

RENEWALS: Paul Kotke of Saint Paul MN, Steve Mittman of Seal Beach CA Lance Thomas of Airdrie Canada, Gary Siegel of Toledo OH, Peter Murphy of Bella Vista CA. Thank You All For the Support.......

IRCA 1996-7 TED VASILOPOULOS AWARD BALLOT

Each year, the IRCA membership selects an IRCA member to receive the TED VASILOPOULOS AWARD (TVA). The award was named after Ted Vasilopoulos, a charter member of the IRCA known for his high DX standards and contributions to the club. The award is given to the IRCA member that has made a significant contribution to promoting and keeping the IRCA a thriving club during the 1996-1997 DX season. The winner receives an engraved plaque and a free year membership in the IRCA. The last 5 TVA winners are not eligible for the award. They are Phil Bytheway, Lynn Hollerman, Nancy Hardy, JD Stephens and Ralph Sanserino. Any other IRCA member can be nominated and last year's winner, Phil Bytheway is coordinating the nominations. Send the names and a brief description why the person should receive the TVA to: Phil Bytheway, 9705 Mary NW, Seattle WA 98117 (bytheway@atk.com)

Also up for voting is the Heald Award. The purpose of the Heald Award is to recognize the IRCA member who most benefitted the club in a particularly noteworthy way during the previous year (1996-7). JD Stephens and Lee Freshwater are not eligible for the Heald Award. The winner receives a printed certificate. Should the same member win both the TVA and the Heald Award in a given year, he/she would be presented with the TVA, and the runner-up for the Heald Award would receive the Heald Award. Send your Heald Award nominations to: Phil Bytheway, 9705 Mary NW, Seattle WA 98117 (bytheway@atk.com)

Deadline for receiving nominations is February 21 1997. pb

1997 IRCA CONVENTION: July 25, 26, 27 Holiday Inn 3131 S Bristol Costa Mesa CA 92626. Make reservations with sales department at 1-714-557-3000, be sure to mention convention rate. Registration fee \$35.00 payable to: Mike Sanburn PO Box 1256 Bellflower CA 90707. Be sure to get your #35.00 in early so Mike can keep things in order....

# KORE 1050AM

## DX TEST

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770 - WWCN - Estero FL (IRCA)
2/10/97 Mon - 0030-0100 -
                            640 - WHLO - Akron OH (IRCA)
            - 0100-0130 -
                                   EMAIL: DavevJohn@aol.com
2/11/97 Tue - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/12/97 Wed - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/13/97 Thu - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/16/97 Sun - 0030-0100 -
                            640 - WBOW - Terre Haute IN (IRCA)
2/17/97 Mon - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
            - 0100-0130 - 1070 - KHMO - Hanibal MO (IRCA)
2/18/97 Tue - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/19/97 Wed - 0030-0100 -
                            770 - WWCN - Estero FL (IRCA)
2/20/97 Thu - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/22/97 Fri - 0000-0200 - 1330 - WPPI - Carrolton GA (IRCA&NRC)
                          1150 - KIMM - Rapid City SD (IRCA)
2/23/97 Sun - 0200-0300 -
                                   EMAIL: rrr@rapidcity.com
                          770 - WWCN - Estero FL (IRCA)
2/24/97 Mon - 0030-0100 -
            - 0100-0130 - 1290 - KALM - Thayer MO (IRCA)
                                   EMAIL: Watson@evergreen.net
2/25/97 Tue - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/26/97 Wed - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
2/27/97 Thu - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/ 2/97 Sun - 0515-0545 -
                           770 - WCGW - Nicholasville KY
                                                          (IRCA)
3/ 3/97 Mon - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
            - 0100-0130 -
                           790 - KFGO - Fargo ND (IRCA)
3/ 4/97 Tue - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/ 5/97 Wed - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/ 6/97 Thu - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/10/97 Mon - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/11/97 Tue - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/12/97 Wed - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/13/97 Thu - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/17/97 Mon - 0030-0100 -
                           770 - WWCN -
                                        Estero FL (IRCA)
3/18/97 Tue - 0030-0100 -
                           770 - WWCN -
                                        Estero FL (IRCA)
3/19/97 Wed - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/20/97 Thu - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/23/97 Sun - 0300-0400 -
                           570 - KKFJ - Alturas CA (IRCA)
3/24/97 Mon - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/25/97 Tue - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
3/26/97 Wed - 0030-0100 -
                           770 - WWCN - Estero FL (IRCA)
                           770 - WWCN - Estero FL (IRCA)
3/27/97 Thu - 0030-0100 -
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**IRCA Foreign Logs** 

The IRCA has published nine volumes of the IRCA Foreign log. Each volume contains the several hundred actual tips that were reported to the DXWW sections during an entire year, compiled and retyped in a book format. In addition, special features include: articles on foreign DXing (volumes 6, 7 and 8), utility lists (volumes 7 and 8), snortwave parallels (volume 8) and BCB propagation (volumes 6, 7 and 8). The IRCA Bookstore still has volumes 3, 4, 6, 7 and 8 of the IRCA Foreign Log available for \$2.50 each (overseas airmail add \$2.50/book).

Order from the IRCA Bookstore, by sending the correct amount (in US funds) to:

IRCA Bookstore, 9705 Mary N.W., Seattle, WA 98117-2334. Thank you!

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IRCA Bookstore, 9705 Mary N.W., Seattle, WA 98117-2334. Thank you!



## WESTERN DX ROUNDUP

Nancy Johnson 979 Neptune Boulevard Billings, MT 59105-2129



Electronic Mail: Internet: WDXR@aol.com

America On Line: WDXR Compuserve: 74444,3075 Prodigy: MPNN49B WDXR DEADLINES: Feb. 7, Feb. 28 (Anniversary issue), March 14, April 4, May 2, June 6, July 3, Aug. 1, Please use Eastern Time.

