARATION OF MFJ 1024 AMPLIFIER COVER



MFJ 1024 amp. box modification #2: Remove the coaxial cable from the MFJ amp. circuit board (make a note as to where the shield and the center conductor of the coax. cable had been soldered). Enlarge the hole through which the coax. cable had passed out of the box: the diameter should be 0.375 inch when done. Install a BNC jack (Table 2: Item 7) and 2 solder lugs (Table 2: Item 8), in accordance with Figure 6.

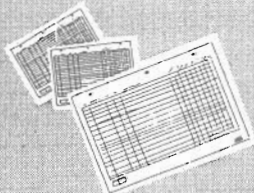
FIGURE 6: ASSEMBLY OF RF JACK ONTO MFJ AMPLIFIER BOX AT FORMER CABLE HOLE



Logsheets - By Frequency

110 sheets, 25 entries possible per sheet with space available to add your own columns. Punched for three-ring binders, full-size 8.5 x 11 inches, on heavy paper. US\$5.00 (25 sheets for US\$1.25).

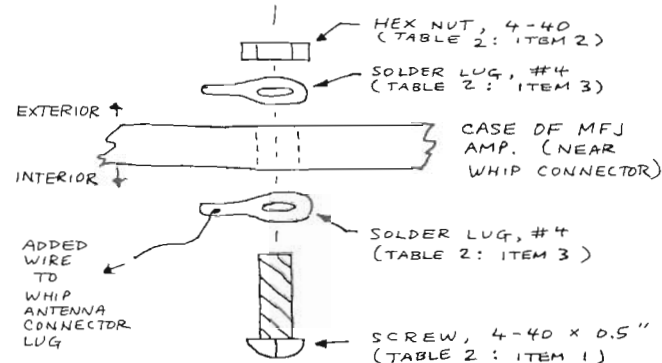
Order from NRC Publications



Use minimum length wires to connect the BNC jack's center pin to the circuit board location of the former coax. cable center conductor solder connection. Connect the added interior solder lug (that is on the BNC jack) to the circuit board location of the former coax. cable shield connection: again, use a wire of minimum possible length.

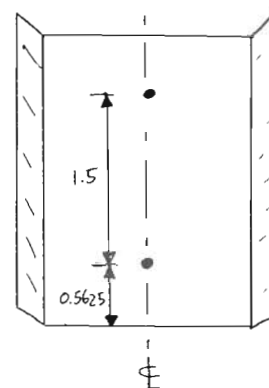
MFJ 1024 amp. box modification #3: Drill a 0.125 inch hole on the amp. box surface where the whip antenna connects. Install a screw, 2 solder lugs, and a nut (Table 2: Items 1,2,3) in accordance with Figure 7. Solder a minimum-length wire from the added interior lug to the wire which connects the whip mating hardware to the amplifier board.

FIGURE 7: ASSEMBLY OF ANTENNA-WIRE CONNECTOR ON MFJ AMP BOX



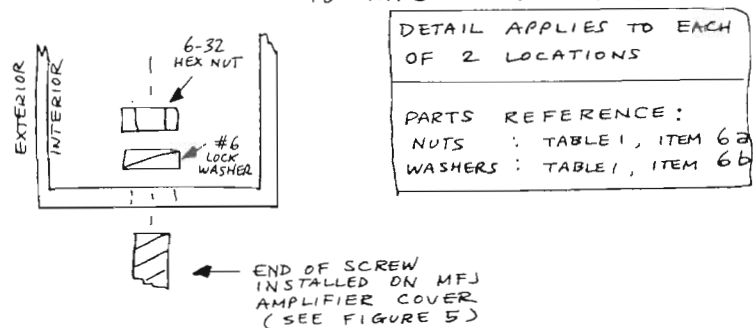
When done constructing the RTU-1 and modifying the MFJ 1024, re-attach the MFJ 1024's head unit cover (now equipped with hardware per Figure 5 above). Prepare the RTU-1 bottom cover (see Figure 8).

FIGURE 8: PREPARATION OF RTU-1 BOTTOM COVER



Attach the RTU-1 bottom cover to the two screws added to the MFJ head unit cover: see Figure 8.

FIGURE 9: CONNECTING RTU-1 BOTTOM COVER TO MFJ AMP. COVER



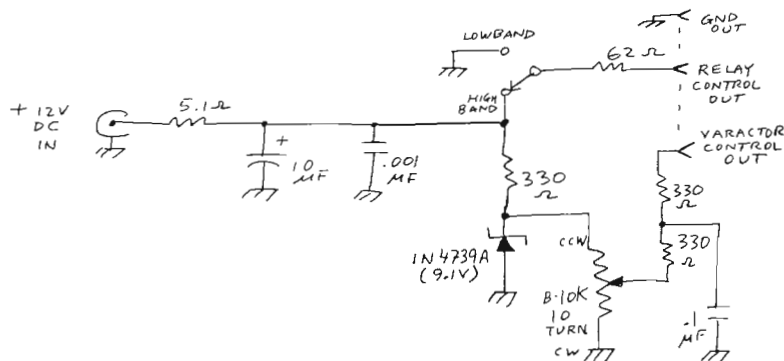
Re-assemble the RTU-1 chassis with the screws originally supplied with the box. Connect a minimum-length insulated wire from the solder lug on the MFJ amp. BNC jack to the lug on RTU-1 J3. Solder both ends. Connect a minimum-length insulated wire from the #4 lug near the antenna end of the MFJ box to RTU-1 P1. Assembly is now complete.

A length of coaxial cable may be run from the standard MFJ base unit to the modified head unit BNC jack. Use appropriate adapters, if necessary, for correct connector mating. Being able to separate the feedline from the amp. head allows for improved portability. You don't always need the 50-ft. cable that MFJ supplies permanently attached to the head unit. For mobile or motel-room use, a 10-ft / 3-m. cable makes more sense.

A separate pair of leads can be fed to RTU-1 J3. A stereo headphone plug should be used: tip = varactor bias (0 to +9 VDC, variable), & middle = relay control (0 VDC / +12 VDC switched). The connector shell can be used for a ground lead: this is only needed on long runs; a reasonable DC ground is provided by the coax. shield on shorter runs.

Figure 10 illustrates a simple control unit. Filtering is provided to reduce RF noise and AC hum.

FIGURE 10: A SIMPLE CONTROL UNIT



Other control units, including MWT-2 Option 5 and a two-whip controller / phaser will be presented in a companion article. MWT-2 Option 5 and the dual controller / phaser both eliminate the need for the MFJ 1024's base-unit box.

Possible Variations on the RTU-1 Design

1. bandswitching for more than 2 ranges or for 2 non-MW ranges

Switching and/or relays with additional inductors can provide more tunable frequency ranges. If only 2 ranges (but not MW) are desired, change L1 & L2. L1 = 2700 uH & L2 = 1200 uH should provide longwave (130 - 520 kHz) coverage. L1 = 12 uH & L2 = 5.6 uH should provide tropical band (1800 - 7600 kHz) coverage. Of course, the whip can always be switched to broad-band for full 0.1 to 30 MHz coverage (albeit with less sensitivity and more spurs).

2. completely remote operation

Relays (or conceivably diode or FET switches) could be used in place of all-mechanical switches. Tuned / broadband mode, normal / low Q, and frequency range could all be set from the "shack". Remotely switching the input from whip to longwire to ground (for a degree of lightning protection) could also be done. Fully-remote operation would be advisable for a whip antenna mounted on a tower. The RTU-1 box would have to be considerably larger. A different control-lines connector (DB-25 computer connector, military-style round Cannon or DIN connector, etc.) would have to be used to accommodate the larger number of control lines. Computer-type ribbon cable would be the obvious choice for the shack-to-antenna control link. Such an elaborate set-up, while certainly feasible, is beyond the scope of this article.

Use of the RTU-1 with other active whips

Besides the MFJ 1024, I have used the RTU-1 with a homebrew active whip. Improvements in gain and reductions in spurious responses were similar. There is no reason to suspect that the RTU-1 could not deliver comparable results with other commercial active whips (Dressler, et al) having high-input-impedance front-end amplifiers

The results of other DXers' experiments along these lines are always welcome - whether as formal articles, Musings / Forum contributions, or personal correspondence.

KTRF 1060AM

CORONA-NORCO, CA

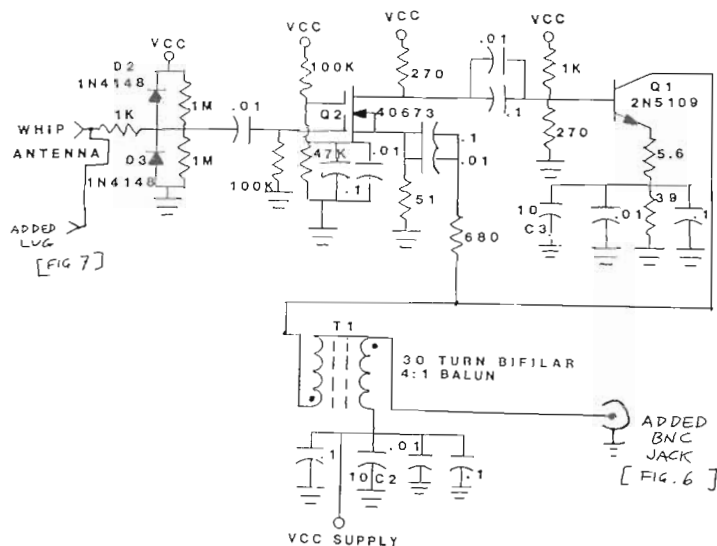
"All Traffic...All the Time"

PROGRAM GUIDE: EFFECTIVE SEPTEMBER 1

ILLUSTRATED BY GARY JONES

FIGURE 11: MFJ AMP BOX WITH MARK-UPS

MFJ-1024 REMOTE ACTIVE ANTENNA



Country music fans pitch in to help station

Saturday, April 6, 1991

By FRANCA LEWIS
Staff Writer

Hagerstown's newest country music radio station WPVG, 1160 AM, broke away from commercial tradition this week and asked listeners for money needed to keep on the air.

