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Featured in this issue thanks to Kevin Schanilec..... Small Indoor Loop Antennas

### DX TEST COMMITTEE

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#### Upcoming DX Test

Sat 02/06/10 0000-0200 1150 WGGH Marion IL (Walker)

**WGGH 1150 IL MARION.** Date: Sunday morning (late Saturday night) February, 6, 2010. Time: 0000-0200 ELT (0500-0700 UTC). Mode of Operation: 5000 watts (daytime pattern). Programming: Classic Country, oldies music and various sound effects.

#### DX Tests Committee – Inaugural 2010 Report

Welcome to what we hope will be a semi-regular feature. We have undertaken to revive the DX tests Committee, a joint venture of IRCA and NRC, with a view to encouraging stations to run special tests or to let us know in advance when they will be working on their facilities. It seems, lately, that DX tests have gone the way of the QSL. Tests used to be a relatively common, yet fewer and fewer stations are participating. We used to enjoy several one or two tests a month, at their peak. Now we're lucky to get one or two a year. We'd like to see more activity. Tests are an opportunity to log new stations – daytimers running at night, or a 24-hour station running daytime power and pattern during the witching hour. More tests will also complement other efforts to revive and maintain interest in DX at a time when conventional radio's days seem numbered. Witness all the effort to promote ultralight radios, \$50 marvels that, even without modifications, have tremendous nulling capabilities and can pick up stations thousands of miles away. Tests generally run between 0000 and 0600 local time, when broadcast regulators allow testing and other related activity to take place. We don't recommend abusing this privilege – for example, running on day power and pattern on multiple, consecutive nights. Once a year, or whenever a station needs to tweak its technical facilities, is more than sufficient. Content can vary, but tests intended for DX reception generally include Morse code IDs, sound effects such as sweep tones, and an eclectic mix of music – say high-school marching bands or the wild sounds of the klezmer. In other words, material that helps the station stand out from others on the same frequency. Morse code and sweep tones are particularly effective at cutting through a crowded channel. Even graveyarders – local stations on frequencies such as 1230 and 1400 – have been heard at great distances. Stations should run DX tests using their daytime transmitter pattern and power. Otherwise, they're really doing nothing much out of the ordinary.

**DX tests don't magically appear.** They happen through the concerted effort of volunteers like you who contact the stations and ask. If you know an engineer, program director or owner at a particular station, why not ask! Perhaps you are the engineer, PD or owner. If you receive a particularly friendly QSL, send a thank-you and a friendly, polite pitch for a test. The worst that can happen is you'll be turned down. Really, that's no big deal – just move on and ask another station. Somebody, somewhere will eventually say Yes! if you persist in your efforts and make a conscious effort to be friendly and approachable. When a station agrees to test, let us know so we can notify DXers around the world. Contact us at the address above. If you're not sure how to make your query, or if your

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station contact isn't familiar with running a DX test, we're here to help. We can provide you with a generic sample letter, which you can adapt to suit your target station. We can even provide sound effects and 'weird' music. We might add that if you hear in advance of a station planning to go off the air to do transmitter work, please let us know immediately. A station briefly vacating a channel also represents an opportunity to hear stations that would normally be obscured. Furthermore, consider asking the station to run some Morse Code, sweep tones, or other DX test material for a few minutes when they're doing their work or returning to the air. Please keep in mind that the more advance notice you can provide, the better able we are to pass the word along through DX club paper bulletins and over the DX Audio Service. Unfortunately, not every DXer has internet access (those of you who do not have computers might consider setting up a Hotmail or Yahoo account and using a computer at your local library – you'll get lots of good DX tips by subscribing to the many alert and discussion lists out there).

**Here's a New Year's challenge:** If each of you reading this contacts one station – well, can you imagine? That would be a season to remember! To help, this column will appear periodically in the paper bulletins of both clubs, and also online where appropriate (feel free to circulate).

You are welcome to e-mail any feedback and suggestions to the committee at [dxtests@bell.net](mailto:dxtests@bell.net) or to log onto [dxtests.info@gmail.com](mailto:dxtests.info@gmail.com) to see what tests have been scheduled.

73s, Saul Chernos for the DX Tests Committee

### WESTERN DX ROUNDUP

Nancy Johnson – 265 Waterton Wy – Billings MT 59102-7755

E-mail: NancyJohnson@prodigy.net

**WDXR DEADLINES:** Each Friday. Please use Eastern Time.

- (BB) **Bill Block**-7716 E. Thelma Drive-Prescott Valley, AZ 86314 [billwblock@msn.com](mailto:billwblock@msn.com)  
Drake R8
- (PM) **Patrick Martin**-P.O. Box 843-Seaside, OR 97138-0843 [mwdxer@webtv.net](mailto:mwdxer@webtv.net)  
Drake R8, NE EWE/Eastern Beverage, Quantum Phaser
- (5P) **Dale Park**-P.O. Box 10640-Honolulu, HI 96816 [dxfool@aol.com](mailto:dxfool@aol.com)  
Sangean ATS-818CS  
(5P-HI1) DX'ing at Wai'ala'e-Kahala Post Office-Honolulu with Honda car radio  
(5P-HI2) DX'ing at Hawaii-Kai Costco, East Honolulu
- \*\*\*\*\*
- 580 KMJ CA, Fresno 1/9 2349 last minute of Fresno State basketball vs. Hawaii; GEICO and Home Depot ads; into postgame show mentioning Bulldog Radio Network; at 2358 ID "This is the 50,000 watt Blowtorch of the Fresno State Bulldogs, Newstalk 5-80 KMJ," then faded out. Good to very poor. (5P-HI)
- 690 CBU BC, Vancouver 1/10 0930 with time for Pacific & Mountain time zones, news and "CBC Radio 1" at 0935. (BB-AZ)
- 1160 WYLL IL, Chicago 1/13 0420 heard station QRM'ing KSL off Eastern Beverage. Hooked up phaser and NE EWE/Eastern Beverage and knocked KSL-1160 who was S9+45 to mixing & under the unID relig. station. At 0425 the relig. program ended, a man gave a promo for "WYLL.com," followed by spots and then "We'll return to more Christian talk after this word." Another promo for WYll.com at 0429 and a spot for Life Insurance, then into the next program. Fair to poor. Wonder if conditions, or did WYLL forget to go directional? Quite decent, if it wasn't for KSL, equal as strong as WBBM and WGN at the time. Second time heard in the last month. Very unusual here in the NW and KSL is a real blowtorch. (PM-OR)
- 1170 KFAQ OK, Tulsa 1/11 2316 noted in passing with Oklahoma State basketball at Oklahoma U. Good to poor. (5P-HI2)
- 1210 KPRZ CA, San Marcos 1/15 0929 with several "K-Praise" and "KPRZ" at 0930. (BB-AZ)
- 1370 ?KZSF? CA, San Jose (tentative) 12/30 0349 SS man talking excitedly over mariachi music. Very poor. (5P-HI1)
- 1440 ?KVON? CA, Napa (tentative) 12/30 0345 ESPN Radio's "All Night with Jason Smith." Most likely KVON per its website. Poor, over/under station with financial talk (also poor). (5P-HI1)
- 1470 ?KUTY? CA, Palmdale (tentative) 12/30 0346 SS Ranchera music with accordion. Poor, unID talk underneath. (5P-HI1)
- 1520 KVTA CA, Port Hueneme 1/12 2000 with "KVTA News Center." (BB-AZ)

**UNID**

1220 UNID 12/30 0350 light piano jazz music underneath KZOO-1210 splatter. Does not fit KDOW-CA's program sked per its website. Very poor. (5P-H1)

