



DX MONITOR

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International Radio Club of America

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No EDXR this time. **Seattle** deadline for our next issue (V56_N19) is **Monday 01/07/19 4 PM PLT** – pb

2019 IRCA/DecalcoMania Convention

The 2019 IRCA Convention will be held on September 5, 6 and 7 at the Courtyard by Marriott Seattle Southcenter, 400 Andover Park West, Tukwila WA 98188. Registration is Free. Banquet (TBA) will be paid for individually by attendees. Guest room rate is \$109 plus tax. Guests are encouraged to share a room and save. Phone number(s) for room reservations are 800-321-2211 or 206-575-2500. You must mention International Radio Club of America Convention to get this rate. Hotel is 2 miles east of Sea-Tac Airport. There is also an Amtrak station in Tukwila just Northeast of the hotel. Parking at hotel is free. There are many restaurants and stores nearby and inside the hotel. Other amenities include business center, pool, free Wifi, etc.... Visitor's bureau is online at visitseattle.org. Your host for this event is Mike Sanburn: mikesanburn@hotmail.com

Here is the reservation link your guests can use to make online reservations: https://www.marriott.com/meeting-event-hotels/group-corporate-travel/groupCorp.mi?resLinkId=International%20Radio%20Club%20of%20America%5Eseasc%60IRCA%60109%60USD%60false%603%609/5/19%609/8/19%608/15/19&app=resvlink&stop_mobi=yes

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need help with the link, please do not hesitate to ask. We appreciate your business and look forward to a successful event. Individuals may also call toll free, 1-800-359-8233, refer to group code "IRC".



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

Email: nhp@ieee.org

Nominations for the IRCA 2019 Elections:

IRCA members, it is time to think about who you would like to represent you as the next club President, Secretary-Treasurer and Board of Directors. Their terms will start on September 15th 2019 per the IRCA Constitution, Article III, Section 5, Part 2. Nominations will be open for President, Secretary-Treasurer, and seven members of the Board of Directors from December 15 2018 through January 31st 2019. Only one nomination each for President, Secretary-Treasurer, and only seven nominations for the Board, shall be allowed each IRCA member. An eligible member may nominate his or herself. All nominations must be submitted in written (Email) form to the ECC by January 31st 2019.

Nominations Are Open for the TVA and RHA for 2018-2019

Ted Vasilopoulos Award (TVA)

Ted Vasilopoulos was a charter member of IRCA who died in 1965, and was known for his high DX standards and contributions to the club. This award in his honor is presented to the IRCA member who has contributed the most to IRCA and the DX hobby during the past several years. The following persons have won the TVA in the last five years and are ineligible this year: **Phil Bytheway, John C Johnson, Gary DeBock, Eric Bueneman and Nick Hall-Patch.**

Ric Heald Award (RHA)

Ric Heald was an enthusiastic IRCA volunteer and contributor. In 1995, after his passing, the RHA was created to recognize the IRCA member who most benefited the club in a particularly noteworthy way during the previous year. The following persons have won the RHA in the last three years and are ineligible this year: **Brandon Jordan, Mark Durenberger, and Ernest Wesolowski.**

All nominations, including a brief statement supporting the nomination, should be sent to Nick Hall-Patch, at nhp@ieee.org
All nominations must be received no later than January 31 2019.



BROADCASTING INFORMATION – Robert J Wien – 14051 Belle Chasse Blvd #415 – Laurel MD 20707

Email: wienbob@aol.com

Phone: 301-477-3733

Column Deadlines: Saturdays

DATE OF COLUMN: December 29 2018 Column data span: December 15-29 2018, Data courtesy of Stationintel.com, FCC database and member contributions.