It was such an unusual thing to do that Station Manager Russell McGuire cleared the "radiothon" idea first with the National Association of Broadcasters.

The effort was deemed a success Friday by McGuire when he began tallying the financial pledges that rolled in on Wednesday and Thursday. Donations came in to the tune of more than \$2,000 from fans of the radio station, he said.

"We dipped into a reserve of goodwill," McGuire said. "There was a lot of generosity expressed by our listeners."

Although the appeal didn't raise all the working capital needed by the radio station, McGuire said it did help the ailing station. In addition, many listeners brought in their private collections of country music oldies that the radio station is using to build its own music library, he said.

"The radiothon meant a lot in terms of listener participation," McGuire said. "We went against the odds and exceeded our expectations."

McGuire said there were no complaints about what the station did "beyond one well-known media gadfly who said we were doing everything wrong." He declined to identify the local media personality who criticized the fund-raiser.

Fledgling country music station WPVG, whose financial troubles prompted a broadcast plea for money in April, is now fighting a possible eviction in District Court.

The nine-month-old radio station has been served notice that its landlord, Valley View Limited Partnership, wants the station out of its home at the College Plaza Shopping Center near Hagerstown.

In an odd twist, WPVG has no desire to stay. Instead, the financially troubled station is fighting the eviction to reduce the \$8,341 the landlord is demanding, according to Station Manager Russell McGuire.

In the meantime, he said, WPVG will continue broadcasting from its present office until "legally advised otherwise."

McGuire said the station was in financial trouble when he arrived on March 22.

Things were so bad, he said, the station signed a three-month contract with Valley View in December that gave the landlord free advertising for several apartment buildings in exchange for a reduction in rent.

WPVG plays traditional country music, tunes that date back to the origins of Nashville's Grand Ole Opry.

When it started broadcasting in late September, the station featured adult contemporary music via satellite, and then changed to rock 'n' roll. It became apparent that the formats weren't working, so the Palmers suggested going to traditional country.

It has inspired new interest among listeners, McGuire said.

"This station put the owner in a cash bind, and we're here to turn that around," McGuire said.

WPVG is owned by Peter Gureckis of Potomac, Md. "There's a lot of potential here," said his son, Mike, who helps with the local operation.

The station broadcasts from its offices at Robinwood Plaza, east of Hagerstown. The 150 signal tower is located in Funkstown. McGuire said the station reaches out to a 40-mile radius in the Tri-State area.

By CHEEVER GRIFFIN
Staff Writer

Tuesday, June 25, 1991

The contract had expired when McGuire took over, so he said one of the first things he did was call the landlord and verbally extend the agreement in an attempt to resuscitate the lifeless station.

"I was the doctor who arrived at the bedside of a patient whose viscera is hanging out and I'm being looked at to save the patient's life with one arm tied behind my back," he said.

Credits for the ads could reduce the station's rent payment by at least \$2,000, McGuire said.

Although there was no written agreement for the ads, McGuire said he believed he had received some breathing room to turn the station around.

Instead, the eviction notice was filed in court. "It hit us like a bolt out of the blue," McGuire said. A spokeswoman for Valley View said the owner is on vacation and that she could not comment.

McGuire added that whatever the court decides, the country station has no plans of folding.

"We're committed to the county and the state of Maryland," McGuire said about the station, which reaches out to a 40-mile radius in the Tri-State area.

The station has had problems for months. In April, it broadcast a radiothon, asking listeners to send cash so the station could stay on the air.

Hagerstown Herald-Mail
via Bill Cooley

FM DX Digest

Todd Brandenburg, KA0KAN

1337 SW Woodhull, #6
Topeka, KS 66604

DX on the FM band, from April through September

Greetings all! Hope the Perseids treated you well. First off, keep in mind that the next issue will be the last edition of FM DXD for 1991. The deadline for your stuff to be in my mailbox is September, Friday the 13th.

There are a few good meteor showers to look forward to later this year. For those who know nothing about meteor scatter, picture successive E-skip openings in different directions, lasting anywhere from less than a second to over a minute. The remaining ones this year are the Orionids, from October 2 to November 7, peaking on the 22nd, the Leonids, November 13 to 18, peaking on the 14th, and the Geminids, December 4 to the 16th, peaking on the 13th and 14th. In general, late night and early morning (midnight to sunrise) is the best time to catch them.

I won't make Bridgeport, but I hope I can catch many of you at Rick Dau's GTG October 19 in Sioux City, IA. 73 for now.

Bob Smolarek, 156 Oldwick Rd., Whitehouse Station, NJ 08889

5/16/91 Tropo
0630 98.5 WSAY NC Rocky Mount- C&W mx, calls last heard on 1480 in Salem, VA

0640 104.3 WCAS NC Tarboro- o/ WNCN, AC format

0657 105.1 WDCG NC Duram- CHR, G-105, o/ WNSR

0715 101.5 WRAL NC Raleigh- AC, over local WKXW!

0720 96.1 WYLT NC Raleigh- AC format

5/21/91 Groundwave

1200 43.1 WNJT NJ Trenton- new station, not too strong

5/29/91 E-skip
1942 96.7 KWCS TX Bridgeport- C&W, first E-skip of 1991

2021 95.3 WJDB AL Thomasville-

2024 95.3 WLWN MS Lumberton- ID's with Poplarville, Purvis

2039 92.3 WCKW LA Laplace- just over WXRK, Album Rock

6/29/91 E-skip

1425 96.1 WRXK FL Bonita Springs- Album Rock, '96 K-Rock'

1430 95.3 WOLZ FL Fort Myers- oldies

1433 92.9 WQLM FL Punta Gorda- soft AC

1436 93.5 WRGI FL Naples- oldies

1442 94.5 WCVU FL Naples- beautiful music, 'Seaview' slogan

1443 94.5 KSMB LA Lafayette- CHR, in with WCHR & WCVU

1445 96.9 KZMZ LA Alexandria- CHR, remote broadcast

1449 94.9 WYNF FL Tampa- Album Rock format

6/30/91 E-skip

1200 94.9 ZPB BERMUDA Hamilton- MOR format, new country! (Congratulations! -trib)

1300 89.1 ZBM BERMUDA Hamilton- CHR format 7/1/91 E-skip

1710 92.1 KRST TX Seabrook- classical format

1717 92.1 WJMG MS Hattiesburg

1725 92.9 KKBQ TX Pasadena- CHR, '93-Q', very common

1755 90.7 KLSA TX Alexandria- strong o/ WFUV, NPR program

1800 92.1 WJNS MS Yazoo City- country, 'Star-92' slogan

2000 100.5 WHMA AL Anniston- country, 'Alabama 100'

2001 102.7 WXBM FL Milton- country, ID's with Pensacola & Mobile

2003 101.3 WJDQ MS Meridian- CHR, 'Q-101'

2005 99.9 WKRG AL Mobile- AC, 'Coast 100', over WHXT

2017 97.1 WOKK MS Meridian- country, over WQHT!

2019 98.7 WIIN MS Vicksburg- country, 'WIN-FM' over WRXS!

2022 97.3 WJAD GA Bainbridge- CHR

2025 96.9 WDJR AL Enterprise- Album Rock format

2035 97.9 WBAQ MS Greenville- beautiful music, over WSKQ!

2036 104.9 WFXO MS Iuka- 'The Tri-States Fox'

2040 102.5 WJKX MS Ellisville- country, 'Hattiesburg's Kix-102'

2042 102.5 WFMF LA Baton Rouge- CHR, 'Hot 102'

2049 103.7 WQEN AL Gadsden- Album Rock

2050 103.7 WHER MS Hattiesburg- country, 'The Eagle'

2051 106.5 KQXL LA New Roads- Urban, 'Baton Rouge's Q-106'

2052 103.3 WKJN LA Hammond- country, over local WPRB

2100 95.9 WBBN MS Taylorsville- 'B-96 Pine Belt country'

2100 96.7 WQFX MS Gulfport, urban, ID's with Biloxi

2107 99.7 WJMI MS Jackson- urban, 'Power 99'

2120 104.1 KJLO LA Monroe- country, 'K-104' slogan

7/7/91 Tropo

0003 96.7 WKJX NC Elizabeth City- country, 'Kix' slogan

0007 107.5 WKRE VA Exmore- country, over WBLS

0100 107.7 WXXI VA Windsor- religious format B!! Nienajady, PO Box 2999, Clifton, NJ 07015

Equipment: Pioneer TX-9800 modified or GE Superadio mod to the max at work or Audiovox car radio modified and AFC deleted.