REPORTERS FOR THIS ISSUE:

(LBG) Larry Godwin-2390 Clydes Dale Lane-Missoula, MT 59804 lbg@selway.umt.edu Hammarlund HQ-150, Sanserino air-core box loop & KIWA loop

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

Drake R8, 900' NNW Beverage, 1500' E Beverage, terminated 200' SW wire (BP) Bob Pietsch-230 Winchester Court-Foster City, CA 94404 marbob@ix.netcom.com Sangean 803A

(NP) Nigel Pimblett-1146 Queen Street-Medicine Hat, AB T1A 1B4 R-5000 and R-8A with 1000' Beverage at 260 degrees

(CR) Craig Rathbone-Denver, CO NOBSA@AOL.com GE Superadio III

(RW) Robert Wien-1309 Dentwood Dr.-San Jose, CA 95118
GE Superadio II, GE long-range portable, Select-Antenna

#### OF SPECIAL INTEREST

540 KGIL <u>CA,</u> Costa Mesa (ex-KNNZ) 1/14 1955 battled CBK & XEWA, calling itself "The all new KGIL" during oldies program. ID'd for me by Mike Sanburn. (LBG-MT)

1340 KCBL CA, Fresno 1/6 0358 good on top of frequency with ID "Nobody's got more balls, The Ball, KCBL, Fresno, AM 1340" then 1 on 1 sports. Call change, ex-KKTR for me. (RW-CA)

620 KGTL AK, Homer 1/9 0125 with EZL music, sounded like original hits, ID "Homer's AM 620" into Mr. Sandman. KOTK/KIPA QRM. (PM-OR)

670 KDLG AK, Dillingham 1/9 0119 with local sounding pop music program over/under KBOI off north Beverage. Brian Adams' song. (PM-OR)

700 KBYR AK, Anchorage 1/9 0129 fair with sports talk "AM 7" IDs and time checks. (PM)

740 KVFC <u>CO</u>, Cortez 1/14 1000 very strong in KCBS null with ID "Your good times and great oldies station, KVFC, Cortez." (LBG-MT)

KTRH TX, Houston Sun. 1/12 0800 weak during KCBS silent period with CBX nulled. I heard "Radio 740, KTRH" and "KTRH newstime." (LBG-MT)

750 KFQD AK, Anchorage 1/9 0126 fair under KXL with sports info on college basketball, ment. "KFQD." (PM-OR)

840 KXNT NV, North Las Vegas 1/13 2100 ID at top of the hour during Tom Leykis show, ex-KVEG. (BP-CA)

920 KVEL UT, Vernal 1/15 2000 atop KXLY with call ID. Announcer was Rich Miller. (LBG-MT)

930 KTKN AK, Ketchikan 1/8 2350 good with spots and KTKN ID. (PM-OR)

KRKY <u>CO</u>, Granby 1/13 0800 audible through local KLCY. Man said "This is Rocky Mountain Info. Network station, KRKY in Granby, Colorado" after C&W tune. (LBG-MT)

KCCC NM, Carlsbad 1/9 2359 fair signal just long enough to hear the call & location, into news. New one. (CR-CO)

- 940 KXTK IA, Des Moines 1/11 0002 weather (cold, with dangerous wind chills), then ID as "Talk 940, KXTK, Des Moines." (NP-AB)
- 950 ?KMER? WY, Kemmerer 1/9 1856 presume this is the one here with state weather from the "Wyoming News Network," and ID with local weather as "K-95." (NP-AB)
- 1010 KTNZ TX, Amarillo 1/13 0900 strong in CBR null with ID, "Twin Tens, KTNZ, Amarillo."

  New. (LBG-MT)
- 1020 KJJK MN, Fergus Falls 1/5 0140 oldies, ABC news at 0200, weather by man, with ID at 0205 "KJ Oldies, 1020, KJJK." New one here. (NP-AB)
  - CKVH AB, High Prairie 1/5 0136 weather, ID "The radio station specializing in today's hot new country and your all time favourites, 1020, CKVH." (NP-AB)
- 1270 KIML WY, Gillette 1/9 0915 good signal with local ads. "This is the Wyoming News Network" and "WNN." (CR-CO)
- 1300 KYNO CA, Fresno 1/12 2335 good signal just out of the mess. "The Big 1300, all sports" and into "Prime Sports Show." (CR-CO)
  - KBRL NE, McCook 1/9 0905 fair with local news & ads. (CR-CO)
- KOLY SD, Mobridge 1/9 0955 weak with local news & ads for the area. (CR-CO)
- 1520 ?KTRO? <u>CA</u>, Port Hueneme 1/11 2254 believed the one challenging KFXX & KOMA. It gave commercials for University of La Verne with phone number 981-8030; that city is about 80 miles from Port Hueneme. (LBG-MT)
- 1540 KXBA WA, Bellevue 1/6 0300 finally logged this one with several ads for Personal Achievement, ID before hour, back into network Personal Achievement programming. Varying signal in KXMG null, Call change, ex-KBLV. (RW-CA)
- 1580 KLOQ CA, Merced 1/14 1910 atop KGAL on car radio with PST time check & ID as "Radio Lobo." Announcer spoke in Spanish very fast. I phoned station to confirm new slogan (ex-"El Tigre"). Has new phone number 209-358-9723. New. (LBG)

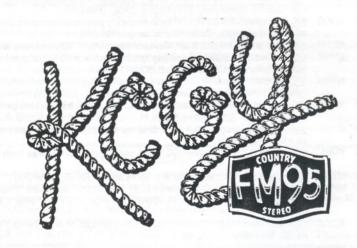
### DX TEST

- 1200 (CFCO) ON, Ottawa 1/6 0300-0330 tried, not heard, only usual CKXM/WOAl/Mexican. (RW-CA)
  - +1/6 0300-0400 not a trace here, just WOAI & KFNW. Rather disappointing, as this should have made it with any kind of decent conditions. (NP-AB)

### UNID

820 1/14 2257 I heard a weak ID that sounded like KBRA. (LBG-MT)

Again, note the new Friday deadlines for WDXR. It's difficult to believe, but February 7 will be the last of the weekly deadlines! The deadline for the Anniversary Issue is Friday February 28th.



# Central DX Roundup



# Editor: John C. Johnson Internet: John Johnson@prodigy.net

### FOR THE RECORD

E-Mail: John\_Johnson@prodigy.net Mail: 979 Neptune Boulevard, Billings, MT 59105-2129 Next deadlines: 2-7, 2-28 (Anniversary Issue), 3-14, 4-4, 5-2, 6-6, 7-3, 8-1, 8-22, 9-5. Please report all times as Eastern. Keep tips to less than a month old.

### RIDING GAIN

- [SA-MB] Shawn Axelrod, Winnipeg, Manitoba, Canada. saxelrod@mb.sympatico.ca lcom IC-R70 with filter mods and Palm board. 4' box loop, Quantum loop, 100' longwire.
- [EB-MO] Eric Bueneman, NOUIH, Hazelwood, Missouri. EricB631@juno.com Sangean ATS-803A, Realistic DX-400, TM-152, Worcester Space Magnet 2.
  [KDF-IL] Karl D. Forth, Chicago, Illinois.
- Drake R8, Icom IC-R70, Hammarlund HQ-160, Spiral loop, longwire.

  Tom Jasinski, Shorewood, Illinois.
- FRG-7, Quantum loop.

  [RS-MO] Randy Stewart, Springfield, Missouri.

  Yaesu FRG-100 modified by EEB with 6-kc Collins filter, 4-kc filter.