Thanks to Bill, Patrick and Dale for their DXR reports this week. Nancy 1/15 2100

**CENTRAL DX ROUNDUP**

**John C Johnson – 265 Waterton Wy – Billings MT 59102-7755**

**E-mail: John\_Johnson@prodigy.net CDXR reports ONLY: cdxr@ircaonline.org**

**RIDING GAIN**

[TN-WI] **Tim Noonan**, Oak Creek, WI **DXing2@aol.com**  
Kenwood R-1000, Radio West Loop

[SP-WI] **Sheryl Paszkiewicz** Manitowoc, WI **spaszdxer@comcast.net**  
Grundig Sat 800 and whip

[JRT-MO] **John Tudenham**, Joplin, MO **jotud@yahoo.com**  
Sangean ATS 505, Radio Shack loop

[RW-CO] **Robert Wien**, Colorado Springs, CO **wienbob@aol.com**  
C-Crane 2 Radio, Select-A-Tenna

**DOWN THE DIAL**

1210 KUBR TX, San Juan. 1-11 fair. 01:01 with religious format, ID (in EE). [JRT-MO]

1230 WCLO WI, Janesville. 1-14. 21:52 with local basketball, "wclo.com" mentioned. Local spots. Not that common here. [SP-WI]

WSOO MI, Sault Ste. Marie. 1-5 fair to good. 19:00 with legal ID, "Sault Saint Marie's Information Station" into ABC News. Also heard on 1-10 at 20:00 coming in fair to poor. Station not needed, but a welcome re-log. [TN-WI]

1260 KSML TX, Diboll. 1-11 fair. 00:58 with ESPN Sports, ID. [JRT-MO]

1290 CFRW MB, Winnipeg. 1-14. 22:00 with rock format, calls. Not common here. [SP-WI]

1300 WNQM TN, Nashville. 1-11. Surprised to hear SS way over WOOD and WRDZ. 23:00 with Radio Vida ID's, Christian music. [SP-WI]

1410 KKLO KS, Leavenworth. 1-15 fair to poor. 08:00 with legal ID during a list of "Here's Help" network affiliates. Later faded up to good. First new one of the year. [TN-WI]

**TEST**

1210 KEVT AZ, Cortaro. 1-15 DX Test – TENTATIVE. 03:30-04:25 Tentative on the DX Test. SS fading up and down underneath a very potent KGYN. Loop NE/SW, no definitive ID's heard, so only tentative. I was expecting to hear a much stronger signal if they were on at 10kW ND Days. This used to be very common in California as KQTL. Had a lot of house buzz interference from energy saving bulbs and regular fluorescent fixtures. Did not hear any Morse code or tone run the entire hour. Just regular programming and apparently on day power. [RW-CO]

**25 YEARS AGO**

January 19, 1985 issue of IRCA's "DX Monitor" ... **John Wilkins** mentioned KUUY Cheyenne, WY finally moved to 870 from 1530 on January 10<sup>th</sup> ... **Mike Brooker** of Toronto, ON had good SSS conditions bringing him 6 new stations ... **Tom Jasinski** of Shorewood, IL received a verie from KJSK-900 for a DX Test ... **Roy H. Millar** of Marysville, WA added 42 new stations in December.

**OPEN MIKE**

Nancy and I were actually in Tucson when the KEVT DX Test was on the air. We were not aware of the test, but we would have given it a try if we had known. I mentioned to Bob that we refuse to have any fluorescent fixtures or the greenie's energy saving bulbs in our house due to the interference produced and the danger of breakage. Read the warning label on those bulbs sometime. This column was typed 1-17-10. 73, John

**EASTERN DX ROUNDUP**

**Lee J Freshwater – 414 SE 3rd St – Ocala FL 34471**

**E-mail: EDXR at AMLOGBOOK dot COM**

Deadlines: Saturdays 8 AM!!

**STARS OF THE WEEK**

(KK-VA) **Kraig Krist** Manassas, VA  
NRD-545 rx w/134' multiband antenna NW to SE.

(JJR-WI) **John J. Rieger** L'Anse, MI  
Sony SW7600GR

(IEN-GA) **Ira Elbert New** Watkinsville, GA  
DRAKE R-8B, 135' N/S L.W., SANGEAN ATS 909

(WM-MD) **William McGuire** 2412 59th Place, Cheverly MD  
DX-398

**LOGGINGS**

690 FL WOKV Jacksonville 1/4 1805. ID heard in the mess. (WM-MD)

750 SK CKJH Melfort 1-9 0805. Poor "CK-750" news, ads. No WSB. Jingle after wx. Oldies. (JJR-MI)

840 VA WKTR Earlsville 01/09 0400. Sports news and information. Good signal with slight fades in the null of WHAS in Louisville, KY. "AM 840, WKTR, Charlottesville." and "ESPN Radio and ESPN Radio.com". (IEN-GA)

850 AL WXJC Birmingham 1/2 1800. Promo for Focus On The Family; "The Truth"; Oldies music heard. (WM-MD)

860 IA KWPC Muscatine 1-10 0752. Poor in CJBC null, then out. Calls, Oldies. (JJR-MI)

1060 MN KFIL Preston 1-11 0853. Poor – "True County-KFIL" sweeper into ads. C&W. (JJR-MI)

1160 PA WCCS Homer City 1/6 1905. ID; "News Talk 1160." (WM-MD)

1200 SC WMIR Atlantic Beach 1/6 1800. Black Gospel music heard. "Rejoice 1200" ID. (WM-MD)

1220 ND KDDR Oakes 1-11 0800. Poor -LID for KDDR/KOVC/KDAK in fade up o/others. (JJR-MI)

1230 MI WTKG Grand Rapids 1-9 1731. Poor w/wx, calls o/u mess. (JJR-MI)

MI WSOO Sault Ste. Marie 1-9 0745. Poor - "12-30 WSOO" jingles between 2 songs o/others. (JJR-MI)

MN KTRF Thief River Falls 1-9 0819. Poor -wx, "Sears in Thief River Falls" in mess. (JJR-MI)

1260 MN KDUZ Hutchinson 1-10 0804. Poor in null of others. (JJR-MI)

1270 MD WCBC Cumberland 1/6 1659. Station Promo; ID. (WM-MD)

1300 OH WJMO Cleveland 1-9 1732. Poor -"1300 WJMO, Cleveland's Inspiration Station" o/usual WOOD. Rare. (JJR-MI)

1340 MN KVBR Brainerd 1-8 2000. Poor. Brainerd vs. Cloquet Lumberjacks (hockey?) w/"AM1340-KVBR" out of ads o/mess then out. (JJR-MI)

1380 IA KCIM Carroll 1-10 0823. Very poor in u/others. Calls after ads. NOS. (JJR-MI)

1440 OH WHKZ Warren 1/14 2355-0035. Mixing w/talk. Religious programming. "...don't miss... every night at seven thirty here on fourteen forty WHKZ". "Word of the Day". "Northern Ohio's Christian talk station AM twelve twenty 'The Word'" (1220 'The Word' = WHKW). Into call in show "Talk of the Night Radio". (KK-VA)

1480 PA WCNS Latrobe 1/13 2355-0035. Mixing w/music. Oldies "We're playing America's best music... WCNS Latrobe" into news. (KK-VA)

1510 SD KMSD Milbank 1-11 0817. Poor in WRRD null. News, ads and finally calls after 11 minutes of waiting. (JJR-MI)

Thanks to all this week, and a BIG THANK YOU to Penny who did the Hard DXM mailing this week while I was out of town. Spent the week in Eugene, OR visiting Broadcast Software Inc. Met with Tom Woods CE at KUGN and Gary Kline DOE for Cumulus. Got a great tour of their facilities. All in all a busy week, but we had a good time. Now we turn around and leave for our vacation. This year it's Eastern Caribbean on Royal Caribbean. After all the cold here in Florida the past couple of weeks, I am looking forward to the beach, and a few good books. fresh 1-16 0910