6/8/91 Tropo-scatter and E-skip at Rich Shaftan's DX GTG

0702 104.9 WVDL PA Scranton- 'Lite 105' and local mentions finally! logged at home
 1926 92.5 KKNG OK Oklahoma City- muf 107MHz very short time
 6/7/91 Tropo scatter
 1407 92.3 WFLY NY Troy- WXRK off! Others were off, too.
 1416 92.3 WYST MD Baltimore
 6/9/91 Tropo-scatter
 0935 107.7 WEMR PA Tunkhannock 'Y-107.7' and local mentions
 1005 92.5 WBEE NY Rochester
 1108 107.5 WYCL PA Boyertown- WBLS off!
 1130 107.5 CBCK ON Kingston- talk show about immigrants to Canada, other NJ DXers were // this with each other on the phone. Came in several times
 6/17/91 E-skip
 1800 92.1 WJNS MS Yazoo City
 1815 100.1 KMYQ LA Bastrop- 'The River' strict! local mentions
 1817 102.5 WAGR MS Lexington- local mentions
 1818 105.3 WWZQ MS Aberdeen- 'Cardinals BB net'
 1819 104.9 unID- same BB game as above- KTOC?
 1820 104.1 KJLO LA Monroe- 'Jello 104- refrigerator us!- Hi, I just couldn't resist! It was 'K-104' and local mentions
 1821 104.9 WFXO MS Iuka- 'TRI-STATES FOX'
 1836 107.5 KXKZ LA Ruston- mention Louisiana over WBLS!
 1845 100.5 WBLE MS Batesville
 6/18/91 Tropo-scatter: 92.3, 96.3, 97.9, 99.5, 104.3, 106.7 NYC locals off the air!!
 0035 106.7 WMJX MA Boston- weak
 0045 105.7 WIZN VT Vergennes- easy catch
 0052 106.7 WRKZ PA Hershey- 'Z-107' and local mentions
 0058 97.9 WWSH PA Hazleton- strong
 0120 99.5 WGFB NY Schenectady- 'Oldies 99.5'
 0129 104.3 WBSB MD Baltimore
 0135 97.9 WIYY MD Baltimore- '98 Rock'
 6/29/91 E-skip
 1438 92.9 WQLM FL Punta Gorda- 'Lite 93' and 'Southwest FL's lite mx'
 1442 99.7 WJMI MS Jackson- local mentions
 1443 95.7 WNLJ FL Clearwater- 'Mix-96' strict, local mentions and Tampa mentions
 1445 96.9 KZMZ LA Alexandria
 1510 97.7 WDBH LA Natchitoches- Que Pasa?
 1515 92.1 unID- 'oldies 92.1', NOT WSEN
 1522 93.7 KITT LA Shreveport- E-skip pest
 1530 99.3 WQEZ FL Fort Myers- note: many mentions of Ft. Myers but called themselves 'Classic Rock-99'- new format, new calls?
 1540 92.1 WCTQ FL Venice
 6/30/91 E-skip
 1200 94.9 ZFB BERMUDA Hamilton- local mentions, new country! (Congratulations! -trb) Thanks to call from Rich Shaftan.
 7/1/91 E-skip
 1700 95.3 KQKI LA Bayou Vista
 1702 88.5 WAMU DC Washington- very strong TrS or Backscatter?!

1710 92.9 KJEF LA Jennings
 1715 96.1 KYKZ LA Lake Charles- ad for fireworks, 4 boxes of sparklers for \$1.00 at Angelos

1721 92.1 WJMG MS Hattiesburg- local mentions
 1725 92.1 KRIS TX Seabrook- over WJMG a few seconds
 1735 92.9 KKBO TX Pasadena- full ID, rare
 1745 103.3 WKJN LA Hammond- 'Cajun 103'
 1800 92.1 WJNS MS YooHoo City- (aka Yazoo City- trb)
 1830 had to leave
 1940 E-skip back, driving in Wallington, Garfield, Elmwood Park, Clifton and Passaic on the modified Audiovox car radio
 1940 92.5 WYUU FL Safety Harbor
 1943 93.7 KITT LA Shreveport- strong
 1945 101.3 WJDD MS Meridian
 1955 93.3 WQUE LA New Orleans
 1956 92.9 WBLX AL Mobile
 2010 93.7 WQID MS Biloxi
 2018 96.5 WMJJ AL Birmingham- 'Majic 96'
 2125 92.5 KKNG OK Oklahoma City- now home DXing
 2127 95.3 WADI MS Corinth
 2130 97.7 KDBH LA Natchitoches
 2140 100.1 KMYQ LA Bastrop- 'The River'
 7/2/91 E-skip at work in Clifton
 1050 96.1 KQHT MN Crookston
 1104 96.9 KMFY MN Grand Rapids
 1220 91.3 KUWS WI Superior
 Russ Edmunds WB2BJH, 753 Valley Rd, Blue Bell, PA 19422

Local:

88.1 WJNT NJ Trenton is now s/on 0800 and running predominantly rock and oldies. Originally slated for mostly news and public affairs, state budget cuts forced a change.
 7/9/91 Tropo
 91.9 unID- Sombod here this and other prior days w/ MoYL-sounding format and several times a fairly clear WCER-FM call (or phonetically similar, with the 'E' being the least certain letter). Heard both around 6700 and 1800, but not much after this date.
 7/11/91 Tropo
 0705 93.1 WPOC MD Baltimore- w/ Dolly Parton record, ID, promo, weather, way atop freq.
 7/17/91 Tropo
 0700 97.9 WIYY MD Baltimore- state and local news, ID
 0706 99.1 WHFS MD Annapolis- w/ 'Modern Rock Morning Show', ID
 7/18/91 Tropo
 0714 98.3 WKJY NY Hempstead- w/ Billy Joel record, ID, traffic report
 0755 95.3 WHFM NY Southampton- w/ ad for Long Island Savings Bank, 'Lite 95' and ID
 0817 102.3 WMMJ MD Bethesda- w/ 'Magic 102.3', TC, traffic, ID
 0823 101.7 WRKE DE Ocean View- w/ 'Kiss 101.7', sports, traffic, weather, ID
 7/23/91 Tropo
 0706 104.7 WQHQ MD Ocean City- w/ weather, ID stating 'Ocean City-Salisbury'
 7/25/91 Tropo
 0900 95.3 WSPI PA Shamokin- gave me a clue to this opening, atop w/ C&W and ID
 0909 93.5 WTPA PA Mechanicsburg- w/ ad for Van Nuys Tire, TC, weather, ID as 'Mechanicsburg-Harrisburg'

1023 105.5 WMGH PA Tamaqua- 'Magic 105.5' w/ music, ID, Travel agency ad
 1105 103.7 WNNJ NJ Newton- 'Power 103.7FM' w/ rock and ID o/u WXYC and WIBF slop
 1110 97.7 WHOT (?) PA Jersey Shore- ex-WRKK, 'Hot FM' w/ rock, many local ads and ID (Russ, I think the calls are WHTO -trb)
 1116 100.1 WUFM PA Lebanon- finally out from w/ slop from WKSZ and co-channel WJRZ with weather, ID, ads
 1124 96.7 WPGM PA Danville- with ad, TC, ID, rock
 1128 95.9 WBNE PA Benton- 'your home of country music' with a 'Christmas in July' promo and ID
 7/26/91 Tropo
 0653 92.3 WYST MD Baltimore- with traffic and ID
 7/28/91 Tropo
 1505 95.3 WDNH PA Honesdale- with PSA about a lost girl from a camp near Tannersville, PA
 7/30/91 Tropo
 1750 WDBA PA DuBois- with local baseball game, mentioned call. O/u pesti WRQX-DC and WYCL slop
 8/2/91 Tropo
 0647 102.7 WXYX MD Baltimore- 'Y-103' w/ with promo, music, ID and slogan
 0650 95.3 WKHK VA Colonial Heights- with C&W and ad for Southern Cadillac-GEO and events at Colonial Williamsburg.
 0655 90.5 WYJY VA Fredericksburg- with religion, promos, ID and '90-Joy'
 0657 94.9 WJQI VA Virginia Beach- with MOR and 'Joy-95' and local ad
 0659 99.7 WYFI VA Norfolk- with promo and soliciting listener calls at 804-436-4336 and 0700 ID
 0707 99.3 WVES VA Accomac- with add or Shore Savings, a firm in Pocomoke City, MD and ID following news
 Rick Dau, 401 Emerald St #9, Iowa City, IA 52246
 7/19/91 Tropo
 1324 106.9 KROC MN Rochester- fair to good with end of ad: 'distributed by the Pepsi-Cola Bottling Company, Rochester', then promo by DJ 'This week on 106.9 KROC' then lost
 1410 104.7 KRES MO Moberly- good with 'Kres Country' and current temps in Moberly and Columbia.
 2215 93.3 WKZW IL Peoria- very good with jingle ID 'The most music, KZ-93' into Michael Bolton song.
 2228 92.7 WGBQ IL Gatesburg- good with "Q-93, western Illinois' favorite music FM"
 2311 94.7 KSHE MO Crestwood- good with 'K-Sho... we rock St. Louis'. (Rick, note city of license -trb)
 7/21/91 Tropo
 1532 98.5 KTJJ MO Farmington- fair with promo for The Trading Post 'weekend afternoons on J-98'
 1644 98.5 WACF IL Paris- good with carted promo "You're listening to American Country Countdown on FM 98.5 WACF"
 Mike Hawk N00SY, 10212 P St., Omaha, NE 68127
 Equipment: Sangpan ATS-803 w/2-150 kHz filters, Archer pre-amp, R.S. 6-el at 28 ft, notch filter
 6/12/91 Tropo
 0200 91.7 KRSW MN Worthington- finally heard ID after over 2 hours of listening to CLA

