

October 11, 2008 - Volume 46, Number 5 - Edition 1447 - ISSN 899-9733

This issue, IRCA welcomes Andrew Yakubik from Wilburton, PA. On to the DX!

DXM on DVD

NOW AVAILABLE from the IRCA Reprint Service. IRCA DX Monitors Volume 1 thru 45 on 2 DVD's. Cost is just \$15.00 for the complete set. Re-live the days gone by and re-introduce yourself to the former members who helped make the IRCA great! Please make checks payable to **Lee Freshwater** and send to the IRCA Reprint Service, 414 SE 3rd Street, Ocala, FL 34471... PLEASE NOTE: You will NEED a DVD reader to open the Adobe files. These files were TOO LARGE to use regular CD's.

IRCA Convention 2009

It is time once again for those interested to submit your bid to host next year's annual convention. It may seem a bit early, but we're approaching the DX season quickly and we need to get the ball rolling. Please draw up your bids and submit them to me by **October 15th 2008**, less than a month away. (Article VIII, Sec.3 of the Bylaws) Thank you and good luck. Doug Pifer - 7148 Marley Ln S, Salem, OR 97306 or email me at: dxfcr@desert4wd.com.

In This Issue:

- Canadian Radio News... 2
- Western DX Roundup... 2
- Central DX Roundup... 3
- Eastern DX Roundup... 3
- DX World-Wide West... 4
- IRCA Technical Column... 5
- Ultralight Contest Info... 13

IRCA TIS/HAR List Editor Needed

Due to medical reasons, **Mike Hardester** has resigned as **IRCA TIS/HAR** list editor. Anyone interested in taking over this position and editing the log for this fall's DX season, please contact Phil Bytheway at the IRCA Bookstore (phil_tekno@yahoo.com).

"TOWER SITE 2009 CALENDAR" ROLLS OFF PRESSES

Eighth Big Year For One Of America's Most Unusual Calendars

CONTACT: Scott Fybush, 585-442-5411 (scott@fybush.com)

ROCHESTER, NY - One of the world's most unusual wall calendars returns for an eighth year, with the launch of the "Tower Site 2009 Calendar."

The calendar, which features a monthly photo of a well-known broadcast transmitter site, is photographed and written by Scott Fybush, the creator of "Tower Site of the Week" (www.fybush.com/featuresite.html) and "NorthEast Radio Watch" (www.fybush.com/nerw.html).

The full-color monthly calendar has become a tradition for many radio engineers and a curiosity for those who think all radio towers look alike.

"The 2008 calendar sold like gangbusters," says Fybush. "Radio engineers often beg me to put their towers in the calendar, and I'm hoping to make some of them very happy with the 2009 edition."

Once again, each month of the 2009 calendar features an 8"x11" color photograph of a broadcast transmitter site taken by Fybush during his travels around the US, Canada and beyond. The sites pictured on the 2009 calendar include many dramatic water photos:

- CKWS, Kingston, Ontario, by the Saint Lawrence River
- WNYM, Hackensack/New York, on the banks of the Hackensack River
- KNBR, at the edge of San Francisco Bay
- Chicago's ESPN Radio 1000, WMVP, with the original Art Deco building from its days as WCFL
- KXEL, Iowa's 50,000-watt voice of the Midwest
- WGY, Schenectady's 623-foot Blaw-Knox tower
- The Blaw-Knox towers of KEX and KGW in Portland, Oregon
- WQEW, New York's flagship for Radio Disney, in Queens
- The Crown Point tower farm in Omaha, Nebraska
- WDKZ, Bloomfield, Connecticut, one of the Northeast's newer directional arrays
- KSL's 50,000-watt site on the south shore of the Great Salt Lake
- WRCE, a small station in the scenic Finger Lakes region of New York

- The "Telefarm" in Shoreview, northeast of Minneapolis

In addition to tower photos, the calendar's monthly pages include significant dates in radio and television history, as well as civil and religious holidays.

The 2009 calendars cost \$18 each, postpaid (\$19.44 including sales tax for New York State residents), and can be purchased by check (payable to "Scott Fybush") or money order to 92 Bonnie Brae Avenue, Rochester NY 14618. Orders can also be placed with major credit cards at www.fybush.com.

"I really enjoy traveling around the country, meeting engineers and visiting their stations," says Fybush, who also edits The Radio Journal and the radio directory site 100000watts.com and anchors newscasts for NPR member station WXXI in Rochester, NY.

CANADIAN RADIO NEWS

Dan Sys- dsysca@yahoo.ca

For September 2008 (October 1 2008 - next update November 1 2008)

1270 QC Alma CFGT Move to 97.7 with 50,000 watts (denied due to common ownership policy as Groupe Radio Antenne 6... aka Radio Nord already owns two FM stations in the market)

DENIAL

I attempt to be as accurate as possible with this information. I visit many websites and message boards on a daily basis seeking the latest in Canadian radio news to report in this column. I trust this information to be worthy; however I can't be in all these places to confirm everything. If inaccurate information is reported I do apologize, but don't blame me... I'm only the messenger.

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.

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- (AB) **Art Blair**-730 SW 3rd St.-Fruitland, ID 83619
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- (NP) **Nigel Pimblett**-PO Box 168-Dunmore, AB T0J 1A0 njp@shockware.com
- (NP-UT) DX'ing at Springdale, UT with Elton E-100 portable
- (NP-AZ) DX'ing at Flagstaff, AZ with Elton-100 portable
- (RW) **Robert Wien**-Las Cruces, NM rjmail@webtv.net
- GE Superadio

OF SPECIAL INTEREST

1130 KPHI HI, Honolulu 10/2 0017 new facility noted on the air (which changed call sign from KRUD 9/25 per FCC) while in the car, booming in with Filipino pop music in English. However, when I got home signal was so weak I needed the loop to boost it (by comparison, KAOK-1110 on Maui was just fine without the loop). Noted at 0257 with JJ ad, woman talking over song "C'est la Vie" by Robbie Nevil, into AC J-Pop without an ID. Heard partial ID 10/3 0030 "AM 11-?? and FM 1-Oh-1-Point-5," confirming that the programming of KORL had moved to 1130, leaving 1180 silent. FCC had approved switching of powers between 1130 and 1180, with 1130 rising to 1kw and 1180 falling to 330/140 watts (necessitating 1180 to get a relay via an FM translator). (5P-HI)

- 550 KTZN AK, Anchorage 9/27 with KOAC mostly phased, sports talk "KTZN The Zone" heard at 0510. (PM-OR)
- KUZZ CA, Bakersfield 9/11 0032 ID by a woman "Bakersfield's best country is KUZZ."
- 600 KOGO CA, San Diego 9/14 0110. ID as "AM 600 KOGO" in a mix with local KVNA. (NP-AZ)
- 620 KTAR AZ, Phoenix 9/11 0029 ESPN programming, ID as "Sports 620 KTAR." QRM from a Spanish language station playing music. (NP-UT)

(KK-VA) **Kraig Krist** Manassas, VA
 NRD-545 rx with homemade 134 foot multiband antenna, NW to NE