**DX WORLDWIDE – WEST / TROPICAL BAND DX**

**Patrick Martin – PO Box 843 – Seaside OR 97138**

**E-mail: mwdxer@webtv.net all times UTC**

**TRANS ATLANTIC DX ROUNDUP**

549 ALGERIA, Dec 13 0200 – Time pipes, news by man in Arabic. (NP-AB)

549 RUSSIA synchros Radio Mayak, Dec 13 0259 – Heard 'Moscow Nights' IS, then lost in mix and splatter. Heard the 'Moscow Nights' IS again at 0330. (NP-AB)

558.05 UNID ? ?, Dec 13 0257 – Very weak audio with man talking. (NP-AB)

585 SPAIN Madrid RNE 1, Dec 13 0401 – News in Spanish by a woman, //639 etc. (NP-AB)

675 NORWAY NRK, Dec 12 0443 – Man singing, //web stream and also heard // on 630 under CHED. First time Norway hrd here since 1314 went off. (NP-AB)

675 NETHERLANDS Lopik Radio Maria, Dec 12 2342 – Christian music. Fading in/out with Norway. (NP-AB)

- 684 **SPAIN** RNE, Dec 7 0159 – Filler music, then news at the hour read by man and woman. (NP-AB)
- 702 **IRAN** VOIRI, Dec 13 0259 – Instrumental music, series of three tones, then ID in Russian, anthem. (NP-AB)
- 765 **RUSSIA** Petrozavodsk, Radio Rossii, Dec 13 0302 – Man reading news in Russian. Came up again at 0354 with talk on history of music. (NP-AB)
- 810 **UK**, BBC Radio Scotland, Dec 12 0703 – Sports news by woman, mixing with KGO/CKJS/WGY. (NP-AB)
- 837 **SPAIN** synchros COPE, Dec 7 0158 – Discussion between 2 men in Spanish. (NP-AB)
- 909 **UK** synchros BBC Five Live, Dec 19 2330 – Woman gave web site address, then ID by man as 'This is BBC Radio Five Live'. (NP-AB)
- 927 **UNID**, Dec 11 2201 – Man giving what sounded like news. Belgium seems the most likely. (NP-AB)
- 936 **UNID**, Dec 11 2235 – Man and woman speaking. Not quite good enough for language recognition. (NP-AB)
- 954 **CZECH REP** Czech Radio, Dec 6 2221 – Man interviewing another, then selection of music. (NP-AB)
- 963 **FINLAND** CRI, Dec 11 2149 – Woman speaking in German, then vocal by a man. (NP-AB)
- 999 **SPAIN** COPE, Dec 6 2218 – Man in Spanish over presumed Moldova. (NP-AB)
- 1017 **GERMANY** SWR, Dec 11 2235 – Woman speaking in German. (NP-AB)
- 1035 **PORTUGAL** Radio Clube, Dec 7 0155 – Light pop vocals with very little talk. Few words by man at 0211. Simon & Garfunkel tune at 0224. First time hrd in over 20 years! (NP-AB)
- 1035 **ESTONIA**, Jan 1 0258 – Instrumental hymn, then TWR theme music at 0300. (NP-AB)
- 1044 **UNID** ? ?, Dec 6 2238 – Two men conversing in what sounded like Arabic. (NP-AB)
- 1044 **SPAIN** SER, Dec 6 2358 – Came up to decent level for a minute or so with man speaking in Spanish. (NP-AB)
- 1071 **UNID** ? ?, Jan 1 0201 – Koran recitations, likely Egypt. (NP-AB)
- 1134 **CROATIA** Croatian Radio, Jan 1 2324 – In English with sports, weather, ID as 'Voice of Croatia', then man and woman giving sked of overseas broadcasts. (NP-AB)
- 1251 **LIBYA** Voice of Africa, Dec 8 2358 – Came up for a couple of minutes with man speaking in Arabic. (NP-AB)
- 1323 **GERMANY** Wachenbrunn Voice of Russia, Dec 19 0600 – Transmitter came on about 15 seconds before the hour, then into Voice of Russia in English. (NP-AB)
- 1341 **HUNGARY**, Magyar Katolikus Radio, Dec 6 2222 – Vocal by a man, followed by woman speaking in Hungarian. Very good signal for a couple of minutes at 2308 with woman speaking in Hungarian over light music background. (NP-AB)
- 1394.86 **ALBANIA**, TWR, Dec 11 2025 – Hymn sung by woman. (NP-AB)
- 1395 **NETHERLANDS** Big L, Dec 11 2215 – pop music. Strong off channel Albania had been here earlier, so perhaps they'd signed off. (NP-AB)
- 1413 **SPAIN** synchros RNE 5, Dec 13 2358 – Man in Spanish over musical background. Quite good for a minute or so before ToH fade out. (NP-AB)
- 1431 **DJIBOUTI** Radio Sawa, Dec 21 0027 – Woman speaking in Arabic, //1548. Finally a definite log of this one, for a new country. (NP-AB)
- 1457.79 **ALBANIA**, CRI relay, Dec 6 2230 – Carrier came on, followed by CRI theme music a few seconds later, and into talk by man (Czech listed). Carrier had been on earlier, went off at 2229, then back on much stronger. (NP-AB)
- 1467 **FRANCE** Roumoules TWR, Dec 31 2303 – Christian talk in English with UK accent. (NP-AB)
- 1476 **UNID** ? ?, Jan 1 1457 – Woman speaking, then instrumental music. Few words by man in what seemed Chinese just prior to the hour, then 3+1 time pips at 1500. (NP-AB)
- 1485 **SPAIN**, SER, Dec 6 2355 – Two men conversing in Spanish. (NP-AB)
- 1503 **IRAN**, Dec 15 0000 – Presumed Iran with good carrier, but only faintest of audio with Koran recitation. (NP-AB)
- 1521 **CHINA** Urumqi CRI, Dec 14 2359 – Came on with Chinese music, then CRI theme, ID in Chinese and Russian, then into Russian broadcast. (NP-AB)
- 1530 **VATICAN** Vatican Radio, Dec 31 2259 – Vatican Radio IS clearly audible through dominant KFBK. (NP-AB)
- 1539 **UAE** VOA, Dec 6 2238 – Woman speaking in Urdu, some south Asian music, then VOA news in English at 2300. (NP-AB)
- 1548 **MOLDOVA** Grigoriopol Voice of Russia, Dec 19 2329 – Instrumental music, then closing announcements by woman in Italian. Off at 2330 leaving a weak Radio Sawa on the frequency. (NP-AB)
- 1566 **UNID**, Jan 2 0502 – Bits of audio in unknown language. Sounded very much like preacher programme, thus very likely Benin (Hausa listed). (NP-AB)
- 1593 **KUWAIT** VOA, Jan 1 0110 – bits of news in English by man and woman. (NP-AB)