6/19/91 Tropo
 2024 107.9 KLTE MO Kirksville- 'The Light' slogan, area wx, soft AC
 6/20/91 Tropo
 0710 106.9 KROC MN Rochester- ID and CHR mx
 6/21/91 Tropo
 0227 106.9 KXTY MO Jefferson City- 'Y-107' and AC/CHR mx
 7/7/91 Tropo
 0659 104.3 KBEQ MO Kansas City- 'Q-104' slogan (Mike, note freq -trb)
 0701 105.3 KZNN MO Rolla- Ad, news at 0650 ad ID at 0701
 0738 99.3 KCLR MO Boonville- Clear-99 slogan
 0800 99.3 KNIM MO Maryville- ID then Sunday morning REL program
 0802 99.1 KFUD MO Clayton- ID as Classic 99 then CLA mx
 0813 107.7 KMJM MO St. Louis- Strong with talk and mentions of St. Louis
 0823 102.9 WSOY IL Decatur- ID as Y-103, then central IL, wx. IL #1 and state #7
 0830 102.5 KEZK MO St. Louis- ID and REL
 0833 101.1 KCFX MO Harrisonville- ID and AC mx (classic rock- trb)
 0857 100.5 WYMG IL Jacksonville- ID only
 0859 91.9 WSSU IL Springfield- ID after public radio program
 0900 91.1 WBIH IL Carlinville- ID then nx
 0903 88.5 WGCA IL Quincy- USA nx
 0930 93.7 KSD MO St. Louis- ID as Classic Rock. MO #30
 0953 101.3 WLLR IL East Moline- REL
 7/12/91 Tropo
 0730 102.9 KMJMO MO Marshall- ID and nx (format is C&W- trb)
 0744 99.3 KUTT NE Fairbury- ID and local talk
 7/17/91 Tropo
 2045 107.1 KYNF NE South Sioux City- good with ID, tough w/ KEZG-107.3.
 2137 105.5 KCOE NE Auburn- strong with KC Royals vs Baltimore Orioles // KNIM and KNCY. New for NE #45
 2314 106.5 KFMC MN Fairmont- fair w/ AC mx and ID. MN #3
 2322 99.1 KEEZ MN Mankato- fair w/ wx and mention of thunderstorm and flood watch, and Z-99 slogan. // KAYL-101.5 and KUOO midnite to 5:30 local time. Verie signer is Steve Heaton
 2329 92.9 KLAG IA Algona- poor w/ KC Royals BB
 2336 99.3 KFGQ IA Boone- poor w/ REL and mx
 7/18/91 Tropo
 0025 104.7 KKLS SD Sioux Falls- Fair w/ 'Sunny 104.7' ID, wx and C&W mx
 0059 105.5 KELR IA Chariton- poor with KC Royals game in 15th inning
 0104 104.9 KJJG IA Spencer- ID jingle then Doors mx
 0153 105.1 KLSS IA Mason City- very weak with wx and AC mx, FM #150
 0200 96.5 KNWC SD Sioux Falls- ID after public service announcement
 0206 97.3 KPAT SD Sioux Falls- AC/CHR mx and ID
 0215 101.9 KTWB SD Sioux Falls- fair w/ KFMQ QRM w/ C&W mx
 0223 91.7 KRSW MN Worthington/Marshall- fair w/ opera mx

0226 91.3 KDFR IA Des Moines- REL, fair to poor signal (part of the Family Radio network which includes KYFR-920 and WYFR-sw- trb)

2049 104.9 KTCH NE Wayne- strongest ever heard from them w/ ID and ads
7/18 E-skip
1130 90.5 unID- CLA and JAZ
1220 92.1 CJAY AB Calgary- ID as 'C-Jay-92' then Rod Stewart mx. First foreign FM catch.
7/19/91 Tropo

0034 105.7 KOKZ IA Waterloo- ID and AC
2355 92.5 KJY IA Ankeny- ID and C&W. Tough w/ KEZO-92.3
7/20/91 Tropo

0003 98.1 KHAK IA Cedar Rapids- ABC nx, wx, 'K-Hawk' ID then C&W mx
0009 102.9 KQCR IA Cedar Rapids- ID as 'The New Q-103' then CHR/AOR

0016 106.3 unID- ID as 'the all new Mix 106.3-KMXG?'

0023 107.1 KCCQ IA Ames- ID and AOR mx
0026 96.5 WMT IA Cedar Rapids- very weak w/ AC
0035 103.1 KLLKt IA Clear Lake- ID sounded like 'Lake 103' (call is KLLK- slogan checks out- trb)

2332 101.1 KXIA IA Marshalltown- very weak w/ C&W mx
7/21/91 Tropo

1905 93.5 KTRX MO Tarkio- poor with C&W. I don't know why I haven't heard this before. (Neither do I- they're solid copy here -trb)
7/23/91 Tropo

0211 106.5 KRVR IA Davenport- fair with ID and EZL/AC

0225 101.5 KKSI IA Eddyville- 'Kiss FM' non-ID and CHR mx
7/29/91 Tropo

0021 88.7 KLNE NE Lexington- ID as NE Public Radio after CLA mx

0100 89.9 KRPS KS Pittsburg- A lot of BBC news, without an ID. Antenna pointed S when best signal heard. Can anyone confirm this?
7/30/91 Groundwave

105.7 KSUX NE Winnebago- heard with AC and still some C&W. Uses 'All new K-Sioux' slogan
7/31/91 Tropo

0135 93.3 KLSI MO Kansas City- local KRRK off. CHR mx and ID heard, just as KRRK came back on. Never logged, but I think I've heard them before

2236 95.7 KHUM KS Ottawa- ID as 'Quality Radio, 96 Hum' and ment of CNN nx in promo

2305 103.9 KNZA KS Hiawatha- Many IDs and ment of a county fair

0059 106.5 KFMC MN Fairmont- ID in mix of KXXR and an unID

0158 90.9 KUNI IA Cedar Falls- good with clear ID
0159 89.5 KHKE IA Cedar Falls- ID then 'Music Through the Night'

0201 89.3 KUCB IA Des Moines- REL and ID. FM #175 total

BX-93
COUNTRY FM
STEREO RADIO
P.O. Box 5593
London, Canada N6A 5H8

0211 91.5 KANU KS Lawrence- ID during 'Jazz Overnight'

0300 107.3 KCFM MO Lexington- C&W mx and 'Giant 107' slogan

0738 103.9 KNLV NE Ord- Fair w/ Paul Harvey then farm report w/ ID

1049 101.5 KKSI IA Eddyville- Blasting in w/ 'Kiss FM' slogan

1059 104.7 KRES MO Moberly- ID as 'Kres Country' and call ID

1101 101.7 KBKB IA Ft. Madison- ID then NBC nx
1107 97.1 KLAL IA Lamoni- ID and C&W w/ KNCY. IA #50

1730 98.7 KISD MN Pipestone- ID as 'Kiss FM' then AOR mx. MN #5

1745 97.5 KNXR MN Rochester- ID and EZL mx
1758 95.3 KQWC IA Webster City- strong w/ ads and ID

1815 96.5 KWWK MN Rochester- poor w/ C&W
1822 101.7 KDLS IA Perry- ID as 'The all new FM 101 Plus', then AC

1915 93.9 KRNA IA Iowa City- AOR and ID. Tough w/ WOW-94.1

1922 92.9 KIDA IA Ida Grove- ID and CHR mx
1929 107.5 WGCI IL Chicago- Fair w/ 'Slam it or Jam it'

1941 104.9 KWGG IA Hamilton- fair w/ ID and AC. IA #55

1945 106.3 KMXD IA Ankeny- my unID with 'Easy Mix 106' slogan.

1949 105.1 WOJO IL Evanston- SS mx, SS ads, and SS ID

1956 99.7 KFMH IA Muscatine- ID and AOR. Tough w/ KGOR-99.9

2001 99.3 KFGQ IA Boone- ID and wx
2006 98.7 KMGQ IA Centerville- C&W mx, KQKQ-98.5 QRM

2059 98.3 KWBG IA Boone- ID, KQKQ-98.5 QRM

2100 107.5 WJOD IL Galena- Good w/ C&W, ID, then CNN nx
8/6/91 Tropo

2327 106.5 KMCX NE Ogallala- Strong w/ ID and C&W mx

2329 103.5 KXNP NE North Platte- fair w/ C&W mx
2332 99.7 KOGA NE Ogallala- ID as 'Music 99' then AC mx

2334 94.9 KJLT NE North Platte- poor w/ REL
8/6/91 Tropo

2327 106.5 KMCX NE Ogallala- Strong w/ ID and C&W mx

2329 103.5 KXNP NE North Platte- fair w/ C&W mx
2332 99.7 KOGA NE Ogallala- ID as 'Music 99' then AC mx

2334 94.9 KJLT NE North Platte- poor w/ REL
8/7/91 Tropo

0008 93.1 KRVN NE Lexington- Fair w/ soft AC mx
0018 91.7 KPNE NE North Platte- ON AIR w/ CLA and other NPR stuff

0023 97.1 KELN NE North Platte- OLD mx
0033 105.3 KZMC NE McCook- poor w' AOR and mentions of McCook

0159 91.1 KTSN SD Reliance- good w/ CLA and SD Public Radio ID. SD #10

0201 94.5 KPLO SD Reliance- fair w/ C&W and ID
8/12/91 Meteor Scatter

0140 89.9 WTLR PA S tate College- mention of Manchester and "... here in State...?"

Loop Experiments: The Super Booster Bar ... by Gerry Thomas

This is the first in a series of articles describing some of the loop experiments I've conducted over the past several years. Most of these articles deal with questions of loop theory for which I could not find answers. A few of the articles deal with more mundane questions such as loop construction techniques; this is one of those articles.

Passive booster loops have been around for years and are still commercially available (e.g., the Select-A-Tenna). I've even written a couple of earlier articles on booster loops (the "Tilting T-Bar Antenna" and the "Hot Rod") but none has been as effective or as easy to construct as the "Super Simple Booster Bar" (see Figure 1). The key to its simplicity is its use of readily available construction components; the variable capacitor and ferrite rods remain as difficult to come by as ever, though.

A booster loop is nothing more than a parallel-tuned circuit which, when placed near the antenna of a portable radio, significantly boosts the signal to the radio. This parallel-tuned (or "primary" winding) circuit becomes a transformer when inductively coupled to the "secondary" winding that is on the portable radio's built-in ferrite rod antenna. This transformation results in a "peak" in tuning (instead of the "null" that normally results from a parallel-tuned circuit).