LOGGINGS
 800 ON CKLW Windsor. 10/3 0155-0305. 'Coast to Coast AM' discussing sunspots mixing with singing. 0159 "Take us home. Take us to work. Take us where ever you go. This is AM eight hundred CKLW. A Chung radio station. It's 2 o'clock. From the National Newroom of the Canadian Press. I'm Phil GoDan". 0208 back to "Coast to Coast AM"
 810 NY WGY Schenectady. 10/2 0155-0305. "Coast to Coast AM" talking about financial bailout 0200 "... depend on eight ten WGY ... WGY dot com" into "Fox News Radio". 0205 "Eight ten WGY ... forecast" into weather. 0211 "Now more of 'Coast to Coast AM' on eight ten WGY."
 820 MD WWFD Frederick. 10/1 0155-0305. Talk mixing w/R. Reloj time pips. 0200 "... WWFD..." famous getaways. 0232 "... WWFD Frederick..."
 830 MN WCCO Minneapolis. 9/30 0155-0305. WCCO mixing w/WTRU and SS talk. 0257 "... WCCO radio is once again the proud sponsor of the ... Minnesota..." (KK-VA) Kernersville. 9/30 0155-0305. WTRU mixing w/talk (probably WCCO) and SS talk. Talk about God's compassion. "Christians for Israel". 0159 "... can be heard every weekday morning at 9 here on eight thirty WTRU Kernersville..." into "SRN News".
 840 KY WHAS Louisville. 9/29 0155-0305. Mixing w/SS singing. 0258 "Hear.... weekday mornings at eight thirty and eleven forty and weekday afternoons at six... on news radio eight four WHAS". 0200 news 0204 "Broadcasting from the Neutral Zone Studios." Jingle "WHAS" into "Bloomberg Market Minute". "Eighty four WHAS" into ad, Back to "Coast to Coast AM".
 850 NC WRBZ Raleigh. 9/28 0155-0305. 0225 sports results. 0229 "...radio eight fifty. The Big Fifty. The Buzz, The Buzz."
 860 ON CJBC Toronto. 9/27 0155-0305. Mixing w/R. Reloj time pips and Spanish talk. 0249 in French "CJBC..."
 1090 NC WKTE King. 9/27 1900. Presumed, southern gospel mx, announcer w/southern accent, gave weather which matched Winston-Salem area, but no ID. Seemed to be gone after 1900.
 1310 NJ WEMG Camden. 10/3 1100. Spanish, ID "WEMG Camden, Philadelphia, La Megai" into Latin mx.
 1330 NY WEBO Owego. 9/30 0630. "1330 WEBO Owego" ID, in the mush.
 1370 NH WFEA Manchester. 9/30 2115. Oldies, "Unforgettable Hits, 1370 WFEA".
 1380 VT WSYB Rutland. 0/29 0605. Local weather and Rutland area news, mentions of an upcoming interview with Vermont governor Douglas. Been a regular in the mornings these days.

 That's a wrap for this week. Thanks to Kraig and John. Was down most of the week with some sort of flu than ran thru our office... fun fun fun... Best to all...

DX WORLDWIDE – WEST / TROPICAL BAND DX
Patrick Martin – PO Box 843 – Seaside OR 97138
E-mail: mwdxer@webtv.net all times UTC

Greetings,
 A nice TA opening this time around along with also some nice TPs. So away we go.
TRANS ATLANTIC DX ROUNDUP
 909 UNID het on low side of 910 0320 9/30, Probably BBC. (BP-WA)
 +Also noted at 0530 9/30, with audio trying to break through. (PM-OR)
 981 UNID, het on upper side on CKNW at 0530 9/30. (PM-OR)
 1017 UNID, male talk 0305 and 0318 9/30. Not strong enough to ID language. (BP-WA)
 1053 UNID, strong het at 0531 9/30. (PM-OR)
 1134 CROATIA, good to nil at various checks 0305-0420 9/30. Male talk in Slavic language at times three very long tones at 0400. (BP-WA)
 1215 UK, Britian various times 0305-0420 9/30, fair to nil with pop music, male talk with inflections like British EE just below threshold of intelligibility. (BP-WA)
 1269 GERMANY, Strong right now at 0426 9/29. (WS-BC)
 +UNID, 9/30 0307 het, 0325 male talk that sounded GG, but maybe the power of suggestion, poor in 1270 splatter. (BP-WA)
 +Also noted at 0455 9/0 with what sounded like a man in GG. (PM-OR)

630 KHOW CO, Denver 9/10 0017 call letter ID, then ad for an auto computer backup system. (NP-UT)
 640 KYUK AK, Bethel 9/27 easily heard with KFI's new signal and tower up. "This is KYUK Bethel, Alaska" at 0500. I was wondering what KFI's new signal would do to 640, but no problem with KYUK. (PM-OR)
 680 KKYX TX, San Antonio 9/27 0020 just absolutely blasting in way over usual KNBR-KWKA-XEFO with classic C&W, beautiful ID "San Antonio's home for country legends. Country legends 6-80. KKYX," ad for Super S Foods, ad for Kalend Nurse School, ad for Sunset Station with concert by Steve Wariner, ID "Country Legends 680, KKYX cares about south Texas." Wonder if they left their day pattern on by accident perhaps after traditional Friday night high school football game (many stations run day pattern Friday nights for football, and Texas is a heavy high school football state). Tried calling station but no answer, got answering machine. I'll send them an e-mail on their website. Have never heard this before, new! Great music. (RW-NM)
 790 KABC CA, Los Angeles 9/15 0104 "790 KABC" mention during promo for women's cancer event. Lost to Spanish language station. (NP-AZ)
 980 KFVB CA, Los Angeles 9/10 "KFVB News time 9:15" then into report on Dodgers game. (NP-UT)
 1090 KBOZ MT, Bozeman 9/25 0938 man with KBOZ call. QRM from unid relig. station. No KP7K until 0948. (AB-ID)
 1100 KWWN NV, Las Vegas 9/24 0940 ad block, ESPN promo at 0941 "ESPN Radio 1100 The Sports Leader" slogan, then into Sports Center. Good. (AB-ID)
 1110 KDIS CA, Pasadena 9/10 0029 usual Radio Disney programming. (NP-UT)
 1230 KXO CA, El Centro 9/30 0853 with weather for El Centro and "KXO" ID. (BB-AZ)
 1280 KZNS UT, Salt Lake City 9/14 0156 promo for Jim Rome on "Sports Radio 1280 The Zone." (NP-AZ)
 1610 TIS UT, Springdale 9/10 "Welcome to the gateway town of Springdale, and Zion National Park...." No call given, though the other 3 Zion N.P. stations all gave call signs. (NP-UT)

Looking at the list of reporters to this issue I noted no one listed from California. In the "old days" our California members used to dominate the column. Nancy 10/4 2100

CENTRAL DX ROUNDUP
John C Johnson – 265 Waterton Wy – Billings MT 59102-7755
E-mail: John_Johnson@prodigy.net CDXR reports ONLY: cdxr@prodigy.net

RIDING GAIN
 [NJ-MT] Nancy Johnson, Billings, MT NancyJohnson@Prodigy.net
 Drake R8B and Kiwa Loop
DOWN THE DIAL
 610 CKYL AB, Peace River. 9-29 loud. 22:39 out of country song with "We're on FM. Peace Country Favorites at 88.7 FM Valleyview, YL Country" into another country song. This station is still on 610 at this time. [NJ-MT]
 980 KUPI ID, Armonn. 10-3 loud. 21:00 with SS version of CNN News. 21:05 with "Super Caliente KUPI Ammon, Idaho Falls" and SS music. This station had been NOS/Oldies. [NJ-MT]

25 YEARS AGO
 October 15, 1983 issue of IRCA's "DX Monitor" ... **Jef Jaisun** of Kirkland, WA told about all the stuff he bought at the IRCA Seattle Convention auction ... **Ernest R. Cooper** of Provincetown, MA wrote his DX Forum from a hospital room after suffering chest pains ... **Jim Hilliker** of Anaheim, CA mentioned his visit with **Matthew Shugart** in Laguna Beach.