CALL CHANGES

FREQ	OLD CALL	CITY OF LICENSE	NEW CALL
910	WAVL	Apollo, PA	WXJX
1050	KNGR	Daingerfield, TX	KNDF
1140	WNWF	Destin, FL	WPNS
1270	KVGH	Thousand Palms, CA	KGAY
1470	WPNS	Evergreen, AL	WNWF

FORMAT, SLOGAN AND SILENT STATUS CHANGES

NEW INFORMATION

FREQ	CALL	CITY OF LICENSE	NEW INFORMATION
590	WDIZ	Panama City, FL	was silent, now rock, adds slogan: "96 Rock"
850	WXPAA	Enola, PA	changes city of license to Enola and changes from construction permit to WXPAA
930	KOGA	Ogallala, NE	was unknown format, now classic country, adds slogan: "KOGA AM 930"
950	WIXZ	Steubenville, OH	was unknown format, now Westwood One Good Time Oldies, adds slogan: "Ohio Valley's Oldie's Station"
	WCLB	Sheboygan, TN	was sports, now hot adult contemporary, old slogan: "950 AM The Game", new: "Z 107.3"
1090	KSFE	Milan, NM	was silent, now religious teaching
	XEPRS	Tijuana, BCN	was sports, now new unknown format
1220	WSRQ	Sarasota, FL	old slogan: "Hitland 106.9", new: "LECOM Radio 1220"
	WREV	Reidsville, NC	now silent
1260	KSML	Diboll, TX	was talk, now Westwood One NBC Sports Network sports
1330	WCVC	Tallahassee, FL	now silent
1400	WWWS	Buffalo, NY	old slogan: "Solid Gold Soul", new: "Classic R&B 107.3"
1410	KOOQ	North Platte, NE	was sports, now new unknown format

1430	KLO	Ogden, UT	was talk, now adult standards, old slogan: "World Class Talk", new: "Unforgettable 1430"
1450	KTIP	Porterville, CA	was talk, now new unknown format
1500	WGHT	Pompton Lakes, NJ	was silent, now classic hits, adds slogan: "WALL Radio"
1580	WDQN	Du Quoin, IL	was silent, now adult contemporary, adds slogan: "Sunny 97.1"
	WVZN	Columbus, PA	changes city of license from Columbia to Columbus
1590	WCAM	Camden, SC	was adult standards, now classic country, old slogan: "Startime 1590", new: "Carolina's Country Classics"
1700	XEPE	Tecate, BCN	was sports, now new unknown format

MEMBER CONTRIBUTIONS

Kit Sage of Arvada CO sends along the following re KKCL-1550 Golden CO STA (Special Temporary Authority) status dated 12/18/18:

This finally showed up in the FCC DB. They applied for an STA. Explanation of STA

One of the tower guy wires was recently damaged by a snow plow. The licensee is requesting a temporary, emergency reduction of power to 8.75 watts at night which represents 25% of the station's licensed nighttime power.

Description of Circumstances

In the process of doing work on tower #2 (the nighttime tower), the licensee discovered that the tower was swaying and unstable because of damage to the guy wire base caused by a snow plow. Licensee is requesting a six month STA to operate at reduced, non-directional nighttime power on an emergency basis per section 73.1680(b)(1) of the rules. That will afford the licensee the licensee time to fully assess the damage and formulate a plan to repair and/or replace the damages to the tower and guy wires.

Ye editor passes on the following dated 12/27/18 while on vacation in the Harrisburg PA area:

Noted WXPB-850 Enola PA (see WXPB item in main section above) possibly on the air on 12/27/18 while listening on my Ford Fusion car radio while driving from my hotel in Grantville PA (22 miles NE of Harrisburg PA) to a restaurant east of Harrisburg with what sounded like oldies format (possibly in test or STA mode) and gave a slogan saying "Classics from the 60's, 70's and 80's" and playing songs like Bobby Vinton and "Little Red Riding Hood", strong signal but was approaching sunset and other stations were starting to come in including WKNR-850 Cleveland. They were NOT on the air on 12/26/18 when I drove by their transmitter on the property of WHP-580's transmitters which I stopped by the same day to take some photos. Enola is on NW side of Harrisburg. WXPB's transmitter is on south side of the property it appears per map on radio-locator.com. Will keep checking; can any Harrisburg area members confirm? Update 12/29/18: noted NOT on the air on 850 while leaving hotel for Maryland on car radio... 850 was dead.

Joe Miller of Desert Hot Springs CA sends along the following re KVGH-1270 Thousand Palms CA dated 12/27/18:

Finally had my chance to listen for a few more minutes this morning to confirm the major format change at KVGH. New ID is KK106, playlist is dance music and in their words "serving the LGBT community". City of license is Thousand Palms although main office is in Palm Springs (Note: they've been granted call letters KGAY, see call letter section above-ye ed).