## TRANS PACIFIC DX ROUNDUP

- 639 **CHINA**, CNR1, Dec 15 1432 – Instrumental song, then talk by two men. // stronger 1134. (NP-AB)
- 702 **IRAN** VOIRI, Dec 15 1430 – Same anthem and recitation as previously heard at 0300. (NP-AB)
- 882 **UNID** ? ?, Dec 12 1449 – Up briefly with woman speaking in unknown language. (NP-AB)
- 972 **TAJIKISTAN** Dushanbe VOA, Dec 15 1429 – Urdu program with mentions of "Voice of America" //1539. New country for me! (NP-AB)
- 1026 **RUSSIA**, Oyash, Dec 19 1500 – Time pips, possible ID by man, then news by woman in Russian. (NP-AB)
- 1089 **RUSSIA**, Tbilisskaya, Dec 15 1430 – Poor during ID, then better with woman reading news in Russian. Never heard this one in the morning before. (NP-AB)
- 1296 **UNID** ? ?, Dec 15 1443 – Weak audio with woman speaking. Likely Afghanistan as hrd last month. (NP-AB)
- 1413 **UNID** ? ?, Dec 12 1539 – Very weak traces of audio with man talking. (NP-AB)
- 1422 **CHINA**, Kashi, CRI, Dec 15 1435 – Woman in Urdu, musical background. Stayed in until 1500 when CRI theme noted. (NP-AB)
- 1521 **CHINA** Urumqi CRI, Dec 12 1059 – Chinese music, then CRI theme and into Russian. (NP-AB)
- 1539 **USA** Al Dhabbaya VOA, Dec 15 1440 – Talk by woman in Urdu, //972. (NP-AB)
- 1566 **UNID** ? ?, Dec 15 1431 – Woman speaking. Sounded like news, but too weak to be sure – possibly India. (NP-AB)
- 1584 **UNID** ? ?, Dec 12 1518 – Barely detectable audio with man speaking. Second carrier (almost equal in strength) on 1584.07, and a third, weaker one on 1583.98. (NP-AB)

## QSLs

- 864 **ARMENIA** RFE/RL, Full data card in 29 days for report and CD to Prague address. (NP-AB)
- 639/954 **CZECH REP** Czech Radio, both freqs, Full data "Czechoslovak Rail Vehicles" card, Radio Prague sked and magnetic bookmark in 24 days for CD report. (NP-AB)
- 693 **GERMANY** Voice of Russia, Oranienburg, Full data "60th Anniversary of the Victory in the Great Patriotic War" card in 25 days for e-mailed report. (NP-AB)
- 963 **FINLAND** CRI Pori relay, Full data "Kirghiz ethnic minority group" card in 38 days for CD report. (NP-AB)
- 990 **CANADA**, CBDB Watson Lake, YT. Frequency only verie letter, along with CBC North and CBC Yukon pins from John Boivin, CBC Yukon Program Manager in 22 days for SASE and CD report. (NP-AB) (Theoretically in could have been one of several LPRTs, but CBDB was recently upgraded to 400 watts, so is almost certainly the one I heard. In any case, the Yukon is finally QSLed!)
- 1017 **JAPAN**, Fukuoka JOLB, Full data QSL card, letter and NHK annual report in 72 days from Yukinoba Satoa (sp?) for mint stamps. (NP-AB)

## THANKS TO THIS REPORTER

NP-AB **Nigel Pimblett**, 331 5th Street, Dunmore, Alberta, T1B 0J9  
Perseus SDR, Wellbrook array

## SPORTCHANNELS IRCA

**Compiled by: Dale Park – PO Box 10640 – Honolulu HI 96816**  
E-mail: dxfool@aol.com

Aloha and Happy New Year, which means a new season of indoor soccer and lacrosse, hi. I don't have radio information on those sports yet (maybe you can help me out), but here's the info I have laying around as of 1/16/10—

## NATIONAL BASKETBALL ASSOCIATION

### Atlanta HAWKS

790	WQXI-GA	1240	WWNS-GA	1470	WRGA-GA
790	WSFN-GA	1450	WKEU-GA	1580	WEAM-GA
1240	WGGA-GA	1450	WMVG-GA	1600	WFIS-SC

NOTE: Team also lists non-existent 1580 WKUL-AL in Cullman.

### Golden State WARRIORS

680	KNBR-CA	970	KESP-CA p	1050	KTCT-CA b	1490	KRKC-CA p
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NOTE: b-Backup for KNBR.

Steve Holman

Tim Royce

**Houston ROCKETS**

Craig Ackerman, Adam Wexler+ST

610	KILT-TX	1310	KEZM-LA	—FM—	
1230	KSIX-TX	1600	KOGT-TX	104.3	KGAS-TX

SYNDICATOR: Skyview Satellite Network

**San Antonio SPURS**

Bill Schoening

1070	KOPY-TX	1200	WOAI-TX	1400	KBYG-TX	1530	KZNX-TX
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**Washington WIZARDS**

Dave Johnson, Glenn Consor

740	WRNR-WV	1050	WBRG-VA	1430	WNAV-MD	—FM—	
910	WRNL-VA	1370	WVIE-MD	1450	WTBO-MD	106.7	WJFK-VA

**NATIONAL HOCKEY LEAGUE****Atlanta THRASHERS**

Dan Kamal

680	WCNN-GA	1300	WIMO-GA	1450	WKEU-GA	—FM—	
790	WSFN-GA	1340	WGAA-GA	1450	WMVG-GA	98.1	WMGP-GA
850	WPTB-GA	1340	WALH-GA	1600	WFIS-SC	101.1	WTGA-GA
1050	WWIC-AL	1410	WPCC-SC			103.9	WDDK-GA
1240	WGGA-GA	1420	WRCG-GA				

NOTES: c-Silent per Wikipedia.

**Boston BRUINS**

Dave Goucher, Bob Beers

620	WZON-ME	1340	WGAW-ME	—FM—	
900	WGAM-NH	1420	WBEC-MA	98.5	WBZ-MA
1250	WGAN-NH	1450	WHLL-MA	107.7	WTPL-NH

**Buffalo SABRES**

Rick Jeanneret-p. Harry Neale

550	WGR-NY	1410	WDOE-NY	—FM—	
950	WROC-NY	1490	WBTA-NY	96.5	WCMF-NY
1340	WKSX-NY			101.5	WMXO-NY

NOTE: Simulcast of TV play-by-play. e-No playoff games per Wikipedia.

**NATIONAL FOOTBALL LEAGUE****Cincinnati BENGALS**

Brad Johansen, Dave Lapham

600	WKYH-KY	1010	WIOI-OH	1490	WMOA-OH	—FM—	
610	WTVN-OH	1150	WIMA-OH	1510	WLGK-OH	96.7	WCSM-OH
630	WLAP-KY	1230	WIRO-OH	1530	WCKY-OH	97.7	WCJO-OH
700	WLW-OH	1240	WHIZ-OH	1540	WBTC-OH	102.7	WEBN-OH
790	WKRD-KY	1360	WMOV-WV	1590	WSRW-OH	104.7	WTUE-OH
900	WVHU-WV	1390	WMPO-OH	1600	WZZW-WV	105.5	WMVR-OH
970	WATH-OH	1420	WTCR-WV			105.5	WCHO-OH
990	WTIG-OH	1490	WBEX-OH				

NOTES: f-Airs games after end of baseball season.