OPEN MIKE
 Summer is over. It's time to fire up those receivers. This column was typed 10-4-08. 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!!
 (JC-DE) **John Cereghin** WDX3IAO Smyrna, DE
 FRG-7, SRF-59
STARS OF THE WEEK

1278 UNID, weak audio 0531 9/30. (PM-OR)
 1323 GERMANY?, Just before 0500 9/30 with a woman in Russian? Lost in a couple minutes though. (PM-OR)
 1341 UNID, het on the high side on 1340 9/30 0306. (BP-WA)
 1377 UNID, presumed France with het 0306 and 0320 9/30, bits of audio trying to get through 1380 splatter, but not quite making it. (BP-WA)
 1611 VATICAN, Vatican Radio, strong carrier 0421 9/29, snippets of audio. (WS-BC)

TRANS PACIFIC DX ROUNDUP

153 RUSSIA, 1240 10/6 fair with music. (DV-WA)
 189 RUSSIA, 1229 10/6 fair with man singing in RR. Good at 1301. (DV-WA)
 279 RUSSIA, 1230 10/6 fair with singing Good 1302. (DV-WA)
 558 JAPAN, Kobe JOCR 1335 10/6 weak with music. (DV-WA)
 567 JAPAN, Sapporo JOIK 1217 10/5, weak JJ in splatter. (DV-WA)
 576 RUSSIA, 1344 10/5 JJ weak with splatter. (DV-WA)
 594 JAPAN, Tokyo JOAK fair with woman in JJ 10/6. (DV-WA)
 603 REP KOREA, HLSA 1317 10/5 fair with music. (DV-WA)
 648 RUSSIA, weak with man in ?? 1235 Fair 1331 10/6. (DV-WA)
 657 DR KOREA, weak with woman in KK //3320 10/6. (DV-WA)
 666 JAPAN, Osaka JOBK 1318 10/5 weak. (DV-WA)
 675 VIETNAM?, 1308 10/6 weak with Asian language. (DV-WA)
 693 JAPAN, Tokyo JOAB 1236 10/6 weak with much splatter, man in JJ. (DV-WA)
 738 JAPAN/REP KOREA, two Asian stations about equal at 1359 10/5. No pips heard on either station at 1400. (DV-WA)
 774 JAPAN, Akita JOUB great signal at 1210 10/5 man in JJ. (DV-WA)
 828 JAPAN, Osaka JOBB 1220 10/5 fair with man in JJ. (DV-WA)
 1053 JAPAN, Nanoya JOAR 1247 10/6 in JJ. (DV-WA)
 1134 JAPAN, Tokyo JOQR 1338 probably the station weak in JJ 9/30. (DV-WA)
 1206 CHINA, FS 1301-1307 9/30 fair riding over KEX IBOC. (DV-WA)
 1278 JAPAN, JOFR 1318 10/6 fair, then faded out, man in JJ. (DV-WA)

THANKS TO THESE REPORTERS

BP-WA BRUCE PORTZER, Seattle WA bportzer@comcast.net
 DXing with Drake R8, RFSpace SDR-IQ, K9AY antenna
 WS-BC WALT SALMANIW, Victoria BC salmaniw@shaw.ca
 DV-WA DENNIS VROOM, Salmom Creek WA vroomsi@comcast.net
 DXing with JRC NRD 545, NW EWE
 PM-OR PATRICK MARTIN, PO Box 843, Seaside OR 97138-0843 mwdxr@webtv.net
 DXing with Drake R8, NW & SW EWES, Quantum Phaser

IRCA TECHNICAL COLUMN

Nick Hall-Patch – 1538 Amphion St – Victoria BC Canada V8R 4Z6
 E-mail: nhp@ieee.org

Using Tuned Passive Loop Antennas By Kevin Schanilec

I've heard it said that successful medium wave DXing is 50% antenna and 50% receiver. In order to get the most out of the antenna factor, those with sufficient real estate will erect a EWE, Beverage, KAZ or other outdoor antenna. For those like me with little space or who have restrictive homeowners associations, one of the antennas of choice will likely be an indoor loop antenna. This might be a home-made box loop or a desktop ferrite loop such as the Quantum Loop. Those whose passion lies in using portable receivers, including the popular Ultralights, rely on the ferrite loop inside the receiver. An often-overlooked asset is a tuned passive loop used to augment the primary loop antenna. A tuned passive loop is readily available commercially from manufacturers such as DXTools.com, Terk and Select-A-Tenna and others. Alternately, one can be made quickly by the home hobbyist. This article is a summary of several techniques by which a tuned passive loop antenna can help DXers solve common problems.

1. Signal Enhancement

Facing Orientation

Signal (gain) enhancement is probably the most typical use of passive loops. For maximum gain, one possible orientation is to align the coils of the passive loop so that they face those of the windings on the ferrite antenna in your receiver. This allows the magnetic lines of flux from both loops to couple together.

For example, the Sony ICF-SW7600GR and Terk Loop are in facing orientation at right. I have found that placing the receiver inside the loop also works well, with the receiver resting next to the tuning dial housing as if in a cradle. A Quantum "Q-Stick" in this orientation would be parallel with the top of the receiver.

Adjacent Orientation

Equal and often superior results are obtained if the loop is positioned adjacent to the receiver, seemingly in the end-fire null of the receiver's ferrite antenna. What makes this work is that the magnetic field flux lines from the passive loop feed into the coils on the receiver's tuning coil as if the two coils were mounted on the same ferrite bar. This same principle is employed on the receiver's loopstick itself in order to transfer signal from the tuning coil to the sense coil. In adjacent orientation, shown at left, you should make sure that the receiver's ferrite is somewhere near the horizontal center of the passive loop; otherwise, the two coils involved may not couple very well. This can be done by flipping down the stand (if the receiver has one) or placing the receiver on a book.

In general, good results are obtained in using passive loops to augment both internal ferrite loopsticks in portable receivers and the small air-core loops supplied with modern home entertainment receivers. Additionally, all passive loops will work in either orientation. I have found that finding the proper position with a ferrite passive loop such as the Quantum Stick can be more difficult, especially in adjacent orientation, whereas air-core loops generally have a wider "sweet spot". Also bear in mind that signal gain at night may not be very noticeable, since signal levels are much higher than during the day, and with your receiver's AGC circuit limiting gain increases, finding the right position may be more challenging.

Generally, the closer the receiver is to the passive loop, the higher the gain transferred to the receiver. The results can be impressive: a Sony SRF-59 UltraLight receiver, up next to a Terk loop, is more sensitive than a fully-aligned Sony ICF-S5W. Remarkably, even the mighty Sony ICF-2010 registers two more LEDs when matched with my 4" homebrew ferrite antenna/coupler. Conversely, a Quantum Loop requires at least a 15x15 inch box loop for appreciable gain increase. In any event, a general rule of thumb is: the bigger the passive loop, the better the gain.