### SPECIAL INTEREST

1310 KOCR MO, Joplin. EX-KFSB. 1-12 fair to poor with WTLC, WIBA. 1825 noted with light Contemporary Christian music from Skylight. Station promo mentioning calls, church promo. 1830 lost at pattern change/power cut. Address for veries is 1111 North Main Street, Joplin, MO 64801. [EB-MO]

## DOWN THE DIAL

- 800 KQCV OK, Oklahoma City. 12-26 fair o/Mexican. 0106 with several KQCV mentions, "Point Of View" program. [KDF-IL]
- 850 WRBZ NC, Raleigh. TENTATIVE. 12-29 poor u/KOA. 2125 with oldies music and slogan "The Buzz." No other good details. I have this one listed as changing calls to WYLT, but if this is them, they are still using the same slogan. [RS-MO]
- 940 WMWR GA, Macon. 1-8 with poor signals in a mess with CBM and CJGX. 2058 with a clear "AM 9-40 WMWR" ID. New for me. [SA-MB]
- 1020 KJJK MN, Fergus Falls. 12-28. 0312 with oldies, ID, spots, and a promo for high school football on their FM. [KDF-IL]
- 1310 WTTL KY, Madisonville. 1-17 good to fair with others and splash from KSIV-1320. 1759 noted with legal ID "AM 13-10 WTTL Madisonville, Kentucky." Local spots, USA Radio Network News and talk from the Talk America radio network. [EB-MO]
- 1390 KULP TX, El Campo. 1-7 poor. 2132 with half-time of basketball game. "This is..... basketball on KULP." Couldn't read the team name. Spot for Farmer's Co-op of El Campo. New logging for me. [RS-MO]
- 1410 WIZM WI, La Crosse. 1-7 occasionally atop. 2105 weather forecast, "14-10 WIZM" ID, spot for Milwaukee Brewers Winter Tour coming to the LaCrosse Center, then "Radio that makes news sense, Whiz'em, LaCrosse's news station." Into TalkNet. Have needed this one for a long time for call change. Last logged MANY years ago as WKBH! [RS-MO]
- 1500 WDEE MI, Reed City. 12-26 fair in KSTP null. 1827-1851 with oldies, "Classic Hits, AM 1500 WDEE" ID, local spots. New for me. [KDF-IL]

- 1530 KFBK <u>CA</u>, Sacramento. 1-7 fair u/WSAI. 2119 coming out of a travel agency spot with "Flood Watch '97 with Jeff Bell and Kitty O'Neill continues... news, talk KFBK." Also a TC "... on news talk KFBK." New log for me. [RS-MO]
- 1590 WATX TN, Algood. 12-28 fair o/WVNA. WONX off. 0220-0300 with "One On One Sports. "15-90 WATX" ID at 0305. [KDF-IL]
- 1620 WXJ75 IL, Springfield. 1-11. 1400 solar powered TIS located at rest stop along southbound I-55 on north edge of city. Sign at entrance mentions solar power. Tape loop about local and state weather, highway conditions. Range was about 100 yards. Just covered the parking lot. Signal lost when getting back on the interstate. [TMJ-IL]
- 1630 KXBT CA, Vallejo. 12-27. 0135-0150 with ID, R&B oldies, spots. Strongest signal yet on 1630, but some interference from a new TIS. [KDF-IL]
  - WD(UV?)-863 IL, New TIS partially ID'ed. 12-30. 0204 with on and off tone, train whistle. Located near Lake-Cook Road in Deerfield, IL. [KDF-IL]

### DX TESTS

- 560(KPQ) WA, Wentatchee. 1-11 DX Test. 0300 not heard, only KWTO and WIND. [SA-MB] +1-11 DX Test. 0300-0400 listened during this time for the DX Test. Too much WIND and others. Nothing recognizable. Will replay the tape made a few times more to see if there is any code. [TMJ-IL]
- 980 WAPF MS, McComb. 1-13 DX Test fair to poor, heard with WCUB, WONE, and unID. 0200-0230 with code, voice ID's and music. [TMJ-IL]
- 1140(KXNO) NV, Las Vegas. 1-4 DX Test. 0256-0340+ nothing heard that would indicate any kind of DX Test here (no code, TT, etc.). 1140 was a mix of strong WRVA and KSOO. This should have been possible if they either ran on time or used 10kW ND day power. Did this test in fact run? Much needed here for verie as KDWN-720 seems reluctant to verify. This is basically the only DX Test I've tried for so far this season! Oh well... [RS-MO]
  - WAKK MS, McComb. 1-13 DX Test fair to good in WRVA null. 0130-0200 with music, code, voice ID's giving credit to IRCA. [TMJ-IL]
- 1310(KEZM) LA, Sulphur. 1-11. 0100-0130 listened during this time for the DX Test. Too much WIBA and others. Nothing heard. [TMJ-IL]

### UnIDS

980 unID

1-11 while listening to the WAPF DX Test. 0200-0230 station heard with Moody
Bible Institute and Unshackled program. Might be WKLF or WGWM. No ID heard
on this. Any ideas who this was? [TMJ-IL]

### unIDS HELP

- 660 unID Both Eric Bueneman and Lee Freshwater offered help for Robert Pote's unID in the 1-11 CDXR with "Radio Aahs." This is WHOZ Fairhope, AL, EX-WBLX. They have recently switched to this format from Urban oldies. With 22,000 watts they get our rather well on SSS. Thanks Eric & fresh!
- 700 unID Larry Godwin offered help for Robert Pote's unID with a preacher might be KGRV Winston, OR which is a regular into Missoula, MT. Thanks, Larry!

### 25 YEARS AGO

February 5, 1972 issue of IRCA's "DX Monitor" — Frank Wheeler of Erie, PA told us about his first grandchild Miriam Elizabeth born on 12-22 — Randy Minnehan of Columbus, OH logged state #42, WY with KTWO — Brian Cartwright of Johnstown, PA said he was 12 and in the  $7^{\text{th}}$  grade. So far he had logged 290 stations — David Peterson of Winnetka, IL verified WRDI-NJ and KGHL-MT adding 2 new states — Paul W. Petersky of Bellevue, WA verified HLKA and 4VEF.

### OPEN MIKE

He who slings mud loses ground. There are only three more weekly issues in this DX season! Be sure to check the deadlines at the top of the column. Make plans to submit something to the Anniversary Issue this year. You don't need a long list of logging. Even three or four items would be welcomed. It looks like Mike Sanburn is putting together a super convention in Costa Mesa, CA next July. Nancy and I will not be able to attend this convention. The July 25, 26, and 27<sup>th</sup> dates conflict with other plans. Tomorrow is Ground Hog Day. We all are waiting to see if we will have six more months of winter. 8 73, John.