Well, just got back from my trip to the Harrisburg PA area, we were up there for 3 nights in Grantville PA, had a good time and even made it to Hershey Park and the Chocolate World there! Well, it's the end of 2018 and 2019 is beginning, hope everyone has a great end of December and beginning of 2019, Happy New Year! Hope the New Year brings everyone new AM station loggings, and new experiences. 73's. **Bob Wien**



WESTERN DX ROUNDUP – Nancy Johnson – 2922 S Olivewood – Mesa AZ 85212-2923
Email: NancyJohnson@prodigy.net

WDXR DEADLINES: Jan. 4, Jan. 11, Jan. 18, Jan. 25, Feb. 1, Feb. 8, Feb. 15, March 1, March 15, March 29, April 12, April 26. Please use Eastern Local Time.

REPORTERS FOR THIS ISSUE:

- (RB) **Rick Barton**-9444 W. Newport Dr-Sun City AZ 85351 desertmoon_dxshack@inbox.com
Satellit 205/T.5000, RF-2200, SW-2000269 and Terk loop
- (BB) **Bill Block**-Prescott Valley AZ billblock@cableone.net
R8, Wellbrook ALA1530LNP
- (JP) **Jon Pearkins**-Edmonton AB jon@pearkins.com
Sangean PR-D15 on batteries with internal 200 mm ferrite bar
- (AWP) **Art Peterson**-Richmond CA awpeteronrpf@att.net
JRC NRD-545, RadioPlus Quantum ferrite loop, Bonito Boni-whip active antenna
- (MS) **Mike Sanburn**-PO Box 1256-Bellflower CA 90707-1256 mikesanburn@hotmail.com
Sangean DT 160

- *****
- 670 KMZQ **NV**, Las Vegas 12/26 1730 local spots, return to talk radio (Michael Medved, who will be dropped Jan. 1, 2019 due to excessive moderation). Good steady signal, alone on the channel at 2 hours before local sunset. By 1800 joined by KLTT and KBOI, all fighting it out. Monitored on SW-2000629 and Terk loop. (RB-AZ)
 - 950 KDCE **NM**, Espanola heard 12/22 at 0903 with "KDCE 950." (BB-AZ)
 - 1010 CBR **AB**, Calgary 12/18 0058-0112 weak or gone with KIHU dominant at all times, in all directions. (JP-AB)
 - 1030 KVOI **AZ**, Cortaro heard 12/26 at 0829 with "KVOI 1030 The Voice." (BB-AZ)
 - WBZ **MA**, Boston 12/24 0104 live ID ending traffic report after local news, alone and clear while surprisingly easy to completely null KTWO, a rare situation here. (JP-AB)
 - 1120 KMOX **MO**, St. Louis 12/26 2215 man with "KMOX" right on the tune-in, which is good luck for a change on a Murphy's Law week (station ID-wise). Talk show, and over KANN mostly nulled out with the loop (RF-2200). (RB-AZ)
 - 1210 KHAT **WY**, Laramie 12/27 0600 new logging, finally caught top of hour ID atop frequency after months of trying. Mentions of FM and auto spot touting 100,000-mile warranty, back into country music. (MS-CA)
 - 1260 KTRC **NM**, Santa Fe 12/28 0800 ID by man "12-60 and 103-7 FM" to network news. Very solid, strong over the channel on Satellit 205. (RB-AZ)
 - 1520 ?KMPG? **CA**, Hollister reported off several months ago, is back on, noted 12/27 1745-1815, still in Spanish. Failed to give English ID at top of hour, but finally had a local spot with 408 area code phone number. When approaching sunset, some QRM from KKZZ. Presume still with same call letters, but I cannot confirm that since they did not state them. (AWP-CA)

Happy New Year everyone! I hope that you all have a great 2019. – Nancy 1/15 1900



CENTRAL DX ROUNDUP – John C Johnson – 2922 S Olivewood – Mesa AZ 85212-2923
Email: John_Johnson@prodigy.net CDXR reports ONLY: cdxr@ircanonline.org