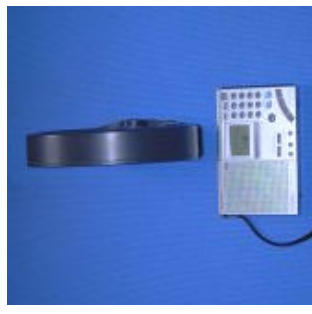
If you want even more gain, try putting two passive loops next to each other. As depicted at right, you can use a Terk Loop or Q-Stick in as an intermediary loop between a larger box loop and the receiver.

When the receiving and passive loops are identically matched or nearly so, the two loops may not complement each other. For instance, when I use one Terk Loop as the receiver's main antenna and another as a passive loop, there is usually no orientation by which I can get any signal gain – in fact, all I can do is degrade it! Similarly, Gerry Thomas reports that his Q-Stick passive ferrite loop does not work well with the Panasonic RF-2200, both of which have 8-inch ferrite loopstick antennas. In these instances, use of a larger passive loop will be required.

2. Selectivity Enhancement

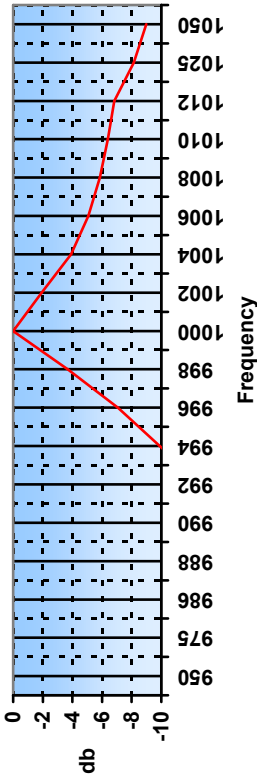
Critical Spacing

A technique to enhance the selectivity of a receiver consists of simply pulling the receiver away from the passive loop in either orientation. At a critical point, the loop will still be close enough to provide signal gain, but the high-frequency content and adjacent-channel interference are reduced. Electrically, the two coils are now decoupled to a large degree. With the Sony M37V, the critical point is about 3 inches away from a Terk Loop and about 10 inches away from a 15x15 inch box loop. With a receiver employing a larger ferrite loopstick, the critical distance will be further away.



By simulating the resultant loopstick/passive loop circuit on Gene Preston's AC.EXE program, the results of a typical critically-spaced coupling are shown below:

Critical Spacing Selectivity



In this graph, the signal is decreased about 6 decibels at 3.5 kHz on either side of the desired frequency, making this roughly equivalent to a 7 kHz filter. Compared to the filtering in many portable receivers, this can be a major improvement. Continuing to separate the receiver and loop will narrow this figure even more. However, past a certain point, the two will be decoupled to such a degree that the passive loop no longer will affect the selectivity. Also, if your receiver has decent IF filtering, or if the passive loop has very low Q, the effects of this strategy may be negligible.

You can also experiment with using more than one passive loop. For instance, I find success putting an intermediate loop such as the Q-Stick near the receiver for gain enhancement in addition to a much larger passive loop for selectivity control. As is shown in the picture on the right, the intermediate loop is pulled away just a bit, which helps to further



tighten the selectivity.

The reverse of this selectivity control strategy is also true, in that if you place the receiver quite close to the passive loop, this will generally result in a broadening of the bandwidth. For example, the Quantum Loop by design has rather narrow selectivity. If I want to listen to music, I place it right next to a large tuned box loop, and careful tuning of the loop will produce a pronounced brightening of the audio, especially if the receiver is tuned a bit off-frequency in AM mode.

Critical Angle

An alternate way to decouple the receiver and passive loop is to place them at approximately a 45 degree angle to each other. By doing so, the coils are in neither facing nor adjacent orientation, but rather half-way in between. Regardless of the actual distance between them, the two are completely decoupled, and the two units will remain until you find a point at which tuning the passive loop has no effect on the receiver. You can then move the loop or receiver anywhere along an imaginary 45 degree line, and the two units will remain decoupled. Selecting a point just on either side of the imaginary 45 degree line will begin to loosely couple the receiver and loop in either facing or adjacent orientation. The receiver's bandwidth will be narrowed as with critically-spaced decoupling. This is often more convenient with receivers with large loopstick antennas, since the distance required for critical spacing is often correspondingly quite large.

Detuning of the Passive Loop

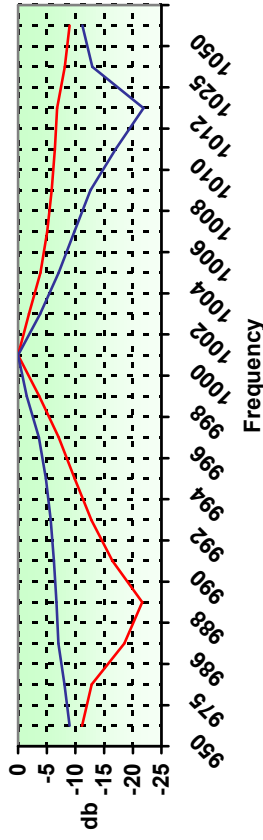
The tuning of the passive loop will change depending on how far away the receiver is. To verify this, tune to a certain frequency on your receiver, and then tune the passive loop for a peak while the receiver is loosely coupled in facing orientation. Bring the receiver closer and closer to the loop and

continue to adjust the tuning of the loop to maintain the peak. With facing orientation, you will find that you must tune the loop higher and higher in the band to maintain the peak, and lower and lower with adjacent orientation. Therefore, depending on the technique you use, slight retuning of the passive loop may be required.

3. Adjacent channel notching

You may have noticed that a passive loop will both peak and notch a particular frequency, depending on the tuning capacitor's setting. For instance, try peaking a station at 1000 kHz or so using facing orientation with the loop pulled back a couple of inches. Then, slowly rotate the passive loop's tuning capacitor up-band a bit – you should notice a definite notch when the passive loop is tuned to 1020 kHz or so. In other words, in facing orientation, the passive loop will induce a notch below its tuned frequency! With adjacent orientation, just the opposite occurs – a notch will be placed above the passive loop's tuned frequency. In the chart below, the critically-spaced response from earlier is extended down to -25 db to show that there are definite notches about 12 kHz away in both orientations.

Up-band and Down-band Notching



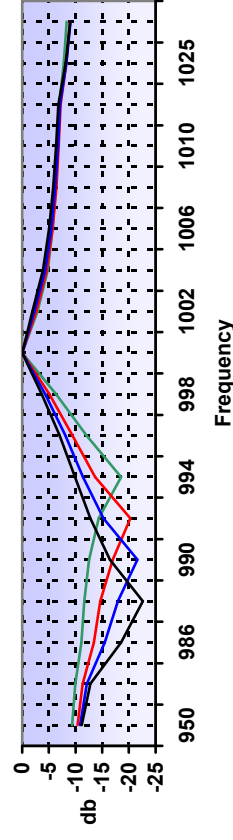
Because of the way the receiver's loopstick and the passive loop interact, there will *always* be a lower notch in facing orientation and an upper notch in adjacent orientation. Therefore, if you want to put a notch up-band from the desired target to attenuate interference on the neighboring channel, use adjacent orientation, and use facing orientation for notching down-band from your target. As a memory aid, I use the phrase "face down, this side up" to remember the relationships. While not reflected in theoretical calculations, in actual practice there is a more pronounced null in adjacent orientation.