**Dallas COWBOYS**

Brad Sham, Babe Laufenberg, Kristi Scales-s

560	KWTO-MO	1200	WOAI-TX	93.1	KSTV-TX	100.1	KYBI-TX
600	KROD-TX	1240	KVLF-TX	95.5	K238BF-TX	100.7	KPXI-TX
600	KTBB-TX	1300	KVET-TX	95.7	KLKL-LA	101.7	KQTM-NM
670	KWXI-AR	1340	KEBC-OK	95.7	KBST-TX	101.7	KLTD-TX
690	KPET-TX	1360	KKTX-TX	95.7	KARX-TX	101.9	KBUS-TX
760	KTKR-TX	1390	KHOB-NM	95.9	KCKL-TX	102.1	KTRA-NM
860	KPAN-TX	1430	KTBZ-OK	95.9	KFWR-TX	102.5	KBRQ-TX
900	KPYN-TX	1450	KCTI-TX	96.1	KCTX-TX	102.7	KHXS-TX
910	KBIM-NM	1450	KNET-TX	96.9	KXYL-TX	103.9	KMHT-TX
920	KARN-AR	1550	KCOM-TX	97.1	KVRP-TX	104.3	KGAS-TX
950	KJTV-TX		—FM—	97.5	KGKL-TX	104.7	KYYI-TX
960	WSVU-FL	88.1	KHOY-TX	97.7	KALK-TX	104.9	KRIG-OK
960	KGKL-TX	89.5	KYQX-TX	98.3	KPTX-TX	105.3	KRLD-TX
990	KWAM-TN	92.3	KNFM-TX	98.9	K255BH-AR	105.5	KQXX-TX
1090	KVOP-TX	92.7	KTRX-OK	99.5	KNFX-TX		

SYNDICATOR: CBS Radio. g-Ex-1400 kHz. i-Ex- 94.9 mHz.

**Indianapolis COLTS**

Bob Lamey, Will Wolford, Kevin Lee-s

740	WVFN-IL	1070	WFNI-IN	1190	WOWO-IN	1230	WTCJ-IN
860	WMRI-IN	1090	WCRA-IL	1230	WSAL-IN	1320	WBRT-KY

1340	WBIW-IN	1570	WNDA-IN	95.9	WEFM-IN	103.9	WIMC-IN
1340	WXFN-IN	1600	WTSZ-KY	96.7	WMQX-IN	104.7	W284BI-IL
1370	WGCL-IN		—FM—	96.7	WORX-IN	105.5	WWVR-IN
1420	WVJS-KY	92.1	WROI-IN	97.1	WLHK-IN	105.9	WJOT-IN
1440	WPGW-IN	92.1	WZDM-IN	97.7	WZOW-IN	106.5	WWBL-IN
1460	WJCP-IN	93.5	WMXQ-IN	98.1	WIBN-IN	106.7	WYFX-IN
1480	WRSW-IN	94.3	WREB-IN	98.7	WASK-IN	107.3	WRZO-IN
1490	WDAN-IL	94.3	WIFE-IN	100.9	WPGW-IN	107.7	WMRS-IN
1490	WKBV-IN	94.5	WRZR-IN	102.3	WSMM-IN		
1510	WJOT-IN	94.9	WYNG-IL	103.1	WGBF-KY		
		95.3	WNDI-IN	103.3	WAXL-IN		

**FÚTBOL AMERICANO EN ESPAÑOL****VAQUEROS de Dallas**

Victor Villalba, Andres Arce, Luis Perez

750	KAMA-TX	1310	KZIP-TX	—FM—	103.9	KRIA-TX	
1240	KXYL-TX	1450	KIKR-TX	92.1	KSYR-LA	104.7	KTXC-TX
1250	KZDC-TX	1510	KBED-TX	94.7	KGRW-TX	106.1	KPZE-NM
1260	KWNX-TX	1530	KGBT-TX	97.7	XERC-DF	107.5	KMVK-TX
1270	KFLC-TX			103.1	KVJM-TX		

**OVERTIME:** SportChannels remembers these sportscasters who have passed on: Bob Blackburn, the original voice of the Seattle SUPERSONICS from 1967-1992, died Jan. 8. He previously broadcasted Oregon SU and PCL Portland BEAVERS games... Anaheim ANGELS announcer Rory Markas died suddenly Jan. 4. He also did play-by-play for USC men's basketball... George Michael, who hosted TV's "The Sports Machine," died Christmas Eve. Michael also called New York ISLANDERS games and subbed on ABC Radio's "Howard Cosell Speaking of Sports"... Denver NUGGETS and Colorado SU broadcaster Jerry Schemmel has been named to the Colorado ROCKIES broadcast team. This means Jason Kosmicki takes over as the fulltime NUGGETS announcer Jan. 27....

**ABBREVIATIONS USED:** a-away games only, b-backup or conflict station, d-daytimer or day games only, h-home games only, n-night games only, p-partial schedule, r-relays another station, s-sideline reporter, ST-studio host, "f"-personnel alternate. In network listings, flagship stations are in **boldface**. College campus stations are in lowercase. Data sources and station cities are available upon request from [dxfool@aol.com](mailto:dxfool@aol.com), as well as updates and corrections to previous columns. I hope to present college basketball info next time. Until then, Sbohem!

**GEOMAGNETIC INDICES***Compiled by: Phil Bytheway*E-mail: [phil\\_tekno@yahoo.com](mailto:phil_tekno@yahoo.com)**Geomagnetic Summary December 1 2009 through December 31 2009**

Tabulated from email status daily.

Date	Flux	A	K	Space Wx
12/ 1	72	0	0	no storms
2	71	0	0	no storms
3	72	0	0	no storms
4	72	0	0	no storms
5	72	4	1	no storms
6	72	2	0	no storms
7	71	1	0	no storms
8	72	0	0	no storms
9	73	0	0	no storms
10	74	0	0	no storms
11	72	0	0	no storms
12	75	2	1	no storms
13	76	2	0	no storms
14	79	6	0	no storms
15	82	1	1	no storms
12/16	83	3	0	no storms
12/17	87	2	1	no storms
18	84	2	0	no storms
19	82	1	0	no storms
20	84	2	0	no storms
21	83	1	1	no storms
22	82	2	1	no storms
23	78	3	1	no storms
24	77	0	0	no storms
25	76	3	2	no storms
26	76	3	0	no storms
27	77	2	0	no storms
28	76	0	0	no storms
29	75	0	0	no storms
30	77	0	1	no storms
12/31	80	1	0	no storms

## IRCA TECHNICAL COLUMN

Nick Hall-Patch – 1538 Amphion St – Victoria BC Canada V8R 4Z6

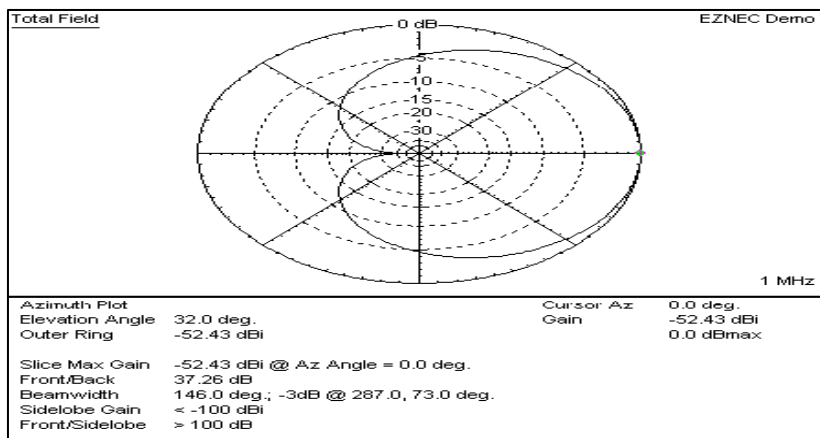
E-mail: [nhp@ieee.org](mailto:nhp@ieee.org)

### Small Terminated Indoor Loop Antennas: Building, Feeding and Terminating Them

Kevin Schanilec

#### Introduction

Terminated loop antennas, such as the EWE, Delta, Flag, Pennant, KAZ and Super Loop, are gaining popularity as simple yet effective antennas. While they have different geometries, they all share the common feature of being terminated with a resistor; this allows the creation of a null towards that portion of the antenna (see example pattern diagram at right), and the other end of the antenna is fed with an appropriate matching transformer.