RIDING GAIN

- [EB-MO] **Eric Bueneman**, Hazelwood MO NUIHEric@gmail.com
CountyComm GP-5/SSB Ultralight receiver, Grundig AN-200 tunable loop, Yaesu FRG-7, Worcester Space Magnet II
- [GH-IL] **Greg Harris**, Park Forest IL wdx9khy@sbcglobal.net
FRG100, Quantum Loop

DOWN THE DIAL

- 580 KJMJ **LA**, Alexandria. 12/25 fair signal over WIBW, XEMU, ACI from KFNS 590. 0422 noted with the Holy Rosary broadcast into Christmas music at 0438. [EB-MO]
- 610 WTEL **PA**, Philadelphia. 12/23 fair to poor signal, mixing with KCSP, KDAL. 0444 noted with promos, "Six-Ten ESPN Radio" ID, "We are Six-Ten ESPN" mention in promo, local spots into *ESPN Sports Center All Night*. [EB-MO]

- 920 KLMR **CO**, Lamar. 12/23 fair to poor, mixing with other stations. 0454 with The Clark Howard Show, local spots, "News radio Nine-20 KLMR" ID. [EB-MO]
 1010 WMOX **MS**, Meridian. 12/26 fair to poor signal, mixing with CFRB, WINS, WPCN. 0531 noted with local spots, "AM Ten-Ten WMOX" ID. [EB-MO]
 1040 CKST **BC**, Vancouver. 12/23 fair to poor signal in WHO null; apparently on day pattern 0502 noted with ESPN update, "ESPN Radio" mention, "TSN Ten-40" ID into *ESPN Sports Center All Night*. [EB-MO]
 1070 KNX **CA**, Los Angeles. 12/27 fair signal, mixing with CHOK, KHMO, WFNI. 0241 with local and state news, "KNX Ten-70 news radio" ID. [EB-MO]
 1220 WHKW **OH**, Cleveland. 12/27 fair signal, mixing with WLPO, WSLM. 0529 noted with station promos, "The Word" ID. [EB-MO]
 1230 WIBQ **IN**, Terre Haute. 12/27 fair to poor signal, mixing with WFXN and other stations. 0352 poked through with "The Talk Station, 12-30, 14-40 and 97-point-Nine" ID. [EB-MO]
 1350 WCMP **MN**, Pine City. 12/27 fair to poor signal over KRNT. 2113 noted with Classic Hits format, "Pine hits 106-point-Five" ID. [EB-MO]
 1370 KWRT **MO**, Boonville. 12/26 fair to poor signal over KDTH, WSPD and other stations. 0604 noted with agricultural news from the Brownfield network, local spots, Country format and call letters. [EB-MO]
 1420 WOC **IA**, Davenport. 12/27 fair. 01:05 with male announcer with "WOC Weather..." [GH-IL]
 1620 WTAW **TX**, College Station. 12/25 good to fair signal over KOZN, Cuba. 0445 noted with Christmas music, *An American Christmas* mention, local spots, "16-20 WTAW College Station, Bryan" legal ID at 0500. [EB-MO]

FLASHBACK

50 Years Ago – January 4 1969 issue of "DX Monitor" ... **Bill Migley** of Lancaster OH said he logged 14 Venezuelan stations in a 10-minute period on December 2nd ... **Rick Evans** of Gary IN logged WPNO 1530 Auburn, Maine ... **Paul S Lotsof** of Tempe AZ mentioned he was in the studio during a recent KRIZ DX Test. He said the test was a failure as the station received only one reception report ... **Craig Cook** of Milwaukee WI logged 20 new stations on Monday Morning December 23rd. // **25 Years Ago – January 1 1994** issue of "DX Monitor" ... **Mike Sanburn** of Bellflower CA logged KQWB 1550 as a direct result of being in the DX Contest ... **Elliot R Straus** of Toms River NJ logged 5 news stations in one hour recently ... **Gary Larson** of Burbank CA recorded the KLAC 12/5 format change.