As an example of using this technique, I have a strong local on 1000 kHz which makes reception of 990 and 1010 a challenge. In facing orientation (down-band notch) I can listen to 1010 much more easily, and the same for 990 using adjacent orientation (up-band notch). If I get the orientation wrong, as the chart above shows, the interference is 20 decibels worse than when I started!

Notch Depth vs. Notch/Peak Spread

As you decouple the receiver and passive loop, in addition to tightening the selectivity, the "spread" between peak and notch will narrow. The graph below shows the effect of progressively decoupling the receiver and loop.

Notch Depth vs. Notch/Peak Spread



The trade-off here is that not only does decoupling decrease the gain imparted to the receiver, the depth of the notch gets shallower as well. As with the critically-spaced selectivity technique above, an intermediary loop between the main passive loop and the receiver will help restore gain should you need it.

Notching an Interfering Station

For the DXer, the optimum situation is where the peak and notch are spread exactly 9 or 10 kHz apart (and even narrower for transoceanic split-frequency DXing) so that the target is peaked and the interfering station is notched. A casual placement of the loop and receiver may result in a 20-30 kHz spread, and a critically-placed loop for selectivity alone might still put the notch up to 15 kHz away from the peak.

By moving the receiver even further away from the loop, the spread between peak and notch decreases, and at a critical point, the spread will be exactly 10 kHz. The spacing will depend on the receiver and passive loop being used. For instance, with a Sony M37V and a 15x15-inch box loop, the distance is usually around 12 inches with either orientation. You will need to experiment to find the distance that works for each receiver/loop combination, and the distance in one orientation may be different than the other. As above, the use of an intermediary loop can help provide extra gain if needed.

A recommended approach to find the critical placement for a 9 or 10 kHz spread is as follows:

- 1) Select the orientation based on where the co-channel interference is (i.e., adjacent orientation for upper notch and facing orientation for lower notch).
- 2) Tune the desired target frequency on both the receiver and loop for maximum gain, with the receiver a few inches away from the loop.
- 3) Tune to the interfering frequency on the receiver *without touching the tuning on the passive loop*.
- 4) Move the receiver either closer to or away from the loop along the imaginary perpendicular line until the notch on the interfering station is found; it may disappear or perhaps the background noise will elevate. If you have trouble discerning any notch effect, try orienting the receiver and passive loop to place a simple directional null on the interfering station so that you can better hear the notch.
- 5) If you end up moving the receiver further away from the loop in Step 4 to minimize the interfering station, that means you started out too close in the first place. Similarly, moving the receiver closer to the loop for the notch means you started out too far away. In either case, come a little bit back towards where you started and repeat steps 2-4 until the target peak and interference notch coincide.

For example, in order to receive a semi-local on 620 kHz under a strong local on 630 kHz:

- 1) Select adjacent orientation to put a notch above the desired target.
- 2) Tune the receiver to 620 and place the receiver several inches away from the loop, then find the peak on the loop. For this example, assume the initial distance is 14 inches away.
- 3) Tune the receiver to 630 (the interfering station).
- 4) Move the receiver either closer to or farther from the receiver to find the notch. For this example, assume that the receiver is moved closer, to 10 inches away, for the notch on 630.
- 5) This means that the distance was too great to begin with, so come back a little towards the original distance (say, to 11 inches away) and retune both receiver and loop for a peak on 620. If repeating steps 3 and 4 shows that no further movement is required, the desired 10 kHz spread has been found.

Notching out split-frequency interference is much easier. In this case there will generally be a heterodyne as an indicator, so you don't need to actually tune to the interfering station in Step 3. Rather, adjust the tuning on the loop to minimize/notch the heterodyne while tuned to the desired target, and then increase or decrease the distance between the receiver and loop (followed by slight retuning of the loop) until you find the position of maximum clarity of the target and minimum heterodyning. This becomes a very quick process with a little practice. In many cases, notching of the interfering carrier will cause the receiver's AGC to increase gain for the target, resulting in an apparent increase in sensitivity.

Once you have found the desired notch, depending on the situation you can then:

- Move the receiver or loop a little, either closer to or further away, to see if there is a better relative position, rather than trying to fine-tune the loop's tuning
- Retune the loop *slightly* away from the interfering station (e.g., tune the loop slightly down-band when listening to 620 under a local on 630) while keeping the distance between the receiver and loop the same. This will maintain the 10 kHz spread, but will put the peak on the target's sideband which is furthest away from the interference and the notch on the closest interfering sideband.
- Move the receiver a little closer to the loop in order to increase the peak/notch spread (say, to about a 12 kHz spread for domestic DXing) and then retune the loop slightly to the point of best clarity. The result is that you will peak the sideband of the target which is away from the pest while keeping the notch on the carrier of the interfering station.

Dealing with IBOC Digital Noise

One variation to the orientation rule above is in dealing with IBOC noise. This stems from the fact that the digital sidebands which produce the noise are centered about 12 kHz away on either side of the station's actual carrier frequency. For example, if my 630 kHz local were using IBOC, the digital

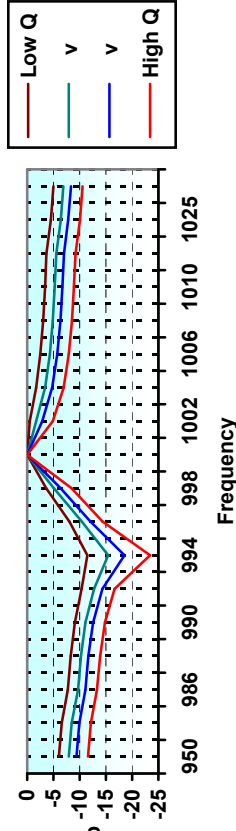
noise would be centered at 618 and 642. Therefore, to tune in 620, one must actually use facing orientation to put a notch below on 618, even though the interfering station itself is above on 630.

Of course, by doing so, the analog sidebands from the main signal on 630 will cause interference, although the decoupled passive loop may provide increased selectivity in addition to the notch. In any event, my experience has been that notching out the noise associated with IBOC broadcasts results in a more readable signal, especially with weak DX targets that would otherwise be completely buried in the noise. Unfortunately, if there is an IBOC station on the other side as well (in this case on 610, with the upper digital sideband on 622), then there isn't much that can be done, since both sidebands of the target on 620 would suffer from the noise.

Notch Depth and Q

The "Q" of a passive loop, which essentially describes the tuning sharpness of the loop, also influences the peaks and notches achieved. Specifically, both the peak and the notch are more pronounced as the loop's Q increases; therefore, a higher the Q of the loop, the better.

Peak/Notch vs. Q



While the above graph depicts results from using the high-Q loop in facing orientation, the principle applies in either orientation. For example, to listen to 1200-WOAI some 1750 miles away on a Sony M37V, I need to deal with IBOC noise from a strong semi-local on 1190 and a strong local on 1210. Using the IBOC strategy above, I must use adjacent orientation to avoid 1190's upper digital sideband on 1202. Favoring the lower sideband of 1200 in this way, interference from 1210 is reduced, but 1190's upper analog sideband will interfere: a tight situation indeed.

Using a 9-inch Terk loop, I can barely make out 1200-WOAI amidst the various sources of interference. With a small (3.5 inch) basket-woven Litz wire loop with very high Q (at right), there is a definite peak of intelligibility; even though the gain isn't as great as with the Terk loop, 1200-WOAI comes in just fine!