(LF-FL)

your editor

# Eastern DX Roundup

Editor: LEE FRESHWATER
414 SE 3rd ST
OCALA FL 34471

STARS

OF

THE WEEK

Drake R-8A / HQ180A, Potomic FIM-41

KIWA Loop, 75' 1.w. N/S 7916 Burholme Ave., Philadelphia, PA 19111 Ernest Meyer Drake R-8A, 100' 1.w. , KIWA Loop VIA U.S.P.S. 1722 Piccadilly Cir., Allentown, PA 18103 (RB-PA1) Rich Boehme Realistic DX-392 w/SelectATenna DXing in VW Jetta Car Radio to & from work (RB-PA2) Rich Boehme in Trexlertown, PA VIA E-MAIL 106 Anita Dr., Madison, AL 35758-7163 Drake R-8, SR II, Panasonic RF-2600, Rad shack (JD-AL) J.D. Stephens di-pole/ Shotgun Loop, 75' 1.w. \*\*\*\*\*\*\*\*\*\* LOGGINGS North Bay 12/31/96 2100 "600 The Cat, North Bay's Best 600 CKAT ON Country." Weak signal but occasionally strong fade-ins. (RB-PA1) Roanoke 12/31/97 2115 Country music, weak but 610 WSLC VA (RB-PA1) understandable ID under WIP, Philly. Washington 1/19 1917 Up briefly w/local talk show WMAL DC 630 Local wx. Telco number as "..888-WMAL" back into talk show, then gone. new Pisgah Forest 1/13 2215-2225 Talk about weather in that 720 WGCR NC part of North Carolina, mention of church in nearby Hendersonville, good briefly. (EM-PA) Penn Yan 12/29 0650 Adlt Stnd/Oldies mix followed by WYLF NY 850 station ID. Fairly strong signal. Raleigh 1/2 2018 Duke Basketball. Strong but fadey NC WKIX signal. Heard station ID followed by commercial blitz. Columbus 1/21 1729 with S/off Very poor. Mentioned 9000 880 WRFD OH watts with 5000 watts during "Critical Hours" Owned by "Salem Media of Ohio" A real surprise mixing with WCBS. New for me. (LF-FL) Roberval 1/2 2022 Tentative ID. There was a lot of CHRLt PQ 910 French Talk, so I am assuming it is a PQ stn. Average signal with occasional fades into noise. (RB-PA2) Cortland 12/29 0700 Oldies with station ID. Picked out NY 920 WKRT of jumble. I get this one routinely lately. (RB-PA1) Wooster 1/4 2145 Syndicated tlk show, full ID. Good over OH 960 WKVX many rivals, # 11 on 960 for me. (EM-PA) Sharon 1/17 0718 Report of school closings/delays in WKZE CT 1020 Western CT & MA. Some Eastern NY closing/delays also. Came in strong for about 60 seconds, and then was swamped by KDKA. Could hear CW music u/KDKA. (RB-PA2) Huron 1/18 0046-0100. Redering WPHT-Philly nonexistent KOKK 1210 with Country music, frequent call & freq. IDs, plus

"Dakota Country" slogans by female DJ. Local weather (8 below-a heat wave for them) Live annor, not satellite.

			s/off at 0059 by man giving areas of coverage and schedule as 5:30 to midnight local. Thanks to Tom Bryant for the tip. Evidently, they forget to power down and/or
			switch patterns from time to time, and I've been
1240	WWCO	CT	checking the frequency for over a month. (JD-AL) Waterbury 1/18 2230 "Hometown favorites, 1240 AM CO" Pop music favorites call in requests. (EM-PA)
	WJTN	NY	Liberty 1/14 2220-2230 C&W mx, call letter ID, mention of Sullivan Co. & upper Delaware watershed, fair to poor (EM-PA)
	WHIZ	ОН	Zanesville 1/18 2150 "Your AM sports leader, WHIZ", "The Ohio State basketball network." (EM-PA)
	CJCS	ON	Strattford 1/17 2235 Call letter ID, "It's now minus 17 in Strattford. Low tonight -24." Fair briefly. (EM-PA)
1290	WVOW	WV	Logan 1/16 0455 Call letters momentarily popped up from many competing stations. (EM-PA)
1350	WHWH	NJ	Princeton 1/15 0710 One of many fighting over the freq. Heard ID and then it was gone. (RB-PA2)
1380	WSYB	VT	Rutland 1/13 0705 Adlt Contemp format with station ID. Sounded like "WFIZ". Heard again 1/16 at same time with Rutland news. Faded up out of mess. (RB-PA2)
1420	WHK	OH	Cleveland 1/11 0545-0600 Call letter ID, rel pgm "Hope of the Night" initially weak becoming better. (EM-PA)
1540	KXEL	IA	Waterloo 12/29 0645 Oldies Mix followed by station ID. Fighting with WBCB, Albany NY. Long fades, either station dominant for about 30 seconds each. (RB-PA1)
1580	WZKY	NC	1/12 1900 Brief blast in with station ID then nothing. Very strong for about 30 seconds. (RB-PA2)
	WDAB	SC	Travellers Rest 1/12 1902 Debbie Boone song into a station ID. Blasted in briefly after WZKY faded out!
1630	KHBT	CA	I got really lucky for about 5 minutes here !! (RB-PA2) Vallejo 12/28 0630. First ever transcontinental DX! I got this one on tape! Weak but steady signal, playing
			Motown music. Station ID followed by a Sears & hawking the Sears Card to buy computers! (great catch Rich, I was able to log them last year when they started out on 1640, but have not heard them since they moved to 1630-
****	*****	****	ed) (RB-PA1)
			SPECIAL INTEREST
1070	WHYZ	sc	Greenville 1/20 1755 Has been logged two nights in a row with Excellent signal. Promo for Tom Joyner "6-10 AM only on the BIG Z 10-70 WHYZ" Into R&B mx. This station has been silent for a long time and recently returned to
1230	WGGG	FL	the air. (LF-FL) Gainesville. The continuing story continues. Station is ON the air playing "Lush" type Orchestra mx, w/ID incerted every 10 minutes. Signal is SO BAD that at 1 mile it only reads 5mv/m. Extremely LOW. Waiting for a special current meter to read the tower current, then
****		****	the ground system will have to be looked at. Don't expect regular programming (WMOP simulcast) for another couple of weeks.
****	****		
			DX TESTS
620	WRJZ	TN	Knoxville 12/29 0244-0330. Loud with gospel music, several code IDs, many "Joy 62" slogans. This ran for
630	KJSL	MO	over 30 minutes, not 5- which was my typo. (JD-AL) St. Louis 12/30 0300-0330. Even though this test was confirmed via phone by me the Friday before, I was told
			during a phone inquiry after the test date that the time

during a phone inquiry after the test date that the time slot had been sold, and that it did not run. Am working

St. Louis 12/14 0300-0330 I confirmed this test via phone just hours before, and, like KJSL, found out when I called to inquire after the test date, that the time

on rescheduling this.