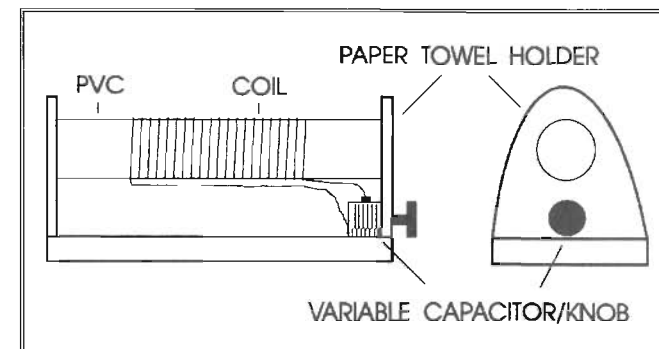


Figure 1. Super Booster Bar.

Materials Needed...

1. Paper towel holder -- This is the key to the simplicity of this booster. ScotTowels now makes a short (8-inch wide) paper towel holder that is perfect for mounting the ferrite rod assembly and variable capacitor. These are called "ScotTowel Juniors" and the holder costs under \$1.00.
2. PVC tubing -- The 1-1/4" diameter PVC tubing fits nicely on the nubs of the paper towel holder and is capable of housing a large number of ferrite rods. You'll need an 8-3/8" length of tubing (most smaller hardware stores will cut this to length; mine was \$.50).
3. Variable capacitor -- Ideally, you would use a small (1" x 1") 365 pF variable capacitor. Years ago they were available at any Radio Shack for \$.69; now they are next to impossible to find. Mouser Electronics (1-800-34-MOUSER) carries a dual gang variable capacitor (266 pF each gang; under \$3.00) that is useable but requires a shaft extension to accommodate a standard knob. (To extend the shaft of this variable capacitor, use a 1" x 1/4" round nylon "stand off" (for PC boards), a 1-1/4" x 2.5 mm screw to thread into the stubby knob of the variable capacitor and hold the "stand off" in place, and a tiny drop of super glue to further secure the "stand off" to the stubby knob.)
4. Ferrite rods -- The PVC tubing can hold a fair amount of ferrite --- I was able to

cram 10 rods (each 8" x 3/8") into mine and the boost it gives is incredible. Amidon Associates (12033 Otsego St., North Hollywood, CA 91607) carries rods (with a permeability of 125 mu) that are 7-1/2" x 1/2". I'm not sure of the current price but buy as many as you can afford and center them in the PVC tubing supporting them with cork or foam as needed. Alternatively, scavenge some ferrite from some old radios or attend the next hamfest nearest you and try to get your hands on some ferrite rods.

5. **Wire** -- Just about any kind of insulated wire will do. You'll need between 12' and 15' (depending on the variable capacitor you use). I used stranded 18 gauge for mine.
6. **Rubbermaid turntable** (optional) -- Available at most supermarkets; use the small size (about \$3.50).

Construction...

1. **Wind wire on PVC tube** -- If you are using a 365 pF variable capacitor, closely (i.e., no space between turns) wind 34 turns (12') of wire on the center of the tube. If you are using the Mouser variable capacitor (and are using only a single gang), closely wind 43 turns (15') of wire on the center of the PVC tube. With ferrite mounted in the tubes, either of the preceding windings with their respective variable capacitors will tune from at least .530 - 2.000 MHz. After you've wound the coil on the tube, ensure that there is sufficient wire overage to reach the variable capacitor to be mounted below the tubing (see illustration). Tape the ends of the coil in place and, if you have it, coat the windings with Q-dope to hold them in place.
2. **Drill hole in holder** -- A small variable capacitor can be mounted as illustrated after drilling a suitable hole in one arm of the paper towel holder.
3. **Mount variable capacitor** -- Fasten variable capacitor with glue or screws to holder.
4. **Insert ferrite rod bundle into tubing** -- Insert ferrite into PVC tube making sure fit is snug and rods won't slide when tube is tilted.
5. **Hook up coil** -- Solder (or use alligator clips) one end of the coil to the rotor of the variable capacitor and the other end of the coil to the stator.
6. **Attach a knob** -- Put a knob on the variable capacitor shaft and you're ready to go.
7. **Test** -- Place a portable radio close to the booster bar and slowly tune the variable capacitor until you hear a rise in background noise or signal level or see a peak on the S-meter (if the radio has one) when the radio is tuned to about mid-scale. If nothing is noticed, move the booster closer to the radio and try again. If that doesn't produce a peak, re-check wiring and solder connections. Quite frankly, there just isn't a whole lot that can go wrong with a booster circuit.

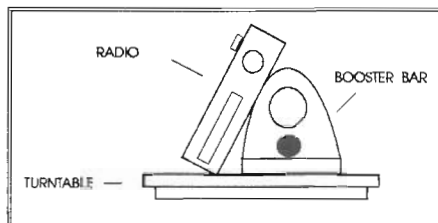


Figure 2. Booster Bar/Turntable/Radio Arrangement.

The booster bar becomes more useful if it is mounted on one of Rubbermaid's plastic turntables (see Figure 2). The portable radio (if it isn't too large) can be placed on the turntable and leaned against the booster bar. The two can then be rotated together to null and directionally peak stations. A longwire antenna can be tuned by hooking it to one side of the variable capacitor if you really need more signal.

Best of luck with this project. If you have any problems or suggestions for improvements, drop me a line. Also, if you discover sources for variable capacitors and ferrite rods, let me know. 73's...GT (3635 Chastain Way, Pensacola, FL 32504)

The 'Half-Breed' Regenerative Crystal Set ... by Ray Cole

© 1991 by Mike Knitter for the NRC

About half of all my spare time for three months has been spent in experimenting and developing two versions of this circuit. While doing so, and quite by accident, on both short and long wave, I have received stations and beacons literally around the globe - even including Indo-china and the Belgian Congo. Since the circuit is restricted to an eight-foot antenna in order to prevent overloading, its performance has been a real astonishment to me. On the AM broadcast band I have received most of the signals that my Radio Shack TRF 12-655 can bring in, at the same moment, side by side. However, the QRM circuit is very necessary in order to do this.

Basically, it is my favorite very high-gain Darlington preamp ahead of a modified Tugle Circuit crystal receiver, with feedback to the preamp to provide regeneration - with tremendous gains in amplification and sensitivity.

I have built two versions of the circuit and tested them side by side. One uses a hard-to-find five-gang variable, two sections for (A) and two for (B). The fifth section, next to the panel, is unused.

The other version uses two identical superhet variables, using both sections of each in parallel. This requires two-handed tuning to track them unless a simple belt is used around the two knobs. Details later.

Much to my surprise, I have found no differences in selectivity or in sensitivity between the two versions.

In both versions the padders on the sides of the variables are unused, and due to an interaction of the coils, all tuning will still track well - so long as the two dials of the two-dial version are tracked reasonably well. This has been carefully checked out in both versions by deliberately throwing them off-track a certain amount.

For the very greatest selectivity, use a crystal phone, but, personally I prefer the speaker amp to eliminate the wire to my ear. You will hear about as much either way; just keep the wire away from the soldering iron!

Many variations of regeneration were tried very extensively, including even rotating tickler coils, and this one shown proved best. But all proved too difficult to handle on a practical basis on frequencies above 2500 kHz and below about 200 kHz - the circuit going into oscillations too abruptly. Reception, however, is fantastic if anyone can find a way to overcome this. I now use switched-in capacitors and cover only 1800 to 225 kHz, approximately.

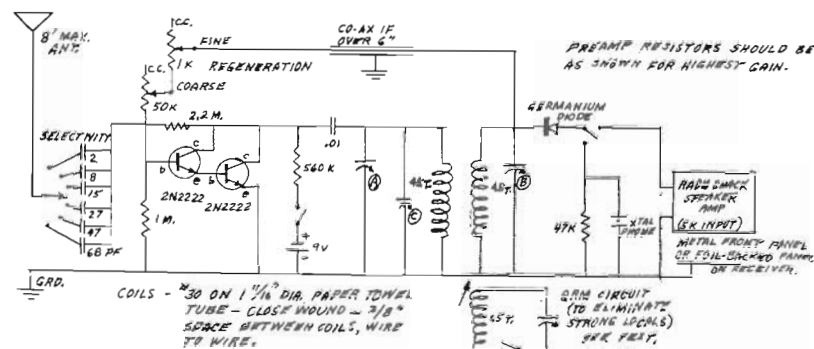
For even lower frequencies, a reduction in switched-in capacities by using, say, 150-turn coils, may overcome this abrupt oscillation. Similarly, coils made to suit higher frequencies may solve the problem on shortwave. I have not tried either one. But this as shown works fine from 200 to 200 kHz and is very stable, needing only a few minor adjustments across an entire band.

This circuit is interesting in that regeneration cannot be obtained by connection to the antenna coil, and only very poorly with great lack of stability of connection to the output side of the diode.

The belt around the two knobs, when two superhet capacitors are used (so that they will track when turning only one knob) is made of vinyl electrical tape wrapped two layers thick to form a simple flat belt - with some tension as it is wrapped. If too wide for the knobs used, it can then be removed and split lengthwise with a razor blade, making a spare belt. It will tend to creep and slip a bit at first until it stretches to suit, and then will become quite stable.

The QRM coil's spacing from the detector coil - it should be at the opposite end from the antenna winding - should be adjustable from one-quarter inch to one inch, winding to winding. A piece of paper can be rolled up, inserted, and glued inside the detector coil end of the form so that it projects an inch or two for the QRM coil to slide over. It should be a tight enough fit to hold the QRM coil in any set position, which you will change fairly often to suit conditions. The QRM circuit is switched out when not in use to avoid an accidental blocking of a frequency later.

Some of the input capacitors can be omitted with a



40

loss of some choice. The 27 pf is most useful on my eight-foot antenna, and the 2 and 68 pf are rarely used. A direct connection is useless due to overloading but might be fine on a two- or three-foot antenna.