4. Adjacent channel interference – Fixed Channel “Detuning”

If your receiver only tunes in fixed 9 or 10 kHz increments, as with many Ultralights and other portables, DXing split frequencies can be difficult. For example, tuning to a trans-oceanic signal on 774 kHz next to a local on 770 would be much easier if you could slide over to 775 or 776. Such “detuning” is also common practice with domestic stations spaced 10 kHz apart; for instance, to hear 780 under local 770, you might tune up to 782, placing 12 kHz between you and the problem. In both of these cases, you will be favoring one sideband over the other in order to avoid interference.

The peak/notch technique above can provide considerable help with fixed tuning receivers. It is probably impossible to move the receiver far enough away to affect a 1 or 2 kHz spread between peak and notch. However, you can move the receiver out to a point of extreme tuning sharpness in order to increase the slope of the peak-to-notch curve to the maximum extent possible.

In looking at the “Notch Depth vs. Notch/Peak Spread” graph several sections earlier, as the notch draws closer and closer to the peak, the depth of the notch is shallow, but the slope of the line is significantly greater. Therefore, in tight situations you can take advantage of the steep slope to significantly favor one station, or one sideband, over the other. In selecting where on the slope you want to be, you will either peak the target or notch the adjacent interference; let your ear be the judge. For example, my semi-local on 1190 kHz has substantial man-made interference which renders the lower sideband (centered around 1188) completely inaudible, while the upper sideband at 1192 is

clean. While my higher-end communications receiver can simply be placed in USB mode for clean reception, an UltraLight with only fixed-tuning AM (dual sideband) mode receives both sidebands, and the overall result is an unintelligible signal. Using well-separated facing orientation to favor the upper sideband over the lower, I can first tune the loop for a peak on the interference (so I know where I'm at), then tune slightly up-band to notch out the noise. While not necessarily isolating the desired sideband, it is now emphasized in the receiver's passband compared to the other sideband.

But wait, there's more! By using a second passive loop as an intermediate, the results are even better. In my test on 1190 kHz above, I started out with a Sony M37V receiver and a 15x15 inch box loop. Separating the two units enough to increase the slope of the peak-to-notch curve meant that signal gain was rather low. By first placing a tuned Q-Stick in between the units, about 1 inch away from the receiver, I was able to provide more gain to the receiver. The intermediate loop also further enhanced the rejection of the lower sideband – tuning on the box loop was much sharper, corresponding to a steeper peak/notch slope. As a result, the upper sideband of 1190 was loud and clear with just a hint of the noise from the lower sideband. While this is not actual excited carrier single sideband (ECSS) reception which eliminates the offending sideband altogether, it is probably about as good as you can do with an AM-only receiver, and it can make a huge difference.

This can be a valuable strategy even if your receiver is able to tune off-channel. For example, on a recent DXpedition I used an Eton e100 Ultralight in Alaska to listen to Asian split-frequency stations. The e100 not only tunes in 1 kHz increments, but also has surprisingly tight filtering. However, in situations such as an Asian on 972 kHz next to a domestic on 970, the e100 was not able to produce decent audio, even if I tuned up to 974. Using a Terk Loop in loosely-coupled facing orientation, I was able to not only provide extra gain, but also strongly attenuate the domestic on 970. By favoring the upper sideband of the target on 972, it came in loud and clear.

5. Co-channel interference – Passive Phasing

When a passive loop is oriented such that its signal for a given station is precisely out of phase with the signal generated by the receiver's antenna, the two will cancel each other out. As a result, an otherwise dominant station will delightfully disappear, allowing you to hear what was lurking underneath. This technique produces a reception pattern in the shape of a cardioid (right), with a pronounced null in one quadrant and virtually undiminished reception in the other three.

Either orientation can be used for passive phasing, although adjacent orientation often seems to work better than facing orientation. Here is a basic procedure for passive phasing (paraphrased from Gerry Thomas' Q-Stick phasing procedure):

- 1) Tune the passive loop to maximize the frequency of interest using the selected orientation, then set it well away from the receiver.
- 2) Orient the receiver to place a simple null on the station to be eliminated. If possible, tilt the radio up or down (i.e., azimuth change) to get an even better null, using a tripod for stability if desired.
- 3) With the passive loop still tuned to the desired frequency, position it a few inches away from the receiver. Then, begin rotating it about its vertical axis as you also change the distance from the receiver. At a certain distance and angle, you will hear the unwanted station's signal level go down, or see it on the S-meter of the receiver. If you don't have an S-meter, try decreasing RF gain so that you can better hear the null.
- 4) Once you have found the general distance and angle, try going off-axis a bit (i.e., not at a 90-degree angle from the receiver) to see if there is an even better orientation of the loop, or try the other orientation. Some phased nulls may be found with the loop at nearly a 45-degree angle from the receiver. Elevating the passive loop an inch or two may make a big difference. Also, with adjacent orientation, the passive loop might have to be tuned slightly up-band to account for decreased coupling; facing orientation may require re-tuning slightly down-band.
- 5) Once you have found the right distance and angle for the passive loop, *slightly* adjust the passive loop's tuning or the receiver's position to fine-tune the null.



Facing Orientation – Eton e100 and Terk loop



Adjacent Orientation – Quantum Loop and 15" box loop

if you get a decent directional null in Step 2 above, you may notice that the audio becomes distorted. As a result, the eventual phased null may not be very good because the out-of-phase signal produced by the passive loop is now significantly different than the distorted signal produced by the receiver's directional null. In this case, try to lessen the directional null a bit and then re-do the phased null.

In phasing out the undesired station, the strength of the remaining stations on that channel will depend on the levels present in the receiver antenna and passive loop individually. In other words, the final result will only be as good as the weakest antenna. For example, the M37V has a very small ferrite antenna, and the limited in-phase signal it produces doesn't need much opposite-phase signal from the passive loop to cancel it out; therefore you will have to decouple the loop a significant amount, resulting in less gain for the DX targets underneath. To remedy this, use an augmenting passive loop for gain, then use a second loop for the phased null – it really works well! In the case of an M37V with a Q-Stick (right), I am essentially phasing the Terk loop with a receiver with an 8-inch ferrite antenna, so there is sufficient gain to hear the remaining stations.

With a high-Q passive loop, you may find that its narrower opposite-phase signal doesn't phase very well with the broader contribution of the receiver's loopstick. In such a situation, you can use an intermediate loop with the receiver to narrow its selectivity, then apply a larger high-Q loop for a phased null. In the picture just above, the opposite occurs: the Q-Stick causes the receiver component to have a narrower bandwidth than the component supplied by the low-Q Terk loop, so a higher-Q passive loop would work better in this situation.

Once you have nulled the unwanted station to the extent possible, you can then employ a second passive loop and move it around either the receiver or the first passive loop until you find an even deeper null. This "double phasing" technique can be very effective, and has allowed me to hear stations under fairly strong locals that would have been impossible with single passive phasing alone.

Another application for phasing is to reduce co-channel interference. For example, a target on 810 may be sitting alone on the channel, but a local powerhouse on 820 is completely obliterating the target. In this case, use adjacent orientation and tune the passive loop to 810, and then tune to 820 on the receiver and passively phase 820 to the extent possible. Then tune the receiver back to 810 – the co-channel interference will be significantly reduced.

6. Images and spurs

Images are created when a strong station causes the receiver to generate a phantom signal of that station two IF bandwidths down from where it actually is. Since most receivers use either 450 or 455 kHz IF stages, the phantom image will show up 900 or 910 kHz down-band. For example, I have a local station on 1590 kHz, and many of my receivers have a very strong image on 680 or 690 kHz which itself sounds like a local!