4

770	WWCN	FL	slot had been sold, and that it did not run. Am working on rescheduling this. (JD-AL) North Ft. Myers 1/8 0030-0100. Not heard on this date, or subsequent dates yet, due to local WVNN. Folks might want to know that the test is now running in this time
			frame, M-TH. After the original scheduling of this test, its time block was sold. Only after noticing the "not heard" and "heard regular programming only" logs, and then calling the station did I learn this. PD "Joey C"
			was happy to resked at this new time. It is running and has been logged in Italy. (JD-AL)
910	KIYU	AK	Galena 12/29 0500-0530. Not heard. I did hear from a DXer in New Jersey who heard it. (JD-AL)
980	WAPF	MS	McComb 1/13 0200-0230. Quite loud with Polkas by Weird Al Yankovic, tunes on a music box, frequent code IDs giving calls several times, and numerous IDs mentioning
			IRCA. A very well done test. (JD-AL)
1140	KXNO	NV	North Las Vegas.1/4 0300-0330 Not heard. Have seen reports of nothing but regular programming, despite my confirming this by phone just hours before the test
	WAKK	MS	Al Yankovic, frequent code IDs giving calls several
			times, and numerous voice IDs mentioning IRCA. A very well done test. (JD-AL)
1200	CFGO	ON	Ottawa 1/6 0300-0400. Not heard, but not needed. It did run, however. (JD-AL)
1310	KEZM	LA	Sulphur 1/11 0100-0130. Heard one code ID pop up out of the mud with several sets of call letters, followed by a tone. Bits of Oldies music the rest of the time. Glad to
1420	KSTN	CA	get this 50 watter! (JD-AL) Stockton 1/1 0300-0800 Listened from 0300-0500. and not heard during this time period. Was widely heard out West, though, and scattered reception reports throughout
			the midwest and even one from Indiana. (JD-AL)
****	*****	****	*************

Well, that a wrap for another week. Glad to see Rich Bohme back in the fold, and THANKS to JD for a great update on DX tests. Had a long land line chat with Ralph last Sunday morning. Great to talk with him!! Looks like I will be spending a couple of days next week down at WTMY / WBRD. Will be setting up another batch of DX tests for those two as well as a third station they are buying. Expect to close that deal next week. More on that from JD as a schedule gets set up. Hope to hear from you all soon. 73's and all the best...........fresh.......





# Western DX Forum 8 8

Reid Wheeler, Editor 5910 Boulevard Lp SE Olympia WA 98501-8408 (360) 786-6756 6-9pm PLT

Deadline: Saturday 2 weeks before publication

### Art Peterson, 851 31st St, Richmond CA 94804

Concerning the DX Worldwide II item on Anguilla in DXM 1/4, I do not have any info on whether the MW outlet is on or off, but I do know that the Caribbean Beacon is now transmitting on SW. On 12/29 at 0445, I happened upon KAIJ-5810 when Dr. Scott was announcing the startup of broadcasting on 6090. Zipped over to 6090, and sure enough, Anguilla was loud and clear // KAIJ. The 100kw trasmitter is probably for SW. Perhaps with the SW outlet going, they intend to drop AM & FM? 73 and good DX to all.

### Larry Godwin, 2390 Clydes Dale Lane, Missoula MT 59804

(E-Mail to lbg@selway.umt.edu)

1/18] Greetings! I received a nice verie from Tom Bryant at WSM for recent reception. It's my first E-mail verie. Many thanks to Bruce Portzer for helping me figure out why I receive images on 1660 and 1690. The Winter, 1996 issue of NTIRE NEWS has some interesting info on the expanded band. It says the FCC will soon issue its third list of AM stations, but likely it won't be the final one. Some stations selected in the second list had no intention of moving. NTIRE NEWS will soon petition the FCC to make 1710 available for HAR's. Also, the publication points out that Canada has adopted a plan to move all AM and FM stations to the "L-band" (above 1400 MHz), so likely we won't find any Canadians moving to the expanded band. All for now. 73 and good DX.

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# **IRCA Technical Column**

editor:

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

# Remote-Controlled Termination Beverage Antenna

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### Beverage front-to-back ratio

As discussed in my forth-coming article "Beverage Antenna Termination: Why Bother?", the front to back ratio of the Beverage depends critically on the termination impedance. Figure 1 below shows the variation in front-to-back ratio versus termination resistance for a 279 meter Beverage at 1.0 MHz mounted 2 meters above moderately-poor ground at a wave-angle of 20.7 degrees. In the example, the terminator must be between about  $513\frac{1}{2}$  and  $654\frac{1}{2}$ , or about  $\pm 10\%$ , to achieve a front-to-back ratio of 25 dB or more.

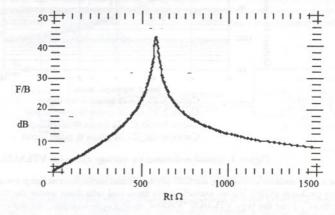


Figure 1. F/B ratio versus termination resistance.

It isn't possible to predict the exact value for the termination resistor that maximizes the front-to-back ratio. The characteristic impedance of the antenna varies with the height above ground,

ground conductivity, permeability of the earth, and frequency. The effective height above ground is difficult to determine since RF penetrates the earth to some extent and thus the effective height is greater than the height above the surface of the ground. The ground conductivity depends on the composition of the soil and its moisture content. This varies both seasonally and with the weather. According to measurements reported in Belrose, Litva, Moss, and Stevens (Ref. 1), the characteristic impedance of a Beverage varies approximately ±20% over the frequency range of 2 MHz to 12 MHz.

Ideally you should experimentally adjust the termination resistance for the deepest null to the rear. This is easier said than done since the receiver is typically 1000 feet or more from the terminator. One either needs a good pair of running shoes or a partner and a pair of walkietalkies to adjust a potentiometer at the far end of a Beverage.

### The Remote Controlled Termination (RCT) Beverage antenna

I've developed a method to remotely-control a termination resistor located at the far end of the antenna. I use a cadmium sulfide (CdS) photocell as the Beverage termination resistance. The brighter the light on the photocell, the lower its resistance. In my system a 12 volt incandescent lamp illuminates the CdS photocell. I control the resistance of the photocell by adjusting the voltage on the lamp with a potentiometer. I use #22 AWG stranded twisted-pair wire both as the antenna and to feed the control voltage to the lamp. The voltage across the twisted-pair drives the incandescent lamp at the terminator. Both wires in the twisted-pair are AC-coupled to the photocell, which is connected to the ground system.