OPEN MIKE

Thanks go out to Eric and Greg for this week's column. The KRIZ DX Test Paul conducted 50 years ago was easily heard in Sheridan, Wyoming. I still have a recording of the test. Not sure if I was the only one that sent a report or not. Nancy and I hope you all had a wonderful Christmas and that 2019 will be a great year filled with DX. This column was typed 12-28-18. 73, John



DX WORLDWIDE/TROPICAL BAND DX – Brandon Jordan – PO Box 338 – Rossville TN 38066
 Email: dxww.irca@gmail.com all times UTC

Deadline – Monday 1200 UTC.

*** TRANS-ATLANTIC DX ***

- 702 **UnID** DEC 25 0034. Poor with an old man carrying on (an interview?), some sort of stringed instrument like a guitar at 0055, and then male chanting (Koranic?)0101. The same program was heard on SDRs in Ukraine and Russia, but not in Sardinia, so strongly suspect this was Iran external service rather than Algeria. However, Mauno Ritola said Iran had an anthem at 0100 which I didn't hear at 0101, so this remains a mystery. [NHP-BC]
 864 **EGYPT** Holy Koran Program, Santah. DEC 23 0350 – Good with Koran recitation, enough strength to start subduing domestic splatter. [NHP-BC]
 1098t **IRAN** IRIB World Service, Zabol. DEC 24 1530. Fair with piano music, man talking slowly, 3 ascending chimes typical for Iran domestics; completely unexpected, to say the least, especially in the morning. WRTH has no external listing for this time, so relaying a domestic service? [NHP-BC]
 1386 **LITHUANIA** Radio Baltic Waves/Radio Liberty, Viesintos. DEC 23 0250 – Fair with Russian talk by man. [NHP-BC]
 1539t **UNITED ARAB EMIRATES** Asianet Radio, Al-Dhabbaya. DEC 24 1518 – Indian influenced pop music and at various times later; good at 1547 with man in UnID language; Malayalam? [NHP-BC]
 1575 **UNITED ARAB EMIRATES** Radio Farda, Al Dhabiya. DEC 25 0028 – Poor with weak piano music parallel to Farda webstream, during a fade down in the Iranian jammer. [NHP-BC]

*** TRANS-PACIFIC DX ***

- 531 **AUSTRALIA** 4KZ, Innisfail. DEC 26 1459 – Fair with commercial, followed by "National news on 4KZ" by man at 1500. [NHP-BC]
 567 **AUSTRALIA** 4JK, Julia Creek. DEC 28 1525 – Poor with man and woman talking //612. [NHP-BC]
 657 **DRP KOREA** Pyongyang, Pyongyang BS. DEC 23 1400 – Poor with higher-pitched North Korean 3+1 time pips. They were the only recognizable signal at the top of the hour (a few of the high-powered Japanese and South Korean stations were barely audible a few minutes earlier). Relog. [TRH-CA]
 774 **JAPAN** JOUB, Akita, NHK2. DEC 17 1400 – Poor with usual NHK time pips. Relog. [TRH-CA]
 850t **ALASKA** KICY, Nome. DEC 17 0703 – Faded up under KOA (which is barely audible on this SSE/NNW antenna) after XEMIA faded out. Man who sounded like a pastor gave the history of "Away in a Manger" then played the song. This was almost surely KICY running the "Songs in the Night" program from Moody Radio. Nome is almost exactly on the main beam of this antenna (332 degrees vs. 341 degrees antenna angle) and half of it is water path. KHHO is conservative talk and sports, so have to think this was needed KICY. I have sent an Email to Moody Radio inquiring about the content of "Songs in the Night" that weekend, to see if it matches what I heard. [TRH-CA]
 873 **JAPAN** JOGB, Kumamoto, NHK2. DEC 17 1400 – Very weak with NHK time pips. Relog. [TRH-CA]
 972 **REP KOREA** HLCA, Dangjin. DEC 17 1400 – Weak with KBS pips, but faded up a minute later with fairly good audio. Relog. [TRH-CA]
 1422 **JAPAN** JORF, Yokohama. DEC 29 1625 – Good with woman in Japanese, briefly very clear. [NHP-BC]