There is a great performance variation in 2N2222 transistors, even of the same brand, which is magnified greatly in a Darlington circuit. It is a good idea to have at least six or eight on hand to test in the circuit by substitution after the circuit is in operation. Germanium diodes vary some, but to a much lesser amount.

(C) is an optional vernier tuning capacitor (total of five plates) and is very helpful in tuning sharp signals and needed only on the antenna coil. All logging is done with it one-quarter from open.

Switch-in capacitances across coils (if desired)

and coverages:

Two Superhet variables		Coverage, kHz
.000660	(660 pf)	504-352
.001470	(1470 pf)	352-290
.002440	(2440 pf)	295-252
.002890	(2890 pf)	260-223
.003300	(3300 pf)	228-209
none	- BC band	1790-508

Four/five-gang variable		Coverage, kHz
.000770	(770 pf)	540-385
.001220	(1220 pf)	382-315
.002470	(2470 pf)	310-273
.003300	(3300 pf)	273-245
.004700	(4470 pf)	245-225
none	- BC band	2090-540

Loop Antenna Sensitivity ... by Dallas Lankford

How can one estimate the sensitivity of a loop antenna? And how sensitive should a loop antenna be for state of the art performance in the MW band? The purpose of this note is to discuss these two questions.

Ideally, the best way to estimate the sensitivity of a loop antenna is to measure it. But that requires a shielded room and calibrated test equipment which are beyond the means of most hobbyists. Fortunately, in his article "Ferromagnetic Loop Aerials For Kilometric Waves," *Wireless Engineer*, Feb. 1955, pages 41-46, J. S. Belrose derived some formulas which can be used to make quite accurate estimates of loop antenna sensitivity. He showed that the signal to noise ratio of a tuned loop is given by

$$\text{Signal/Noise} = \frac{66.3 NA \mu_{\text{rod}}}{\sqrt{\Delta f}} \sqrt{\frac{Qf}{L}} E$$

where N is the number of turns of the loop coil, A is the area in square meters enclosed by one turn of the loop coil, μ_{rod} is the rod permeability (see Belrose's article for a graph for converting the initial permeability μ to rod permeability μ_{rod}), Δf is the bandwidth in Hertz seen at the detector of the receiver, L is the inductance in Henrys of the loop coil, and E is the field strength in volts per meter of the received signal. For an air core loop, $\mu_{\text{rod}} = 1$. In Belrose's article it was pointed out that the noise which limits the sensitivity of a loop antenna is thermal noise due to the resistive component of the loop antenna impedance. We will call this noise loop coil noise.

The noise floor of a loop antenna is defined as the voltage equal to a field strength which produces a signal to noise ratio of 1. The noise floor of a loop antenna is the voltage equal to the loop coil noise. Solving the previous equation with Signal/Noise = 1 we get the following.

$$\text{Noise Floor} = \frac{1}{66.3 NA \mu_{\text{rod}}} \sqrt{\frac{\Delta f L}{Qf}} \text{ volts}$$

The variables in the above equation are dependent on each other to some extent, but for the sake of discussion let us assume that L = 154 μH (so that a 660 pF capacitor tunes the loop to 500 KHz), that $\Delta f = 2$ KHz (which is about the minimum useable bandwidth), that Q = 100 (a not unreasonable value for a loaded loop coil), and that f = 1 MHz. For these assumptions we get the following.

$$\text{Noise Floor} = \frac{0.837}{NA \mu_{\text{rod}}} \times 10^{-6} \text{ volts}$$

With the assumptions above, a 2 foot square air core loop has 14 turns, a 1 foot square air core loop has 22 turns, a 6 inch square air core loop has 36 turns, and a Space Magnet rod (12" long by 9/16" diameter, $\mu = 400$) has 30 turns. The air core loops have $\mu_{\text{rod}} = 1$, while the Space Magnet rod has $\mu_{\text{rod}} = 150$. We can also convert to other bandwidths by multiplying by the square root of one half the bandwidth in KHz. Thus we get the following.

Air Core And Ferrite Rod Loop Noise Floors

	2 KHz BW	4 KHz BW	8 KHz BW
2 foot	0.14 μV	0.20 μV	0.28 μV
1 foot	0.34 μV	0.48 μV	0.68 μV
6 inch	0.83 μV	1.2 μV	1.7 μV
Space Mag.	0.79 μV	1.1 μV	1.6 μV

So what do these numbers mean? Can you hear anything on a 1 foot air core loop that you can't hear on a Space Magnet? Can you hear anything on a 2 foot air core loop that you can't hear on a 1 foot air core loop? It all depends on the kind of signal you want to hear and the minimum man-made and power line noise at your location. As I have said in previous articles, if you live in a large urban area, I doubt that you will ever hear anything on a 1 or 2 foot air core loop antenna which you cannot hear equally well on a Space Magnet or similar ferrite rod loop antenna. Incidentally, I have wound coils on all kinds of ferrite rods, bundled, not overlapped, overlapped, close wound, spaced over the entire length of the rod, you name it ... I've tried them all. As long as you use at least 4 rods of $\mu = 125$ bundled and overlapped, or at least 7 rods bundled and not overlapped, the noise floors are all virtually identical. Also, based on listening tests, the noise floor of a 6 inch loop is virtually identical with the noise floor of a Space Magnet, which agrees with the numbers in the table above. Ralph currently uses 10" ferrite rods made by gluing together 10 ferrite cylinders of $\mu = 125$ which are 1" long by 1/2" diameter. The noise floor of his ferrite rod loops is identical to the Space Magnet based on my listening tests (this is the Great Little Loop sold by Radio West). So my following remarks about the Space Magnet apply to any well designed ferrite rod loop and to the 6 inch air core loop.

As I have remarked in previous articles, I am fortunate to live in a small town where ambient man-made and power line noise occasionally fall to very low levels. On those occasions (and only on those occasions) I can hear a very definite difference between the Space Magnet and a 1 foot air core loop. On a few weak daytime signals the 1 foot air core loop (and of course the 2 foot air core loop) will produce clear audio when the Space Magnet produces no audio at all. The amps of my loops have been equalized so that the output signal levels of all of my loops are virtually identical. Consequently, I have concluded that this difference between the 1 foot air core loop and the Space Magnet is due to the lower noise floor of the 1 foot loop.

About once a year the daytime noise levels at my location (Ruston, LA) drop to super low levels. On these occasions I can often hear WOAI San Antonio on 1200 KHz fading in and out of the noise while the R-390A meter sits solidly on 0. Yesterday was such a day, and provided me with a rare opportunity to try to hear a difference between the 1 foot air core loop and the 2 foot air core loop. (My ferrite rod loops and 6 inch air core loop were producing no audio at all from WOAI, just thermal noise from the loop coils.) Maybe I wanted to hear a difference, but it did seem like I could follow WOAI deeper into the ambient noise with the 2 foot loop than with the 1 foot loop. And it did seem that WOAI was clearer on the 2 foot loop than on the 1 foot loop when WOAI was in the clear above the background noise. However, there was no dramatic difference between the 1 foot and 2 foot loop like there is between the 1 foot (or 2 foot) loop and the Space Magnet.

When signal levels are much higher, such as when DXing domestic channels or foreign splits at night, there is no difference between what you can hear with the various loops. However, there are some situations where a 1 foot air core loop might produce clear audio when a ferrite rod loop does not. Unfortunately, I am not in a position to compare loops for most of those situations. A few times a year I can hear Dakar Senegal on 765 at local sunset when noise levels are low and adjacent channel signal levels are low. I have always used a 2 foot air core loop for those receptions, but I expect a 1 foot air core loop would be equally good, while a ferrite rod loop would not. ECNA DXers often report TA reception just before and at local sunset. I expect that a 1 or 2 foot air core loop would be better than a ferrite rod loop in that situation if ambient noise is low. WCNA DXers often report TP reception at and just after sunrise. Again, I expect that a 1 or 2 foot air core loop would be better if ambient noise is low.

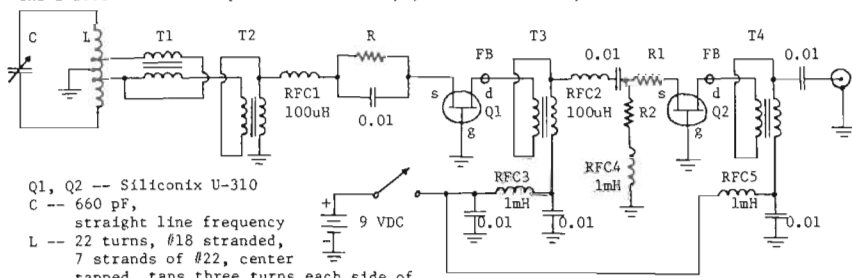
For these reasons, I have developed a 1 foot air core loop and companion two FET amp which is not much larger than a Space Magnet or Great Little Loop, but which has a demonstrably better noise floor.

High-Performance One-Foot Air Core Loop ... by Dallas Lankford

In my recent article "What's Wrong With Present Day Loop Antennas" I observed as others before me have observed that a 4 foot air core loop is too large for most DXers, and agreed with Russell Edmunds and Ralph Sanserino that a 2 foot air core loop is a reasonable starting point for a high performance loop antenna. And in my companion article "High Dynamic Range Balun Loops" I presented two unamplified and one amplified 2 foot air core loops. But a 2 foot air core loop is still quite large and not easy to move around. This motivated me to develop a 1 foot air core loop and companion amplifier which are not much larger than a ferrite rod loop, but which have demonstrably better performance -- a lower noise floor (better sensitivity), and much better strong signal handling performance.

The main problem with developing a high performance 1 foot air core loop was the amp. The improved balanced differential amp (BDA) in the first article above, while adequate for ferrite rod loops, had detectable 2nd order IMD products when used with a 1 foot air core loop. Tapping the BDA input down on the 1 foot air core loop improved the IMD somewhat, but did not eliminate the spurious responses completely. The U-310 amp for the 2 foot loop was tried with the 1 foot loop, but the amp gain was slightly inadequate for the 1 foot loop. The solution was to add a second U-310 amp.