Cadmium sulfide photocells are good RF resistors. They are fairly linear so they do not produce much intermodulation distortion. They have low parasitic capacitance and inductance. For the cell that I use, at 466 ohms DC resistance, I measured the impedance at 10 MHz as 435 - j110 ohms using a General Radio 916A RF bridge. This is equivalent to a 463 ohm resistor in parallel with a 8.7 pF capacitor.

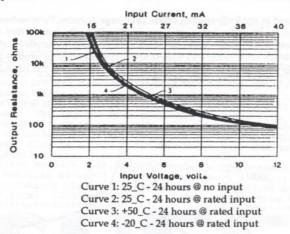


Figure 2. typical resistance vs. voltage curve for VTL3A27.

I use a opto-isolator containing the CdS photocell and incandescent lamp encapsulated in an epoxy package. EG&G Vactec manufactures them and sells them under the trade name "Vactrols". I use the type VTL3A27 "Vactrol" analog opto-isolator. The desirable characteristics for the CdS cell are a low on-resistance, a low light-history memory, a low temperature coefficient, and a shallow resistance versus voltage characteristic curve in the region around 500 ohms and below. The maximum on-resistance needs to be below a few hundred ohms since the resistance of the ground system is in series with the terminator, and the necessary termination resistance is somewhere around 400 to 500 ohms. A low light-history memory and a low

temperature coefficient are desirable to minimize drift in the termination resistance setting. The shallow resistance versus voltage characteristic keeps the control setting from being too sensitive. The VTL3A27 meets these requirements best, but is not available through distributors like Allied Electronics. I bought mine in quantity from EG&G Vactec. Figure 2 shows the typical resistance versus voltage characteristic curve for the VTL3A27.

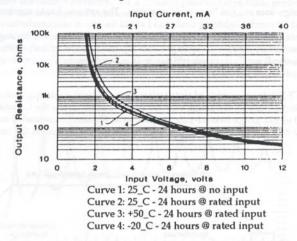


Figure 3. typical resistance vs. voltage curve for VTL3A47.

Allied does stock EG&G/Vactec type VTL3A47. This part has a lower on-resistance, a higher light-history memory and temperature coefficient, and a much steeper characteristic curve around 500 ohms. See figure 3. Mark Connelly has had success with these parts by using a 10 turn potentiometer to keep the control setting from being too "fiddly".

Figure 4 illustrates a simple application of the remote termination scheme. This uses a 9V transistor radio battery or a 12-volt lantern battery and a 1  $\rm K\Omega$  series potentiometer connected across the twisted-pair antenna wire to provide the control voltage. The capacitance between the two wires in the twisted-pair couples them together for RF. The lamp in the opto-isolator connects between the two wires in the twisted-pair and the photocell connects from one wire to the ground system. A good ground is needed, preferably at least four symmetrically-arranged 30 meter long (about 100 feet) radials.



Figure 4. simple remote-termination circuit.

Mark Connelly has adapted the remote-termination concept to other types of antennas. He's experimented with it for the termination of receive-only rhombic antennas and short phased random-wires. See Figure 9 in Mark's DCP-2 dual controller/phaser article for the design of a flexible termination-box that can be configured for Beverages and random-wires or rhombics and terminated loops. (The article is found in the DXMs for June 15 and July 13 of 1996)

### **RCT** Beverage description

I've developed a design for a remote-controlled termination Beverage that is well-suited for DXpedition use. It is designed for portability since most DXers don't have the space for a permanent Beverage installation.

The design uses rugged "low-tech" circuitry. The antenna has to survive the large voltages induced by nearby lightning strikes so I avoid the use of semiconductors such as FETs or LEDs. The incandescent lamp and CdS photocell in the terminator are quite rugged in this respect. Semiconductors are also likely to produce intermodulation in the presence of strong RF. The CdS photocell is a quite linear resistance; in my experience it does not cause any significant intermodulation products.

The RCT Beverage consists of a controller, an impedance-matching transformer, two 100 foot (30 meter) radials of #24 gauge wire for the ground system at the transformer, 1000 feet (300 meters) of #22 gauge twisted-pair antenna wire, the remote controlled terminator, and four 100 foot (30 meter) radials of #24 gauge wire for the ground system at the terminator. See figure 5.

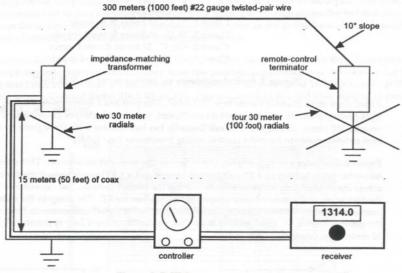


Figure 5. RCT Beverage components.

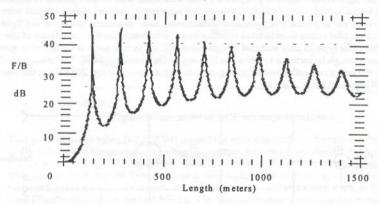
The antenna wire is spooled on a 14 inch cord-wheel. It connects to the terminator through a pair of banana plugs. A pair of insulation-piercing test clips connect the antenna wire to the matching transformer. The insulation-piercing test clips allow you to reel out the optimum length of wire for your frequency of interest. You simply clip-in to the wire leaving the remainder spooled on the cord-wheel. To ease the task of measuring the antenna length, I've had a special-run made of twisted-pair wire marked at 5 meter intervals.

As discussed in my forth-coming article "Beverage Antenna Termination: Why Bother?", the front-to-back ratio of a Beverage varies considerably with the length of the antenna, reaching a local maxima at intervals of one-half wavelength. If you have a specific frequency for which you wish to optimize the antenna, adjust the length of the antenna to a multiple of one-half wavelength at that frequency, allowing for the velocity factor of the antenna which varies from 70% to 90% depending on the height above ground (Ref. 2 and 3).

### Controller

The controller couples a variable DC voltage onto the coax feedline to the matching transformer. Coupling capacitor C6 blocks the DC from the receiver input. RF choke L2 blocks the RF signal from the control circuitry. V5, a Siemens gas-discharge tube, protects the controller and the receiver against transient voltages.

A #1815 incandescent lamp protects the controller against short-circuits. It limits the current to a maximum of 200 mA. The lamp in the opto-isolator takes a maximum of 40 mA so the current-limiting lamp has little effect unless there is a short-circuit. Then the lamp serves as a "short" indicator as well as current limiter.



1.0 MHz, 2 meters high, moderately-poor soil, 20.7° wave angle

Figure 6. F/B ratio versus antenna length.

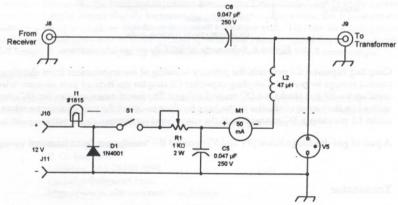


Figure 7. Schematic of RCT Beverage controller.