*** PAN-AMERICAN DX ***

- 530 **CUBA** CMBQ, *Radio Enciclopedia*, Villa María, Ciudad Habana. DEC 17 0659 – Easy listening music, usual pre-recorded female announcer. Relog. [TRH-CA]
CUBA CM--, *Radio Rebelde*, multiple locations. DEC 17 0700 – Familiar 9-note interval signal //670, 710, 1180. This antenna is aimed almost perpendicular to Cuba. Relog. [TRH-CA]
 540 **MÉXICO** XETX, *La Ranchera de Paquimé*, Nuevo Casas Grandes, Chih. DEC 20 1333 – plugging now being also on FM (90.5). New. IRCA Mexican Log says per IFT it will be staying on AM; as usual manages to dominate 540 here around SRS. [GH-OK]
 560 **MÉXICO** XEMX, *Sol 89.7 FM*, Cihuatlán, Jal. DEC 23 0614 – Tropical-influenced pop music //web stream, "Sol 89.7 FM" slogans. New, JAL #26, Mexico #312, station #1451 from home. (NOTE: although this station serves the Manzanillo, Colima market, I think it may actually still be licensed to the suburb of Cihuatlán, which is in Jalisco. They do not seem to run a national anthem at 6am or Midnight local time). [TRH-CA]
UnID DEC 17 0707 – Station under KBLU and KLVJ playing instrumental music suddenly went into an orchestral version of the Mexican anthem about 15 seconds before my recording ended. Timing would strongly suggest XEYO, but this sounds like the version of the anthem I have heard on XESRD in the mornings. [TRH-CA]
 580 **MÉXICO** XEMU, *La Rancherita del Aire*, Piedras Negras, Coah. DEC 17 0700 – Mixing with KMJ and the mystery Spanish language signal with intermittent signal (see XEAV log – I'm guessing this was KSAZ) with full ID and mention of web site www.rancherita.com.mx. Relog. [TRH-CA]
MÉXICO XEAV, *Canal 58*, Guadalajara, Jal. DEC 17 0601 – Under a louder Spanish language station whose signal was having serious problems (audio cutting in and out a couple times per second) with slightly slow tempo children's choral version of Mexican anthem. Relog. [TRH-CA]
 590 **MÉXICO** XEPH, *La Sabrosita*, México, DF. DEC 17 0604 – Faded up suddenly over KTIE and XEGTO with Mexican anthem (fast adult choral version) and back to regular tropical format. When I found this on my recording, I went back outside the next hour and caught them //web stream (substantially out of synch, maybe as much as a minute) with tropical music.
 +DEC 23 0559 – Female announcer with at least two "sabrosita 5-90" slogans, into the same version of the anthem as previously noted. New, DF #23, Mexico #309, station #1446 from home. [TRH-CA]
MÉXICO XEGTO, *Hits 95.9 FM*, León, Gto. DEC 17 0559 – End of Suprema Corte program, then straight into Mexican anthem (children's choral, short version) and back to regular AC format. When I found this on my recording, I went back outside the next hour and caught them //web stream with AC music. New, GJTO #7, Mexico #308, station #1445 from home. I have been chasing both of these stations since before XEBH left AM several months ago. There seemed to be a third Mexican station in there that I couldn't account for. It wasn't XEE (not //web stream), and that seemingly leaves only XEFD which is far off the beam of this antenna, but perhaps not impossible given that several Cubans and Monterrey stations like XEFB-630 were coming in on this antenna tonight. [TRH-CA]