Spurious mixing products ("spurs") are produced when two strong local signals mix together to produce a third signal, which is comprised of the arithmetic difference between the two local signals' frequencies or some other combination. For example, my strong locals 1590 and 1000 produce a huge spur on 590 (1590 – 1000 = 590), which is a "second order" product, and 1000 combines with another strong local on 880 to produce a third order product on 1120 (1000 + 1000 – 880 = 1120).

The notching technique is very effective in eliminating these artificial signals, tuning the passive loop to place the notch on the offending station which is causing the image or spur. As discussed earlier, the notch produced with adjacent orientation is much deeper than that produced with facing orientation, therefore use adjacent orientation for image and spur notching.

In order to find the correct tuning position on the passive loop for an image/spur notch, place the passive loop in adjacent orientation close to the receiver, and tune the passive loop in order to maximize the image or spur in order to get close to the final spot on the loop's dial. Then, tune the loop *slightly* down-band for the notch – the image or spur should disappear or be substantially reduced. Once you get the hang of this, you can skip the peaking step and simply listen for and tune to the notch.

Some receivers such as the super-sensitive Sony ICF-S5W are so prone to images that, on a night with decent propagation conditions, I can get a heterodyne on just about every frequency in the



lower part of the band, meaning that even moderate-strength distant stations are enough to cause the SSW to produce an image. Using a passive loop in adjacent orientation, as I tune up and down the band on the receiver, I can tune the passive loop up and down as well to make the images disappear. An added advantage to image and spur notching is that you can use another passive loop in facing orientation for gain. For example, with the Sony ICF-SW7600GR, during the day my strong local on 1590 creates an image on 680, obliterating a weak semi-local on this frequency. By notching out 1590 with an adjacent loop and peaking 680 with a facing loop (see picture at right), the weak station is easily heard, a feat I can't accomplish with just one loop, regardless of the orientation.

Summary

Whether you are using a stock UltraLight or the Sony ICF-2010, judicious use of a passive loop (or two!) can make a huge difference. Additionally, for those like me who like to use a Quantum Loop or similar as the primary antenna for a communications receiver, all of these techniques are available. Optimum results are typically obtained when you employ the largest, most selective (highest Q) loop possible, your space and budget allowing. However, as described above, even an inexpensive commercial loop can be very effective. To find out more about loop design and construction, the document "Air Core Loop Designs" is available at the DXer.ca web site in the Ultralight File Area. It provides information on and links to a variety of different designs.

With all these tools in the toolbox, hopefully one or two will work for you in a given situation.

Good DXing to you! Bainbridge Island, WA, October 2008

The 2008 Fall Follies Ultralight MW DX Contest

RULES

There are two Classes of radios in this event:

- **Barefoot Class:** A "stock" recognized Ultralight radio with no internal modifications or external antennas. One or more such radios may be used, one at a time (other than as a frequency spotter), during the contest. (The list of Recognized Ultralight Radios is available in the Ultralight Files area at dxer.ca).
- **Unlimited Class:** a DXer may use any combination of recognized Ultralight radios, modified or stock, any antenna/ground configurations, so long as the intent is to receive one MW frequency at a time. Included in the system may be any passive or active peripheral device, including antenna tuners, RF amplifiers, matching devices, audio and RF filters or processors and wave traps. Radios in the Unlimited Class may have additional antennas of any type connected to them either directly or inductively.

There are three Contests in the Fall Follies for each of the two Classes listed above, consisting of:

- **Total Stations Heard Contest:** total number of stations identified and logged.
- **World-wide DX Contest:** top five stations' total distance.
- **North American DX Contest:** top five stations' total distance from transmitter to receiver. *The receiver shall be located in the continental United States or Canada and the five stations must be located in the US and either Canada or Mexico, but not both.*

GENERAL RULES

1. The Sprint will run from 30 minutes before your local sunset October 24 to 30 minutes after your local sunrise November 3, 2008. Participants in the Total Stations Heard contest may listen for a four hour total period. This four hour period may be divided in up to 8 segments, but the total listening time shall not exceed 4 hours and no session shall be less than 30 minutes of continuous DXing. Participants in the World Wide and North American DX Contests may log stations at any time during the 11-day contest period, but they may only report five loggings for each contest.
2. All contestants are restricted to a single entry in a single Class (Barefoot or Unlimited Class, but not both), and may participate in one, two or all three contests in that Class. All DXing must be done from a single geographic location.
3. Multi-operator contesting is permitted provided all work is conducted at the same geographic location, and only one radio is utilized at a time. A single entry will be made for multi-operator stations. This rule is intended for you to involve your kids or grandkids or their friends (particularly if you don't hear so well), and not to set up for a marathon event.
4. The use of a separate amplified receiver to confirm station identification, resolve frequency questions or even to "hunt" for new stations is both permitted and encouraged, providing positive reception of an intelligible signal by ear is obtained using the contest set. Use of this separate receiver may not in any way enhance the performance of the contest set (unless it is in the Unlimited Class), and the logged signal must be processed through the Ultralight's RF and Audio Circuits regardless of the Class.

5. Scoring

Only stations transmitting within the frequency band of 530 kHz – 1700 kHz may be counted. Only signals transmitted from a fixed site and using legitimate, verifiable station identification may be counted. This does not exclude legitimate transmissions such as low power travel information stations.

In the Total Stations Heard Contest, each different station logged counts. In the unlikely case of a tie, the DXer receiving with the most distant station will be considered to have the higher score. (Note: except for the eventual top two scorers, no one must submit a station log for this category, simply the total number of stations heard.)

In the World-Wide DX and North American DX contests, a summation of distances between the transmitter and the receiver, measured in whole kilometers, determines the score. In the unlikely case of a tie, the DXer receiving the sixth most distant station will be considered to have the higher score. Each DXer shall calculate and submit distances and summation. Assistance with this may be found in the Fall Follies FAQs.

6. Registration and Entries

- (a) It is not necessary register and anyone anywhere may enter. Please note that the North American DX Contest is restricted to residents of the continental U.S. and Canada ONLY.
- (b) A participant can enter each of the three Contests only once, for some reason a participant chooses to use a Barefoot Class Radio during part of one of the Contests and an Unlimited Class radio during the rest of it, the entire entry should be made in the Unlimited Class of that Contest
- (c) Entries submitted by anyone 21 years old or younger receive a total point multiplier of 1.5.
- (d) Entries containing required contest information in the proper format (see below) must be e-mailed to the Committee at bjphorcas@rockisland.com within 48 hours of the end of the Sprint. Judges may enter the Sprint providing their entry is reviewed by a separate judge. Top scorers will be announced as soon as we sort out the entries. The top two scorers in Total Stations Heard Contest will have 48 hours to produce a simplified log by email for publication on a website. The top scorers shall be notified upon evaluation of all entrants' scores.
7. Log Format: entries shall be made by e-mail (only) and shall include the name, address of the entrant or entrants, and longitude and latitude of your location, and email address. Description of radio and Class entered shall be specified. If Unlimited Class, describe all antennas and peripherals, etc. utilized. Separate entry logs per Class, please. Log shall contain total number of stations identified and top five distance DX in Americas and World-wide categories, if any.