R1, a 1 K $\Omega$  2-watt linear potentiometer, controls the DC voltage fed to the lamp. At its maximum resistance 12 mA flows through to the opto-isolator. This gives a termination resistance of greater than 100 K $\Omega$ , which is high enough to effectively be an open-circuit.

A 50 milliampere meter serves to detect an open-circuit if the clips don't pierce the insulation on the antenna wire, if the wire breaks, or if a moose drags off the antenna. It also allows you to make a rough estimate of the termination resistance. A 1N4001 diode connected in reverse

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across the DC input provides polarity protection for the meter. If the power source is connected with the wrong polarity, the diode will conduct and the current limit lamp will turn on, limiting the reverse voltage across the circuit to about 0.7 volts. This is small enough to prevent damage to the meter.

### Matching transformer

The impedance-matching transformer contains a 9:1 unbalanced-to-unbalanced transmission-line transformer. It transforms the approximate 450 ohm impedance of the Beverage antenna down to 50 ohms to match the coax feedline. Without impedance-matching, there is a loss of 14 dB between a 450 $\Omega$  antenna source and the 50 $\Omega$  input of the receiver. The transformer consists of 5 trifilar tight-wound turns of #30 AWG Kynar wire-wrap wire on an Amidon Associates FT50-75 ferrite toroid core. I use Kynar-insulated wire rather than enameled magnet wire in order to raise the impedance of the trifilar transmission line. Similarly, the wires are tight-wound in parallel rather than twisted together in order to maximize the impedance of the trifilar line. The type-75 core material is high-permeability, so five turns is sufficient to give more than enough inductance to cover the low end of the broadcast band. The measured -3 dB point of the entire controller and matching-transformer system is about 200 kHz at the bottom and well above 10 MHz at the top.

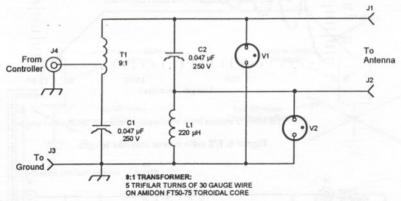


Figure 8. Schematic of RCT Beverage transformer.

Coupling capacitor C1 prevents the primary winding of the transformer from shorting the control voltage to ground. Coupling capacitor C2 couples the twisted pair antenna wires together for RF but blocks the DC control voltage. The transformer couples the DC control voltage on the center conductor of the coax feedline to one of the pair of antenna wires. RF choke L1 provides a DC connection to the coax shield for the remaining wire.

A pair of gas-discharge tubes (V1 and V2) protect the transformer from transient voltages.

### Terminator

The incandescent lamp in Y1, the VTL3A27 opto-isolator, connects directly across the pair of antenna wires. Coupling capacitors C3 and C4 block the DC control voltage from the CdS photocell. The photocell in Y1 connects directly to the ground system.

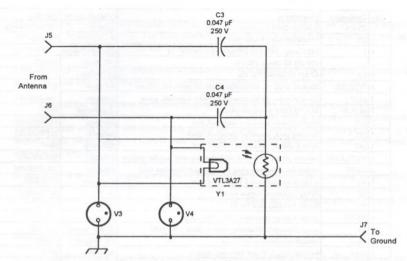


Figure 9. Schematic of RCT Beverage terminator.

Two gas-discharge tubes (V3 and V4) protect the opto-isolator from transient voltages. I used to use NE-2 neon lamps as surge voltage protectors, but after a few nearby lightning strikes the NE-2's give up the ghost. The failure mode is interesting in that there is no visible damage. They appear intact but the firing voltage is very high, possibly due to sputtering removing the rare earth coating on the electrodes. I was losing an opto-isolator every week in the summer until I finally discovered the bad NE-2's. The induced transient from the lightning strike would usually take out the incandescent lamp. This shows up immediately on the controller meter as an open circuit.

I occasionally encountered another failure mode where the photocell resistance gradually increases. Presumably the transient vaporizes some of the CdS material and slightly narrows the resistance track, which slightly increases the on-resistance. Over time, the minimum on-resistance goes up enough so that the antenna will no longer null. This can be a real puzzler - I initially suspected problems with the ground system until I finally found the bad photocell and NE-2 lamps. I now use heavy-duty gas-discharge tubes rather than NE-2 neon lamps.

### **Parts List**

Most of the components are readily available from mail-order suppliers such as Digi-Key, Mouser, and Allied. VTL3A47 Vactrols are available from Allied. VTL3A47 Vactrols are available for \$6.00 each plus \$2.00 shipping and handling per order from:

Oak Ridge Radio P. O. Box 2092 Littleton, MA 01460-3092 oakridge@ultranet.com http://www.ultranet.com/~oakridge

Assembled RCT Beverage systems are also available from Oak Ridge Radio.

Otv	Designator	Description	Manufacturer	Part No.
- Charles	C1-C6	0.047 µF 250V polyester capacitor	Allied	MDD-22E43KE
1	D1	1N4001 diode - 1 amp 50 PRV	- I MBAS	1N4001
1	п	1815 lamp -14.0 volt 200 mA bayonet T3-1/4	Chicago-Miniat	1815
1	L1	220 μH RF choke 155 ma	JW Miller	77F221
1	L2	47 μH RF choke 340 ma	JW Miller	77F470
4	J1,J2,J5,J6	banana jacks, rib loc insulated solder terminal, yellow	Johnson	108-2307-801
	[3,]7	banana jacks, rib loc insulated solder terminal, green	Johnson	108-2304-801
3	J4,J8,J9	SO-239 UHF panel receptacle	Amphenol	83-1R
	[10	binding post, insulated standard, red	Johnson	111-0102-001
1	J11	binding post, insulated standard, black	Johnson	111-0103-001
1	M1	50 mA meter, rectangular, 2-1/2 inch	Simpson	5880
4	P1,P2,P5,P6	banana plugs, insulated solderless tapered handle, yellow	Johnson	108-307-001
2	P3,P7	uninsulated banana plug panel mount threaded stud	Johnson	108-0750-001
1	R1	1 K□ potentiometer 2 Watt RV-4 type	Clarostat	RV4N102
1	S1	SPDT miniature toggle switch	Alco	MTA-106D
1	TI	ferrite toroidal core for T1	Amidon	FT50-75
5	V1-V5	surge voltage protector - 90V, 20 KAmp	Siemens	A81-C90X
_	Y1	incandescent/CdS analog opto-isolator 12V, 160□	EG&G Vactec	VT3A27
2	clips	insulation-piercing test clips	J.S. Popper	JP8783
5	clips	battery clip, 3/4" jaw opening, copper	Mueller	25-C
1	and the same of th	14" diameter cordwheel		
000		#22 gauge stranded twisted-pair - antenna wire		
600°	w Amiena	#24 gauge stranded wire - ground radials	ded mention	TOTAL STATE

Figure 10. Parts list for RCT Beverage.