Many DXers like me do not have the space to erect full-size outdoor versions of these antennas. I recently began using an unusually small indoor Super Loop in my shack, and its low noise and excellent nulling properties have made a huge difference in what I am able to hear. Compared to a ferrite antenna or an active whip, the other choices I have available to me living in a townhouse, the noise is substantially lower, which is vitally important for me since there are numerous sources of RF noise in my townhouse development. This article discusses some of the insights learned from building, feeding, terminating and operating small Super Loop antennas. (the original full size Super Loop design is at: <http://www.bamlog.com/superloop.htm>). My results can likely be applied to the other types of terminated antennas as well.

As for building the antenna, I started out with a small Slinky version of this antenna, which worked quite well in terms of signal strength and nulling. I also tried a straight-wire and spiral-wire version and compared the results. For the reasons discussed below, have gone to using exclusively straight wire, whether strung on a frame or anchored to the wall. Finally, I compared the small Super Loop to other commercially-available antennas, and found that it is in fact an excellent antenna.

Regarding how to feed the antenna and get the signal to your receiver, Wellbrook has recently come out with the FLG-100, which is designed to be the feed point for these types of antennas. Besides having the appropriate input matching transformer, it also has a built-in preamplifier, which is a virtual necessity for smaller antennas since their native output is quite low. I therefore compared it to my home-brew matching transformer system, and the results are presented below.

Finally, all of these antennas need a termination resistance, the value of which might vary significantly from station to station. I discuss below variable termination of these small loops, either by a carbon-based variable resistor or by a remote termination design that allows pin-point selection of the

termination resistance from the comfort of your chair, in order to maximize the nulling abilities of these antennas.

#### 1. Slinky vs. Straight Wire Comparison

Living in a townhouse community, I do not have the ability to erect large terminated loop antennas, which are typically constructed with a minimum dimension of 20-30 feet. My initial antenna was a 5x5 foot Slinky Super Loop (picture above), inspired by the Flag antenna created by David Hamilton, discussed at his Web site: [http://www.ayrshirehistory.eu/tadx/david\\_hamilton\\_05.html](http://www.ayrshirehistory.eu/tadx/david_hamilton_05.html).

As opposed to suspending it from the ceiling as David did, I constructed a PVC frame to support it, which allowed me to point the antenna in different directions. PVC absorbs very little RF radiation, and is a good choice for antenna construction. I used a 47:11 turn transformer on a 1-inch Type J toroid, and a 5K variable potentiometer as the termination resistance. Per the picture below, it fit nicely in my listening space, and I was able to point it in any direction I chose.



One thing I immediately noticed is that the required termination resistance was at least twice higher than the approximately 1000 ohms associated with outdoor antennas, and with a wide variation depending on the station to be nulled. I confirmed that by placing the antenna outside, at least 15-20 feet away from buildings, returned the terminating resistance for the antenna to approximately 800-1000 ohms.

The 5x5 foot version performed well, with good nulls and very low noise levels. Seeking more gain, my next project was a 9x10 foot version, which completely took up the side wall of the room (see picture at right). The extra size yielded about 10 dB more gain than that of the 5x5 foot model.

However, despite this gain advantage, the 9x10 foot PVC frame was simply too unwieldy, so I decided to compare it to the same size loop made of 18 gauge wire in order to see if the extra conductor length in the Slinky version was worth the effort. Both antennas were in essentially the same position in the room and pointed due north, and when listening to one antenna, the other was open-circuited to preclude radiated effects. A southern null on a nearby frequency was tweaked prior to every test frequency. Weak but stable daytime signals were used as the targets.

To my surprise, the straight-wire loop won! For pure signal strength, the Slinky version never trailed and was often 2-3 dB stronger on various frequencies. This is not surprising, since the two Slinky units used comprise about 110 feet of conductor, while the wire version only has 38 feet; theory says that it should be a few dB better. However, the overall signal was always at least as good on the straight wire version, and often noticeably better, especially on marginal signals.

Time and time again, my ears told me that the difference was that the straight wire version was simply a lot quieter, resulting in a better signal. For example, there was a weak station on 1270 kHz that was struggling to stay above the neighborhood ambient noise on the Slinky, but had readable audio on the wire. Unless a station was already doing fairly well, the wire simply gave the better signal. I also confirmed this by using weak trans-Atlantic signals at night. I live near Seattle, Washington, so any signals which manage to make it over the pole to my location are usually quite weak. Using identical matching transformers so I wouldn't have to swap them out, I found that the heterodynes and audio signals on the wire were almost always better than on the Slinky, again attesting to the fact that the signal-noise ratio on the wire is better. (Note: I repeated this test again later with the Wellbrook FLG-100, and the results were the same – the wire was still better).



What's going on here? One possibility is discussed on this Web site: [http://www.w8ji.com/slinky\\_and\\_loaded\\_beverages.htm](http://www.w8ji.com/slinky_and_loaded_beverages.htm).

A Slinky, unless stretched VERY long, will have approximately 4 to 6 times more conductor length than actual physical length. This is apparently too many "turns per foot", resulting in the antenna firing backwards towards the feed point of the loop. The optimum total conductor length is no more than twice the physical length of the antenna. For standard Slinkys with a diameter of 2.75 inches, this means that the coils have to be spaced almost 4.5 inches apart, which (pardon the pun) is really stretching it! To test this out, I took the Slinkys off of the PVC frame and stretched them out. However, I was unable to get the coils more than 3.5 inches apart without permanently deforming the Slinky. Therefore, it appears that Slinkys are not suitable for these types of antennas since they cannot be stretched far enough without ruining them.

To simulate a well-stretched Slinky, I wrapped the 5x5 foot PVC frame with a gradual spiral of wire that put 10 feet of wire on each 5-foot section, meeting the 2:1 conductor-to-antenna length ratio (see picture at right). I then constructed a 5x5 foot straight-wire loop, and attached both antennas to the same matching transformer and terminating potentiometer. The results were that, up and down the dial, there was no discernible difference in signal strength or nulling between the helical and straight-wire versions, even though the helical antenna had twice the amount of wire. Therefore, I have set all my Slinkys aside and only use straight wire for my loop antennas.



My current 9x10 foot loop is the largest that my listening room will accommodate, and is simply 18-gauge speaker wire suspended between four eye hooks. There is an inch or so between the wire and the floor, ceiling and walls, and four inches from the parallel wall (at left, with a Wellbrook FLG-100). I plan to replace the eye hooks with non-conducting supports at some point, but this works very well. It nulls at approximately 2000-2500 ohms, depending on the target. It only takes about 30 seconds to swap out the feed and termination boxes in order to reverse the null direction 180 degrees.

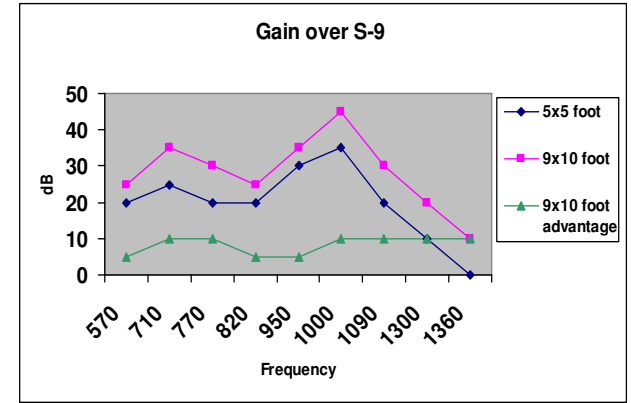
## 2. Performance versus Size

To determine what effect antenna size would have on gain, null depth and required terminating resistance, I compared my straight-wire loops of 9x10 feet and 5x5 feet. Both were in the same position in the room and hooked up to the same matching transformer and terminating resistor. Using steady local stations which were directly in the end-fire null, I measured gain on each antenna first with minimal termination resistance (for maximum signal) and then the nulled signal level using the optimum nulling resistance. Signal strength was as read on my Icom R75 receiver.