FAQs and further information may be found in the Contestant's Package in the Ultralight Files area of dxer.ca

EXAMPLE SUBMISSION:

Fred Jones, Dry Gulch AZ 45:03:4N 89:00:05W FredJones@Gulch.com
 RADIO: Sony SRF-59 Barefoot Class.

STATIONS LOGGED CATEGORY: 45 stations (the total number of stations is all that is required here)

NORTH AMERICAN DX CONTEST:

1. 1200 2/29 850 KOA Denver, CO 1015 km.
 2. 1201 2/29 870 WWL New Orleans, LA 1432 km.
 3. 1205 2/30 1520 KOKC Oklahoma City 2123 km.
 4. 1210 2/30 900 XEWA, Monterrey, Mexico 3635 km.
 5. 1215 2/30 1000 KOMO Seattle WA 904 km.
- Total: 8109 km.

WORLD-WIDE DX CATEGORY: No Entry

(Fred didn't hear any stations from outside the Americas from his QTH in Dry Gulch, AZ, so he had no submission in the World-wide category. Had there been an entry, the same format would be used as shown above for his North American DX submission.)

Please also note that the two top scorers in the Total Stations Heard Contest will be asked for an abbreviated station log for publication. That log should contain frequency, call letters, location and time heard for each station logged. No program details are necessary.

The 2008 Fall Follies Ultralight MW DX Contests FAQs

How do I enter? Your log is your entry form; please conform to the sample entry shown in the Rules. You enter the contest by forwarding your log to: bjphorcas@rockisland.com within 48 hours of the end of the Contests.

What radios are considered "recognized" as Ultralight Radios to be used in this event? The shirt pocket radios that have currently been approved by the Ultralight Radio DX Definitions Committee are listed in the Ultralight Gallery and evaluated in various Shootout articles, all located in the Ultralight Files area of www.dxe.ca.

If you wish to use a current or very recent "entertainment grade" shirt pocket portable that is not recognized as an Ultralight, it might be possible to have it considered by the Definitions Committee, with at least a week of advance notice. Please contact Kevin Schanilec at saty@sounddsi.com.

Where can I buy an Ultralight radio? The analog SRF-59 is \$14.95 at many locations. Sony Style's online price is \$14.95 plus sales tax with free ground shipping. The cost ranges from the SRF-59 to above \$100 for the SRF-1615 with most other makes and models in between. Many department stores and discount centers carry the Ultralights. Amazon is another good place to look. For an excellent comparison of the various models, read Gary DeBock's Shootouts at in the Ultralight Files area of www.dxer.ca.

I would like to enter the Contests in the Barefoot Class using one of my analog UL radios. Unfortunately, I have some arthritis in my hands and I would like to modify the radio slightly for easier tuning. Will my radio be still considered a Barefoot Ultralight? Unfortunately, no, since it is impossible for us to judge the term "modify slightly." However, several DXers have used a Dremel tool to remove a small part of the radio case to expose more of the tuning wheel. If you wish to make this single minor subtraction, you may still enter your loggings in the Barefoot Class.

During the Contests, what if I don't hear the station's call letters? Call letters are not required to be heard for identification. What is required is a judgment call by the participant. There should be sufficient information suitable to make the identification much more likely than not. Typically, slogans, local phone numbers in commercials, weather information and other clues are suitable for identification.

Example 1: say you are tuned to 780 kHz and hear a weather report for "lake effects snow", or a program on the radio regarding the White Sox, Cubs, Bears or Bulls. You have heard WBBM much more likely than not and can list it as heard and identified.

Example 2: you are on 780 and hear Spanish, but you don't know what is being said. You know that Venezuela Radio Coro is on 780. Because there are any number of stations in the US and Caribbean that are Spanish language on 780, you can **not** say that this station is more likely than not Radio Coro. No ID.

Example 3: you are tuned to 780 kHz and there is a weather report of ocean breezes and temperatures in the 80s. The announcer has an "islands" dialect or accent. The news reports that Governor Pearey is visiting England. That would be clues sufficient to identify ZBVI.

What if I am listening to a program or song on the Ultralight, but the program fades but I clearly hear the identification on my Drake R8 and 1500' beverage? If you are more likely than not certain that it is the same station you heard on the UL before it faded away, it is properly identified and you can count it. The identifying information (ID, weather report, etc.) does not need to be heard on the UltraLight.

What if I am listening to my Drake R8 and 1500' beverage and hear an identification and quickly turn on my UL and the same station is heard? You have a proper identification of the station, but any time you spent listening on the Drake for stations is counted in the four hour period including minimum time periods.

What if I start out listening with an SRF-59, switch over to a SRF-39, and finish with a Sangean DT-200X? As long as none of the radios are modified or coupled to an antenna, you may total all stations towards one Barefoot Class entry.

What if I start out with a Barefoot Class Radio and switch over after two hours to my Unlimited Class rig? You must enter all of your loggings in Unlimited Class.

My son and I have separate ULr's. May we combine our scores as "multi-operators of one location"? Yes, if only one radio is used at time. However, if two radios are used simultaneously (other than verifying frequency), the scores may not be combined. Each of you should enter as separate contestants.

May I use more than one Ultralight, Barefoot or Unlimited and record each simultaneously during the 4 hour period and compile a score based upon all of the recordings? No, only one radio may be used at a time. However, nothing would prohibit recording through one radio at a time, provided that the entrant is actually listening to that radio. Use of the recording would be permitted for station ID.

I've never entered an event where accurate distances between the receiver and the station were important. How accurate do these need to be and what are easy ways to get the distances? For the five or ten stations entered in the Americas DX and World-wide Categories, distances should be recorded to the nearest whole kilometer (conventional rounding). Many DXers find their listening post's coordinates, look up the station coordinates on-line and then use some sort of distance calculator, usually also on-line. With some of the sites below, you do not even have to look up any coordinates except your own.

The FCC database containing station location is considered authoritative for any listed station in North or South America. If the longitude and latitude of the station is unknown, use that of the nearest city or town.

Suggested sites for geographical coordinates:

- FCC Database: <http://www.fcc.gov/mb/audio/amq.html>
- This site provides coordinates in an easy format: <http://www.amlogbook.com/freq/freq1.htm>
- <http://kopazdesigns.com/ambcl/>

Distance between the receiver and the antenna may be calculated using any competent method using the latitude/longitude of the transmitting antenna and the latitude/longitude of the receiver. For local transmitting sites which can be plotted on a map also showing the receiving station location, direct straight line distance using map scale references may be used, rounded to the nearest whole km.

- Distance calculators:**
- <http://www.fcc.gov/mb/audio/bickel/distance.html>
 - <http://www.indo.com/distance/>
 - <http://kopazdesigns.com/ambcl/>

The Topaz Designs site is particularly handy for actually calculating reception distances within Canada and the USA (left side) without having to enter station coordinates at all. It can also assist with solving unidentified mystery stations (right side.) The above sites are suggested, but not exhaustive.

John Bryant, Kevin Schanilec, Allen Willie, The Ultralight Contest Committee

The IRCA is a non-profit organization devoted to the hobby of hearing distant stations on the Broadcast Band (510-1720 kHz). **DX Monitor**, the official publication of the IRCA, is published in "soft" form 35 times a year (weekly from November through March, twice monthly from April to November) and in printed form 30 times a year (weekly November through March, monthly April to November). **DX Monitor** contains members' loggings, articles on radio stations, receiver reviews, technical articles, DX tips, and other material of interest to Broadcast Band DX hobbyists.

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