The dual U-310 amp in Fig. 1 below is identical to the amp for my 2 foot loop (in Fig. 5 of the second article above) up to T3. A different source bias circuit is required for Q2 to isolate the source of Q2 from +9 volts DC applied to the drain of Q1 through T3. The source bias resistor for Q2 is the combined resistance of R1 and R2. It is split into two parts because with the standard circuit ($R1 = 0$ and $R2 = R$) amp gain is not uniform throughout the MW band; gain at higher frequencies is higher. It might seem that inserting resistance (R1) in the signal path would lower gain uniformly, but that did not happen; gain at lower frequencies is unchanged, while gain at higher frequencies is reduced. By trial and error $R1 = R2 = 220$ ohms was found to give nearly uniform gain while coming close to the Q2 source bias design goal of 470 ohms. Output signal levels were somewhat higher than for the 2 foot air core loop with two turn taps, so three turn taps were used.



Q1, Q2 -- Siliconix U-310
C -- 660 pF, straight line frequency
L -- 22 turns, #18 stranded, 7 strands of #22, center tapped, taps three turns each side of center tap, 1 foot square frame, 1/4" spacing between turns, 1-3/4" spacing between 11 turn halves
T1, T2, T3, T4 -- 70 bifilar turns of #30 enameled copper wire on Amidon FT-82-61 ferrite toroid core
RFC1, RFC2 -- 100 uH choke, Mouser 43HH104
RFC3, RFC4, RFC5 -- 1 mH choke, Mouser ME 434-1120-103K
R -- 470 ohms
R1, R2 -- 220 ohms
FB -- ferrite bead, Amidon FB-64-101
Tuning Range -- about 500 KHz to 2000 KHz after adjusting the spacing of L
Current Drain -- about 8.5 mA

Figure 1

One Foot Air Core Loop

You can get a little more gain out of the 1 foot loop and amp of Fig. 1 by using taps at two turns each side of center tap, or taps at one turn each side of center tap. I don't recommend this because the higher signal levels are not necessary, and the increased Q seems to degrade audio quality when listening in wider receiver bandwidths. You can also get a little more gain at the high frequency end of the MW band and 160 meter ham band by reducing the value of R1 and increasing the value of R2 (keep $R1 + R2$ approximately equal to 470 ohms), but I don't recommend this either. The three turn taps and values of R1 and R2 have been carefully chosen for optimum signal levels and flat gain. The amp of Fig. 1 can be used with ferrite rod loops (preliminary tests suggest that a 2 or 3 turn tap each side of center tap is satisfactory), but I recommend against that. If you feel that you need better performance, use the amp as it was intended, with a 1 foot air core loop. Finally, the amp of Fig. 1 can be used with the 2 foot loop described in my previous article, but I recommend against that too unless you live far away from sources of man-made and power line noise, and the MW signal levels at your location are lower than normal. Perhaps someone in Hawaii, Alaska, or northern Canada could benefit by using the amp of Fig. 1 with a 2 foot air core loop.

WREN bird comes down

By LINDA LAIRD
The Capital-Journal

Historic Topeka Inc. gave KJTY-FM, Joy 88, a check for \$1,500 and gave the WREN bird to Mayor Dutch Felker Wednesday morning.

About 75 former employees, city officials, history lovers, children and passersby showed up at 10th and Fillmore about 9:30 a.m. to watch the 1,200-pound concrete bird, symbol of WREN-AM broadcasting, in Topeka and Northeast Kansas for more than 50 years, come down from its perch after 34 years.

Carol McDowell of Historic Topeka Inc. said the \$1,500 came entirely from donations from citizens who wanted to keep the bird in Topeka.

"I wish we could have received enough to pay for the landscaping, but we haven't," she said.

Felker said the bird will be displayed somewhere in Gage Park and will be dedicated either as a "piece of playground equipment or yard art."

Attached in yellow nylon straps, the bird was lifted by crane from the roof and onto a flatbed truck. The moving of the bird from the radio station roof to a storage building at Gage Park was donated by Bruce Senne of Senne Construction Co. He said he was just keeping it in the family.

It was his grandfather, George Senne, who had the bird made when his company constructed the transmitter building between Topeka and Lawrence in 1922. Senne said little is known about actual construction of the bird, however. It is made of concrete over a framework.

Though the Sennes were not involved in the bird's move to Topeka in 1947, his father, Wilbur Senne, moved the bird to its present place from 411 W. 10th in 1957.

Station owner Alf Landon contracted with Senne Construction to build the studio building adjoining a house at 10th and Fillmore.

Warren Wilson, station manager of Joy 88, said the money from the sale of the bird, the call letters and "WREN PARK" sign will be used to put KJTY's call letters on the building. Joy 88 bought the building earlier this year.

"We will be renovating the building through the summer, using a lot of volunteer help," he explained.

"We plan to have the ribbon cutting for our new studio home Sept. 17."

Joy 88, Topeka's non-commercial, religious radio station, went on the air on Aug. 31, 1985. It now broadcasts from studios at 2919 N. Topeka Blvd.

The bird was moved to 10th and Fillmore on July 8, 1957, according to Wilbur Senne.

WREN-AM went silent in September 1947 after broadcasting first from Lawrence in 1926, then in Topeka from 1947 to 1987. The station was first owned by the Bowersock Mills and Power Co., before being purchased in 1952 by the late Alf Landon, former Kansas governor and 1936 presidential candidate. Landon was the owner until 1982, when it was sold to The Kasasbaum Group. Pat Palen became owner Sept. 5, 1985.

Musings

of the Members

Dave Schmidt

P. O. Box 11502

Wilmington, DE 19850-1502

Times are local per Mus.

Thoughts from NRC members... the opinions expressed in this column are those of the individual writer and do not necessarily reflect those of the editors, publishers, or the National Radio Club, Inc.

JERRY STARR - WHOT RADIO - 4040 SIMON ROAD - YOUNGSTOWN, OH 44425
Greetings. What a strange experience! Whilst strolling around the exhibit hall at the Dayton Hamvention, who should I generally run into but Mike Knitter! Mike was evidently helping the man with the ANARC display. We attended with NRC hams Dick Triak & Al Merriman. I was truly surprised to see non-ham Mike there. He joins the handful of NRCers to actually meet Buffalo K. Poonman as she was with me also. Dave, your news about WAMS going off is truly sad. While it is not a real shock to see some of the smaller AM operations fold up (I wasn't surprised to learn the 1580 khz daytimer in Shamrock, TX went out of business for example) it tears at the heart of AM fans to see a well known and respected facility fall. The days of transmitter land being more valuable than the station license are upon us, a situation predicted a number of years ago. I read a letter from the CE of WDME-1340 in a recent issue of Radio World that covers the problems faced by many smaller AM operations. WDME AM was 90% simulcast with their FM and 'in management's view the AM revenue was less than the fixed utility & insurance costs to keep it on' so they took the AM off the air, loaded the transmitter into a truck & off it went! In my view of the present state of AM's general health, I have to wonder WHO will be the people lining up to get a license for the stations in the 1600-1700 khz expanded broadcast band? The FCC claims to have had a large number of inquiries about the availability of these frequencies. It should be real interesting to see just what happens. See you at the convention '73 & Good DX

MARK CONNELLY - 30 WILLIAM ROAD - BILLERICA, MA 01821-6079

WVNE-760 (Leicester, MA) is on with a religious format. It seems to be on daytime only, if operating at night, it must be low power, as the usual WJR/Columbia/Venezuela/Cuba mix shows here after dark. WVNE's day strength is consistent with 5 kw WYAG-580 in the same metro-Worcester area, runs a comparable signal. Recent daytime drives along the coast north of Boston (Cape Ann) revealed CFDR-780 Dartmouth, NS to me. Its groundwave strength near the water is fair/good, poor/poor a few miles inland. CFDR gets covered by ZBVT/WBEM/Venezuela/others at night. It runs a CHR/Top 40 format with some 80's era hits mixed in. Like CHTN-720, CFDR is a good daytime "antenna testing" station to determine the DX viability of a given loop/longwire/beverage/etc. from eastern MA/RI & probably coastal ME, NH, CT, NY, NJ, DE. Wasn't Yarmouth, NS (CJLS-1340) suppose to go to 780? By the way, the addition of the Portsmouth, NH area religious station to the stew on 1340 makes an already rough channel even more. I used to enjoy listening to CJLS groundwave when in Gloucester/Rockport, MA, getting behind the 'right rock' usually killed competing WNBH. Now the channel is a big jumble through the area. Frequency stability of AM stations seems to be getting sloppier, one of the local 1450 guys is somewhat off channel causing a growl, similar situations exist on groundwaves of 1340 and of 900. I would think that with a 'within a Hertz' counters being accessible at hobbyist prices (under \$500), off frequency problems would be a thing of the past. Another local note: TIS stations at the Tyngsborough, MA/Nashua, NH border have been noted on 530 & 1610 khz. Range of these on a car radio is a couple of miles at best but with a serious DX receiver/antenna combo, they can be hauled in for a least 30 miles with no problem. Skip burys these at night here approx. 20 miles SE. What's up with PJB-800 & R. Paradise-825? I haven't heard them lately. They used to be 'pests'. Are we dealing with power changes/antenna changes/increased ORM/rotten conditions? I'd like to know. Cesar Objio/Gerry Thomas/others closer to the action should be able to solve this. Report that vacation trip DX! Hope all have a great summer!