Modeling these two antennas on EZNEC predicts that the 9x10 loop will have

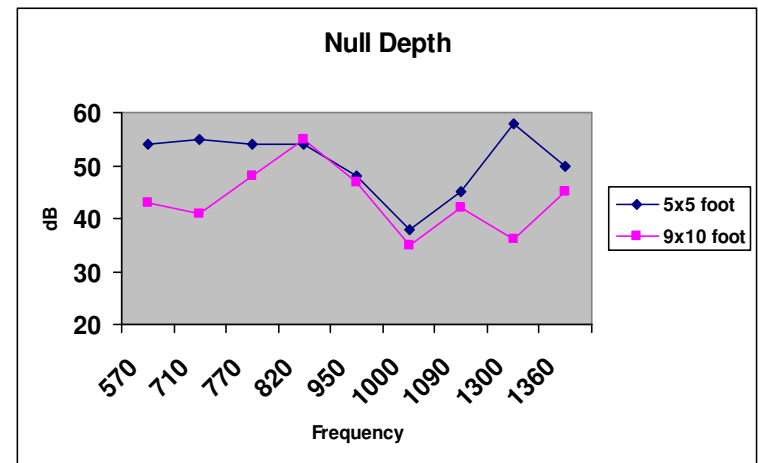
- 11 dB more gain,
- 7 dB better nulls, and
- a slightly higher terminating resistance (866 ohms, versus 810 ohms for the 5x5 foot loop).

As shown at right, the gain difference between the two antennas (generally 10dB, green line) was quite close to the 11 dB predicted by EZNEC. Since the LCD display of my Icom R75 is only accurate to 3 dB or so, it could very well be that there was a 10-11 dB difference across the board. At any rate, it was clear that the 9x10 foot loop had a significant advantage.

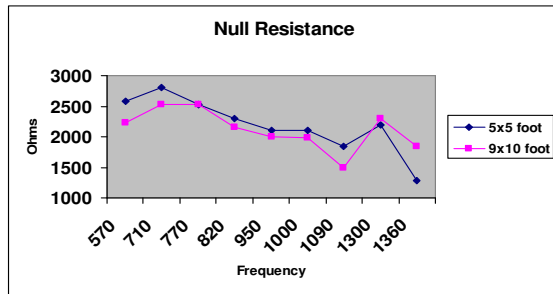


However, the nulls on the smaller loop were always equal to those of the larger loop and usually better. The dip in null depth on both antennas around 1000 kHz has more to do with these local stations being difficult to null, rather than the loops performing poorly in that part of the band. The 50-60 dB nulls (and they are even better at times) are well in excess of the EZNEC predictions.

EZNEC does not anticipate the broadside nulls either, so the nulling aspects of these antennas appear to be an area where EZNEC is not able to accurately model them. I would also note that EZNEC predicts that the optimum length:height ratio is about 2.1 to 2.5 for the best nulls; the two loops used here are essentially squares, but the nulls are still quite good.



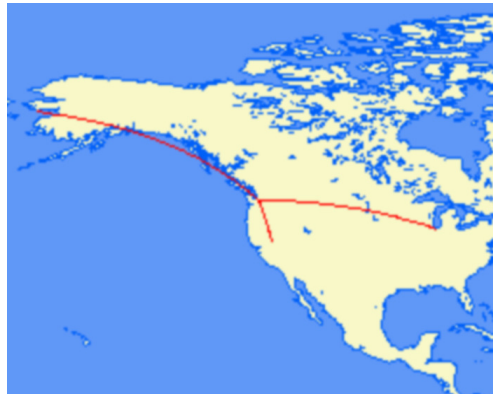
Finally, the larger loop needed less termination resistance for nulling (right). This appears to indicate that the larger loop is not as affected by the proximity of the house's structures and furnishings. Note that on both antennas the null resistance decreased with increasing frequency, which does not occur with the outdoor loops.



Based on this data, there is a definite trade-off between gain and nulling depth. For domestic DXing, a small loop with its better nulls and easy repositioning might be preferable, while trans-oceanic DXers will make their loop as big as possible to maximize gain.

As with larger Super Loops, nulls of stations which are not necessarily in the end-fire of the antenna are also achievable. I have found that decent nulls can be had with stations that are almost perpendicular to the loop, depending on the station. Such nulls require substantially less termination resistance as compared to stations in the loop's end-fire, which makes the ability to vary the termination resistance a valuable tool (see below). Taking it to the extreme, and zeroing out the termination resistance, turns the loop's pattern into a Figure-8, with nulls perpendicular to the plane of the wire. This also also maximizes the gain; the termination resistance, while giving a great null pattern, also appears to decrease the forward gain by about 5-10 dB. Therefore, for weak stations which do not need a pest nulled out, I often minimize the termination resistance in order to maximize the gain.

How well do the figures above translate to actual DXing results? As discussed further below, the signal strength from even the little 5x5 foot antenna is sufficient for domestic DXing, and typically provides a better signal compared to other antennas at my disposal because of how quiet the loop antenna is. As for nulls, unless a station is a strong local, I can almost always null it into the weeds if it is within 20 degrees of the end fire. For example, the bigger stations in California, a few hundred miles to the south of me (KNBR-680, KGO-810, etc.) can be almost completely nulled, something that a ferrite loopstick is not able to accomplish at my QTH, allowing 680-CHFA (Edmonton) and 810-WGY (Albany, NY) to finally be logged.



Another example is 780-KKOH in Reno, Nevada, a 50,000 watt blowtorch to the southeast of my location near Seattle (see short red line on map at right). I can often get a decent null on it with a ferrite loopstick to hear other stations, but it usually remains at least as strong as whatever else might be received. With the little Super Loop, I can typically null KKOH to almost complete silence, allowing WBBM-Chicago, more than 1700 miles to the east, to be unobstructed and at armchair listening level. Also, I finally snagged KNOM out of Nome, Alaska, which is generally on the opposite bearing of KKOH, and therefore was also largely nulled if using a ferrite loopstick; with the Super Loop, it battles WBBM! Finally, because of the exceptionally low noise, I am able to pick up trans-oceanic signals substantially better as compared to the other active and passive antennas I have been using – there simply isn't any comparison! I have gone from being able to discern only the strongest signals to being able to pick weak signals out of the weeds, signals that would have been lost in the noise before.

### 3. Comparison to Other Types of Antennas

I have found that the 5x5 foot loop has about the same gain as the popular Quantum Loop, a ferrite-based desktop loop, while the 9x10 foot loop has noticeably stronger signals. As a small active antenna, the Quantum Loop has higher noise levels, which makes trans-oceanic DXing very difficult

with it in my urban location; rural DXers may not have this problem. As for nulls, either the Super Loop or the Quantum Loop might have a better null, depending on the station, although the Super Loop is better overall by a noticeable margin. As discussed above, there are many local and semi-local stations that I simply can't null with anything but the Super Loops. This, in combination with the fact that the Super Loops don't need constant retuning, as does the Quantum Loop, makes them my preferred antenna. However, I can (and do) feed both into a Quantum Phaser, which allows me to null stations even better.