- 620 **MÉXICO** XENK, *Radio 6-20 AM*, México, DF. DEC 23 0558 – Faded up under semi-local XESS with high choral version of Mexican anthem already in progress. New, DF #24, Mexico #313, station #1452 from home. [TRH-CA]
- MÉXICO** XEPBGJ, *Jalisco Radio C7*, Guadalajara, Jal. DEC 17 0600 – Suddenly overtook XEFB with slightly slower tempo children's choral version of Mexican anthem, followed by 6-note doorbell theme (C-E-G, G-C-E), then back to overnight classical music program. Relog. [TRH-CA]
- MÉXICO** XEFB, *La FB*, Monterrey, NL. DEC 17 0557 – Instrumental version of Mexican anthem over KSLR. As they ran their pre-recorded ID (I could hear the mentions of Monterrey, Nuevo Leon and broadcasting 10kW 24 hours a day – two days later I recorded this exact same ID on their web stream), they were drowned out by XEPBGJ. New, NL #13, Mexico #310, station #1449 from home. [TRH-CA]
- 640 **MÉXICO** XEJUA, *La Caliente 6-40 AM*, Ciudad Juárez, Chih. DEC 17 0700 – Under KFI with ID and children's choral version of Mexican anthem. Relog. [TRH-CA]
- 660 **MÉXICO** XEEY, *La Caliente 102.9*, Aguascalientes, Agua. DEC 23 0600 – Under KTNN (surprisingly no sign of KGSV tonight) with children's choral version of Mexican anthem. Full AM/FM ID about 3½ minutes later. The odd spelling of "Kaliente" appears to be to distinguish it from the "La Caliente" gruperá format from Grupo Multimedios. Relog. [TRH-CA]
- MÉXICO** XESJC, *KVOZ*, San José del Cabo, BCS. DEC 17 0700 – Under KTNN (still no KGSV) with call letter ID. Interestingly there didn't seem to be a Mexican anthem immediately before or after this ID. Relog. [TRH-CA]
- 670 **CUBA** CM--, *Radio Rebelde*, multiple locations. DEC 17 0605 – Song //530, 1180 with very obvious echo (a full second late) between 2 or more signals. The second one is new, Cuba #33, station #1448. [TRH-CA]
- 700 **MÉXICO** XEDKR, *Radio Red*, Guadalajara, Jal. DEC 17 0659 – Fair signals, surprisingly on top of channel with ad for Nutcracker Suite performances at the national auditorium in Mexico City, male announcer "La Red le informa" into network newscast followed by long "Radio Red" jingle and promos. Mentions FM 92.1 in Mexico City. Another Spanish language station and regular pest KALL were way underneath. Relog, but only heard once or twice before. [TRH-CA]
- MÉXICO** XEETCH, *LV de los Tres Rios*, Etchojoa, Son. DEC 17 1359 – Virtually alone on channel with interesting indigenous music, mentions of Sistema Radiodifusoras Culturales Indigenistas by male and female announcers. Rarely in this well. Relog. [TRH-CA]
- 710 **CUBA** CM--, *Radio Rebelde*, multiple locations. DEC 17 0700 – 9-note Rebelde attention signal clearly audible from at least two different transmitters about a second and a half apart. //530, 1180. The second one is new, Cuba #32, Station #1447. [TRH-CA]
- 790 **MÉXICO** XENT, *Radio Fórmula La Paz*, La Paz, BCS. DEC 17 0657 – Radio Fórmula programming as usual, but instead of running the children's choral version of the Mexican anthem from the main Radio Fórmula feed just before Midnight CST, they ran it at exactly Midnight local time (MST). I've noticed this on one or two other Radio Fórmula stations lately. Also, the program they were running after local Midnight said it was originating from (XERFR-FM) 103.3 FM, as opposed to XERFR-970. Relog. [TRH-CA]
- 820 **MÉXICO** XEBA, *La Consentida*, Guadalajara, Jal. DEC 23 0601 – Under XEABCA with uptempo adult choral version of Mexican anthem, "consentida" slogans. Relog. [TRH-CA]
- 880 **MÉXICO** XEAAA, *Radio Mujer 92.7 FM*, Guadalajara, Jal. DEC 17 0600 – High choral version of Mexican anthem, under KKMC and KCMX. This is the last Mexican station left on 880 AM (at least until the CP for XECHEP-880 Chihuahua comes on). Formats have been swapped between the 880 and 1040 stations, presumably because XEAAA has an FM but XEBBB does not (ie, they moved the leased Catholic programming to the station which didn't get an FM allocation). Relog. TRH-CA]