### Antenna installation

I use four foot ground rods purchased from Radio Shack as mechanical supports for the terminator and matching transformer. A large Mueller battery clip grips the ground rod and the terminator or matching transformer enclosure plugs onto a banana jack attached to the battery clip. The ground radials also clip onto the ground rod using battery clips. I use two radials on the matching transformer and four at the terminator. The two on the matching transformer aren't really necessary. They do increase the received signal strength somewhat. The four radials at the terminator are absolutely necessary to get the ground impedance low enough to successfully terminate the Beverage. More radials are better. Arrange the radials symmetrically about the ground rod and antenna so that any signal pickup will cancel out.

Those hardy souls who DXpedition from a tent or cabin using battery power needn't bother with coax feedlines. For the rest of us, I recommend placing the matching-transformer end of the Beverage at least 50 feet (15 meters) away from any power-lines or structures containing electrical wiring. Most sources of radio-frequency interference are not very good antennas, so most of the noise pickup comes from the near-field. The intensity of the near-field diminishes with the third or fourth power of distance, so moving the antenna a little further away from local noise sources makes a tremendous difference in the received RFI noise level.

To avoid degrading the directivity of the Beverage by pickup in the feedline from the matching transformer to the controller, use only quality coaxial cable with a 95% or better shield braid coverage, such as Belden 8259 (a good RG-58 type cable) or RG-6 CATV cable. In particular avoid Radio Shack RG-58 cable as it has poor shield coverage and consequently is quite leaky.

I find it very helpful to use two grounds on the coax shield, one at the matching transformer and one near where the coax cable enters my shack or DXpedition cabin. The second ground helps prevent RFI from the house from traveling down the outside of the coax and coupling into the inside of the coax at the matching transformer.

For similar reasons, I recommend keeping the coax on the ground (or for permanent installations, buried) rather than suspended off the ground. The lossy earth absorbs RFI traveling on the outside of the coax.



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GE Superadio II, GE long-range portable, Select-Antenna

#### OF SPECIAL INTEREST

540 KGIL <u>CA,</u> Costa Mesa (ex-KNNZ) 1/14 1955 battled CBK & XEWA, calling itself "The all new KGIL" during oldies program. ID'd for me by Mike Sanburn. (LBG-MT)

1340 KCBL CA, Fresno 1/6 0358 good on top of frequency with ID "Nobody's got more balls, The Ball, KCBL, Fresno, AM 1340" then 1 on 1 sports. Call change, ex-KKTR for me. (RW-CA)

620 KGTL AK, Homer 1/9 0125 with EZL music, sounded like original hits, ID "Homer's AM 620" into Mr. Sandman. KOTK/KIPA QRM. (PM-OR)

670 KDLG AK, Dillingham 1/9 0119 with local sounding pop music program over/under KBOI off north Beverage. Brian Adams' song. (PM-OR)

700 KBYR AK, Anchorage 1/9 0129 fair with sports talk "AM 7" IDs and time checks. (PM)

740 KVFC CO, Cortez 1/14 1000 very strong in KCBS null with ID "Your good times and great oldies station, KVFC, Cortez." (LBG-MT)

KTRH TX, Houston Sun. 1/12 0800 weak during KCBS silent period with CBX nulled. I heard "Radio 740, KTRH" and "KTRH newstime." (LBG-MT)

750 KFQD AK, Anchorage 1/9 0126 fair under KXL with sports info on college basketball, ment. "KFQD." (PM-OR)

840 KXNT NV, North Las Vegas 1/13 2100 ID at top of the hour during Tom Leykis show, ex-KVEG. (BP-CA)

920 KVEL UT, Vernal 1/15 2000 atop KXLY with call ID. Announcer was Rich Miller. (LBG-MT)

930 KTKN AK, Ketchikan 1/8 2350 good with spots and KTKN ID. (PM-OR)

KRKY <u>CO</u>, Granby 1/13 0800 audible through local KLCY. Man said "This is Rocky Mountain Info. Network station, KRKY in Granby, Colorado" after C&W tune. (LBG-MT)

KCCC NM, Carlsbad 1/9 2359 fair signal just long enough to hear the call & location, into news. New one. (CR-CO) Here in New England the forests contain a lot of brush which makes an excellent support for temporary Beverage wires. For situations where one can't improvise supports, I recommend procuring a bundle of hardwood or bamboo garden stakes.

I try to place the wire up about one-and-a-half to two meters off the ground. Lower is OK, but the increased loss reduces received signal strength and tends to blunt the nulls.

Gently slope the antenna wire down to ground level at the terminator and matching transformer rather than running it vertically. Vertical runs will act as short omnidirectional antennas and will spoil the directivity of the Beverage. Use about a 1:6 slope; i.e. for a wire 2 meters high, slope the wire down over a length of about 12 meters or 40 feet. This results in about a 10° angle.

If you have a specific frequency for which you wish to optimize the antenna, adjust the length of wire to a multiple of one-half wavelength at that frequency, allowing for the velocity factor of the antenna which varies from 70% to 90% depending on the height above ground (Ref. 2 and 3).

### Antenna operation

In practice it's difficult to achieve null depths greater than 30 dB or so. The AGC range of most receivers is at least this large, so you won't hear any audible change in signal strength unless you disable the AGC. I find it easiest to adjust the remote termination by switching off the AGC, adjusting the RF or IF gain to avoid overload, and slowly rotating the termination control until I hear the null. I've tried using the S-meter, but the controlled-carrier schemes used by many mediumwave stations causes the S-meter to bounce around with the modulation. This makes it difficult to locate the deepest null.

The local 50 kW clear-channel station WBZ-1030 is located on a bearing almost directly behind my tropical-band Beverage aimed at Papua New Guinea. This Beverage is 175 meters long and about 3 meters off the ground. For these antenna parameters, the theory predicts a ground-wave front-to-back ratio of about 22 dB. When the Beverage is unterminated, I measured WBZ at -29 dBm. When adjusted for maximum rejection of WBZ, the signal strength drops to -52 dBm, for a null-depth in this case of 23 dB. This measurement is in fairly good agreement with the theory.

### References

- Belrose, Litva, Moss, and Stevens, "Beverage Antennas for Amateur Communications", QST Magazine, January 1983, pp. 22-27.
- 2. Beverage, H. H., "The Wave Antenna for 200-Meter Reception", QST Magazine, November 1922, pp. 7-15.
- 3. Beverage, H. H., and DeMaw, Doug, "The Classic Beverage Antenna, Revisited", QST Magazine, January 1982, pp. 11-17.

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