Another point of comparison I have is a roof-mounted LF Engineering H-900 active whip antenna. This is an omni-directional antenna, so the nulling competition is immediately won by the Super Loops. As for sensitivity, the active whip does very well in comparison, although the RF noise that active antennas inherently pick up make the whip not very useful in many instances, unless it is phased with the Super Loops. The one area where the whip antenna shines is on longwave, since the small Super Loops simply don't have a big enough aperture to be sensitive at these lower frequencies. However, at the lower end of the MW band (530 kHz), even the 5x5 foot loop does very well indeed.

### 4. Notes on Loop Construction and Use

The advantages of an indoor loop are that you can quickly reposition it to steer the null around. Also, those of us with restrictive homeowners association restrictions don't have to worry about hiding the antenna or taking it down every morning. This type of antenna is very quiet compared to other types of antennas, making indoor installation feasible. However, if you have a metal roof and/or siding, this type of antenna may not work.

For construction, I have used two different approaches: a PVC frame and simply putting eye hooks on the wall. As for PVC frames, I use Schedule 40 3/4" PVC, which holds its shape well up to about 5-6 feet. Per the pictures below, you can either string the wire outside of the frame or run the wire inside the piping. In carefully comparing the two, I have found that there is no difference in signal strength or null quality, so whether you run the wire inside or outside the PVC is up to your personal needs and tastes.



As discussed above, using it indoors will likely raise the required terminating resistance dramatically from the 800-950 ohms normally required, and it changes depending on where I am in the house. Also, I have found that the antenna performs differently in various parts of the house, ranging from very good (in my DX shack, fortunately) to not being able to null anything at all (in my living room). The performance of a 6x16 foot loop up in the attic of my wood-framed house is very good as well. So, if you use the antenna indoors, try it in different parts of the house, move some furniture around, and find the best place for the antenna to be, since the house's construction and everything you have inside of it will have an effect. As discussed above, the larger the loop, the less the surrounding structures (walls, floors, furniture) appear to have, so experiment with loop size as well. Placing the loop against external walls seems to be generally the best. My DX shack, the best location for me, is a dormer window-type room on the top floor, with minimal roof and internal wall proximity - the farther away from everything, the better!

Of course, it is generally recognized that antennas almost always perform better outdoors. If strung on a PVC frame or suspended between fishing poles, it can be put up and down every night if need be. I have found that the loop needs to be at least 15-20 feet from structures in order to maintain good nulling characteristics. This required separation distances applies to cars as well; during a recent trip to a local park, placing it only about 10 feet from my car almost completely destroyed the nulling ability of the loop! In my townhouse development's open area, about 30 feet from any adjoining structure, the required termination resistance was in a much tighter band (generally 800-950 ohms), which corresponds fairly closely to the 810 ohms that EZNEC predicts. The nulls were also fairly sharp, in that if I was 50-75 ohms away from the optimum resistance value, the null was noticeably worse; therefore, the ability to precisely vary the terminating resistance remains important when outdoors. Of note is that two stations that are only 3 miles away had by far the highest termination resistance required (1000 and 1100 ohms), while everything else (10+ miles away) was 800-950 ohms. Therefore, the termination resistance should still have a fairly wide range, depending on where you live and what stations are nearby.

### 5. The Wellbrook FLG-100

On recommendations from a couple of friends, I purchased the Wellbrook FLG-100 (right), which just happened to be introduced at about the same time I became interested in the Super Loop antenna design. It currently costs 139 British pounds plus shipping, which is around \$250 USD delivered. Andy Ikin, the person behind Wellbrook, is very responsive and knowledgeable, and his gear is built to last. More information on the Wellbrook FLG-100 is available here:



[http://www.wellbrook.uk.com/antennashop/index.php?route=product/product&keyword=flg&product\\_id=50](http://www.wellbrook.uk.com/antennashop/index.php?route=product/product&keyword=flg&product_id=50)

As mentioned earlier, these types of antennas not only need a matching transformer, but smaller designs, such as the ones I use, also need a lot of pre-amplification. The FLG-100 was designed to meet both of these needs. With its 16:1 matching transformer, it is suitable for use with Flag, Pennant, KAZ and other antennas. While my indoor Super Loops run at much higher impedances, the FLG-100 seems to work just fine, although if desired you could add another 2:1 (impedance ratio) transformer to match it to the 2000 ohms typically needed for indoor loops.

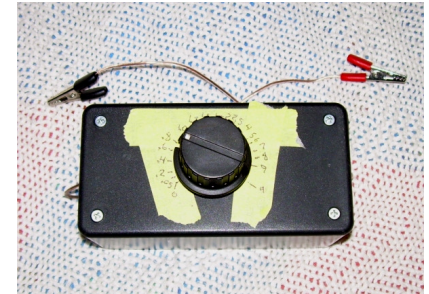
Installation is easy: just connect the two feed-point wires of the antenna to the FLG-100 "Active Antenna" head unit, supply a BNC cable to connect the head unit to the "Antenna Interface" control box, and then connect the integral PL-259 cable off of the control box to your receiver. The system is powered by a 12VDC (tip-negative) wall adapter, which comes with the unit. The unit requires 12 VDC, not 13.8 VDC as many power supplies deliver.

I was anxious to see how it compared with my home-brew unit, which was carefully constructed by a friend of mine using quality materials. I conducted daytime and nighttime testing using an Icom R75 receiver and its two built-in pre-amplifiers, which added sufficient gain to the home-brew unit in order to compensate for the gain that the FLG-100 provided. I connected each unit to the same 9x10 foot Super Loop straight wire antenna, and used the same potentiometer to adjust the terminating resistance for nulls. In a nutshell, the FLG-100 was consistently ahead of the home-brew unit in terms of overall signal readability, even with the R75's pre-amplifiers kicked in to compensate for the home-brew unit's lack of gain. The difference on weak signals was very noticeable at times. The same friend who recommended the FLG-100 to me has had the same experience, in that weak trans-Atlantic signal are received better on the FLG-100 than his home-brew system. As for nulling, the FLG-100 was somewhat better at times, although there were several targets for which the nulls were essentially identical. So, while the difference between the FLG-100 and my home-brew transformer is not night-and-day, it is definitely noticeable. I would heartily recommend the FLG-100, which, though not necessarily cheap, is an excellent value.

### 6. Varying the Termination Resistance

As is likely clear from the discussions above, the ability to precisely vary the termination resistance of terminated loop antennas, indoors or outdoors, can be critical. There are two basic approaches: using a standard potentiometer or using a Vactrol-based unit.

The advantage of the standard potentiometer is that it is a cheap, readily-available solution that requires no electrical power. A linear potentiometer is easily fine-tuned to whatever resistance is required. The downside is that one has to get up and adjust the resistance as needed, which can be quite frequent, and therefore inconvenient unless it is near your chair. As can be seen in the picture at right, the one I use for testing purposes is a 10 Kohm potentiometer mounted in a standard project enclosure, with measured resistance values marked on masking tape. I use alligator clips in order to be able to quickly connect and disconnect it.



The other approach is to use a Vactrol in order to be able to remotely vary the resistance. While it requires a somewhat larger investment of time and resources, and requires a DC power source for operation, the ability to stay in your chair while varying the termination resistance of a null is definitely worth it! I have been experimenting with various designs, and the "Remote Termination of Antennas" article (found at [http://www.dxer.ca/file-area/cat\\_view/87-ultra-light-radio-files-area/97-ubr-antennas](http://www.dxer.ca/file-area/cat_view/87-ultra-light-radio-files-area/97-ubr-antennas)) describes a simple yet effective circuit design to precisely vary the termination resistance. Another Vactrol-based design by Mark Connelly may be found at: [http://www.qsl.net/wa1ion/bev\\_remote\\_term.htm](http://www.qsl.net/wa1ion/bev_remote_term.htm). This utilizes a single feed line for both signal and Vactrol control voltage.

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