MICHAEL HAWK (KBØGX/KT) - 10212 P STREET - OMAHA, NE 68127-2130

Hard to believe that at one point I haven't DX'ed MW in over a month! That excludes some MW listening done in Evergreen, CO in late June. Some changes in the log were noted, all reported to DDXD-W or Formats. I used a 220' LW strung up along some trees along with the ATS-803. I did a lot of GY listening with KNUZ-1230, KCOW-1400, KGOS-1490, KADA-1230 being the best catches. I also heard a TIS station on 530 with a test message repeated for 4+ days. A little DX was done in Omaha with WBGZ-1570 the only new one heard. Fm TV/SW & ham radio is filling a lot of my day here now that it is summer and MW DX is slow. My log stands at 1371 with call changes, 1326 without, with last year as my best year for DX. I hope everyone had a much fun as I did! '73's.

The Answer Man

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

MIKE HARDESTER - P O BOX 8159 - CAMP LEJEUNE, NC 28542-8159

Greetings! No DX of recent note but 2 veries (for f/up's) have been received, WAYR-550 sent a v/1 and assorted items, returned SASE and prepared card & KBIS-1010 returned my prepared card then a few days later, a full data letter was received. Some time ago I was trying to ID the mysterious Nat King Cole promo I heard (1000 Khz) for a power increase, I contacted WTAK. I received a call from Brian Williams (an announcer at WTAK) who was visiting in this area. (Hardester - Con't.) We got together for lunch and had a pleasant chat about radio. He mentioned that the planned power increase and antenna change requested for WTAK did NOT take place and they'll be staying at 10 kw daytime. Caught an item on the local TV news about a radio station fire in the area, the calls weren't heard and no mention given in the local paper and no station has been noted missing on a scan of the AM/FM bands on my truck radio so no idea of whom it may be, though not a Jacksonville station. All for now.

KARL JETER - 2115 SCARBROUGH ROAD - STONE MOUNTAIN, GA 30088

Time for a mid-summer (or late summer by the time this sees print) check-in. In my last Muse, I had reported that I had been laid-off my job, and now I am happy to say that I have become self-employed, operating a small engineering/drafting service out of my home. I am enjoying this immensely, but going out and scrambling for work is quite a change from the previous arrangement-hi! The down side is it is hard to make long range plans (ie: conventions) so I am not sure if I'll be in Bridgeport or not as of this writing. The up side is that I can set my own hours, and depending on the workload, I have found some time for DX activities this summer. To show you good summer conditions exist, on 7/13, I was shocked to log WARD-1550 between 10:35-11P. A few other recent logs include WSPC-1400, WFLN-1520, WKZQ-1520, & WSDQ-1190. So there is some good DX in with the static, and Gerry Thomas said it best, in the summer you DX when Mother Nature lets you-hi! I was up in the GA mountains recently, stopping at a roadside flea market and found 4 old roadmaps, dating from the 40's-60's. The one of particular interest was a '52 'Tourist Information Map' which shows a 'strip map' (similar to those AAA 'Trip Tiks') of one route, this one US129/US25/US25W through the S, from Lexington, KY to St. Petersburg, FL. Why was this so interesting? Because on the map, it showed the approx. ranges of radio stations along the route! For example, WFLP-1450 was audible from Cincinnati to Berea, KY, then you could pick up WCFT-1400 to Jellicoe, TN. I may send in copies for filler material. I also picked up for \$5 a '53 Atlanta City Directory which includes a half-page ad for WEAS-1010 in Atlanta, mentioning 10000 watts (I assume this is now WGUN Decatur). By the way, I noticed in a local bookstore that there is a modern incarnation of that tourist map in the form of a guide book that lists selected radio stations along various routes and/or by city. Does anyone have any information on the following stations: WKFL-1170 Bushnell, FL (no local phone listing), WBRZ-1120 Destin, FL (no local address/phone, only a Shaker Hts, OH listing), KGHF-880 (no local phone) or WKRU-1510 Burnetown, SC (f/up was stamped 'out of business' and no local phone listing). All of these have been reported this year with no response. Has anyone received a verie from the KLEY-1130 Test? Verie count is up to 1,443 with a quantum leap of 12 new additions in April, the best month in years! And after 25 years on WSB-750, the Atlanta Braves have announced their new flagship station will become WGST-640/WPCH 94.9. In '84, the Braves were on WCNB-680 for 1 year. I'm sure the reason is for the range of WPCH, their 100,000 watt signal will cover better, especially with WGST on night power/pattern. I assume the network will stay intact. I've run on long enough, so 73's.

RUSS EDMUNDS -- 753 VALLEY ROAD - BLUE BELL, PA 19422-2052

Greetings again. Not much to report for AM except static-hi! Thanks to a combination of excessively hot weather especially weekends and a couple of minor injuries, I've not gotten up to the roof to finally declare my rotator dead nor have I gotten up into the trees to put up a LW. The latter is also hampered by having lost the tree near my back property line in a storm, where I was going to hang one end. FM has been decent with one E-Skip opening and several tropes. I'm surprised, in looking back at last season, that I've got so many UNID's where I have what ought to be enough info for someone else familiar with the station in question or the area in question geographically, to ID them. Since these only appeared in DDXD, I'll run through a few of the most prominent ones: 3/5 730 o/u CHYR/CKAC, had one with ads for Atco Hot Water Heaters, Sears, an UNID insurance agent, all with the phone prefixes 987/988 around 7:30P, but about 7:40P, noted an ad for A&L Auto Recycling on Route 2, which may or may not have been the same station. WFMC was in a bit later for the Winston Cup/Nascar thing (for which I'm still looking for a station list-hint!) and it could have been they. 4/9 1170 s/off with Kate Smith's 'God Bless America' at 8PM. 2/25 FF u/WQSI @ 7:30PM. Expo's baseball u/WHYL-960 4/23 @ 7:40PM. A 'Radio Cadena Mundial' on 1020 3/26 @ 7:43PM. 3/18 7:27PM a sports talk show u/WAGE-1200. Can anybody help with one or more of these? My quantity of UNID's is up this year due to almost all of my DX being done in the mobile, it's tougher to hold on to things, that's for sure! I'll probably be running FM only thru Sept., depending on weather & conditions, though I still periodically check frequencies where locals/semi locals have left the air such as 1380, 1510, etc. 73's.

DAVE SCHMIDT - P O BOX 11502 - WILMINGTON, DE 19850-1502

The saga of WDSB-800/WZNS-92.9 continues, we got the AM on the air for testing 8/3 and the FM on 8/8, a LOT of rebuilding continues. The DE DOT has set up a TIS system on 530 in the Lewes/Rehobeth Beach area which I have heard here on the truck radio in front of the house, about 65-70 miles away, weak but audible. Convention plans are still up in the air, depending on the work load here so it's still a maybe at this point. Thanks for the support this issue! 73's

"Hot Rodding" the Realistic 12-625 ... by Ray Cole

I have a Realistic TRF 12-655 and a 12-625. Reports of other 12-625 owners indicate poor results with some of them. I began experimenting and found a simple way, without a signal generator, to peak my 12-625 which now has it closely equalling my 12-655 in side by side tests on very weak signals across the entire AM band. The exception is that the 12-655 has slightly more selectivity adjacent to locals (to be expected with its RF stage).

Then, in addition, I found a simple way to externally couple my 8' vertical antenna to it and about triple its receiving power.

Set the AM-FM switch to AM and the tone control to high. Pull off the three front knobs. Completely "unwind" the five phillips screws in back (one in the battery compartment). They may or may not fall out of their countersunk holes. Replace the batteries. Pull off the front panel.

You will notice 8 IF transformers. Four of these have larger diameter trimmer screws, four have smaller ones. The latter are toward the right, especially noticeable when the IF's are located in pairs. Using a small screwdriver with a plastic handle, adjustments are made only on those with the smaller screws - and none should need more than a quarter turn.

But the big secret to this process is to first locate a station signal as near the low frequency end (530 khz) as you can find one that is not a local. Then constantly "fan" the dial across this signal with one hand while with the other hand you slightly and slowly turn, in both directions, the screw in the IF just to the right of the tuning capacitor.

The object is to locate the IF setting that will give the loudest signal regardless of where the signal moves to on the dial. And it may move as much as one-eighth inch to where you find it best. And it may increase in volume by two or three times at that point.

You will now have moved all your station settings somewhat across your entire dial, but since it was totally inaccurate to begin with, you haven't lost a thing - just gained a great deal of sensitivity all across the band. I suspect the factory sacrifices that to try to get some sort of dial readability - and comes up with a very poor compromise.

After you take your time and carefully peak that IF, leave it and the dial strictly alone and peak and repeak the remaining three IF's with small screws - in no particular order. And your job is done.

If you would like a really good logging scale, before replacing the front panel, photocopy a centimeter rule and cut out a 15 centimeter length of the photocopy numbered from 0 to 15. Use silicone caulk, if available, to cement it to your dial below the regular markings.

I also get a photocopy of the same rule with a size increase of 10% (check and make sure it is exactly 10%) and use a piece of what was 1 1/2 centimeters to cement to the back of the dial indicator, so that exactly one centimeter projects to the left, forming a ten point vernier that will then split 1 mm. into ten parts for really accurate logging.

After reassembling the case, find or make a small coil about 1/2" diameter and about 1" long of #30 or finer wire. Silicone or glue this horizontally to the back of the case centered about 1/2" below the word "expose". Connect a short antenna and ground to this for a huge boost in power, beyond what you already accomplished with peaking of the IF's. In fact, a local can overload the circuit and show up on the dial where it shouldn't be.

Then, if you have a 12-655, set the two receivers side by side, using no external antennas or coupling to either, find some weak signals and compare. You should find them about equal except for the extra selectivity of the 12-655 next to locals.

Whether or not this peaking procedure would work on other receivers, I do not know. I presume having a wiring diagram for the receiver would be a good idea before trying it, so that you know which IF should be adjusted first, while fanning the dial.

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