- 900 **UnID** DEC 23 0602 – While XEW was playing the national anthem, another station faded up with a male announcer in Spanish. He seemed to mention "su estación" and partial call sign "XH..." before an ill-timed fade. This would almost have to be needed XEOK, but I heard nothing that sounded like Radio Disney programming or their main slogan "la radio que te escucha." They also did not run a Mexican anthem. [TRH-CA]
- 940 **UnID** DEC 17 0707 – Children's choral version of Mexican anthem under KFIG in massive XEKAM-950 IBOC slop (XEKAM runs IBOC 24/7 except during the National Hour and occasionally other times on evening weekends). Normally on this wire I get XERLA, but I have yet to hear them running the anthem around local Midnight (they do occasionally run the long children's choral version around 6am, so it could well be them, but I suppose it could also have been XEMMM coming out of the National Hour in Pacific time). [TRH-CA]
- 970 **MÉXICO** XERFR, *Radio Fórmula*, México, DF. DEC 23 0559 – Children's choral version of Mexican anthem (as used on all Radio Fórmula outlets) //XEMON-1370. Relog, but fairly rare here. [TRH-CA]
- 1000 **MÉXICO** XEOY, *Mil AM*, México, DF. DEC 23 0601 – Faded up under KOMO/KCEO with slightly uptempo adult choral version of Mexican anthem. My local XEC-1310 appears to have stopped relaying XEOY recently. [TRH-CA]
- 1010 **MÉXICO** XEHL, *W Deportes*, Guadalajara, Jal. DEC 17 0601 – Faded up under KCHJ and KIHU (which was running day rig again) with adult choral version of Mexican anthem //XEX-730. Relog. [TRH-CA]
- 1050 **MÉXICO** XEBCS, *La Radio de Surcalifornia*, La Paz, BCS. DEC 17 0657 – Blasting in with US rock oldies, adult choral version of Mexican anthem (this is a change; they previously ran the children's choral version), followed by long version of BC Sur state anthem, which I have also never heard them run before. Usual full ID mentioning FM 99.1, then into Sinaloa-style regional Mexican music. Relog. [TRH-CA]
- 1070 **MÉXICO** XESP, *Rock and Soul 91.9*, Guadalajara, Jal. DEC 17 0600 – Under KNX with children's choral version of Mexican anthem. Relog. [TRH-CA]
- 1100 **MÉXICO** XETGO, *Radio Cañon*, Tlatenango, Zac. DEC 17 0600 – Faded up under KFA/KWWN with slightly slow tempo children's choral version of Mexican anthem as logged at the Border Inn. New, ZAC #11, Mexico #311, station #1450 from home. [TRH-CA]
- 1150 **MÉXICO** XEAD, *Metrópoli*, Guadalajara, Jal. DEC 23 0559 – This station's unusual slow time pips (2 seconds apart) were easily heard through XEUAS and KEIB. Faded up a minute later with Notisistema news in progress. They eventually got around to running their slightly uptempo adult choral version of the Mexican anthem at 0606. Relog. [TRH-CA]
- MÉXICO** XEUAS, *Radio UAS*, Culiacán, Sin. DEC 17 0657 – Steady signal under KEIB with overnight classical music program and full (4:40) children's choral version of Mexican anthem. Relog. [TRH-CA]
- 1180 **CUBA** CM--, *Radio Rebelde*, multiple locations. DEC 17 0700 – 9-note Rebelde attention signal heard from at least 2, and possibly 3 transmitters, the third one coming a second or so after the first 2. If I were a bit more sure about the third signal, it would be new. Relog. [TRH-CA]
- 1190 **MÉXICO** XEWK, *W Radio*, Guadalajara, Jal. DEC 17 0600 – Mexican government PSA, "W Radio" slogan, into slightly uptempo adult choral version of Mexican anthem. Relog. [TRH-CA]
- 1300 **MÉXICO** XEXW, *La Bestia Gruperá*, Nogales, Son. DEC 23 0600 – Mixing with XEP, with pre-recorded IDs by female announcer ("la bestia gruperá" followed by male announcer "1300 AM." They really seem to be getting out better this year. Not sure if it was this station or XEJL that played the adult choral version of the Mexican anthem an hour later. Relog. [TRH-CA]
- 1310 **MÉXICO** XETIA, *Radio Vital*, Tonalá, Jal. DEC 17 0600 – Nice signal through local XEC's open carrier with ID by female announcer: "Usted escucha X-E-Tia AM, Radio Vital, desde Guadalajara, Jalisco, Mexico" (this was preceded and followed by a brief oboe theme). XEC returned in mid-sentence a few seconds later with brokered religious programming. [TRH-CA]
- UnID** DEC 23 0600 – Children's choral version of Mexican anthem audible through local XEC's open carrier, under XETIA after XETIA's anthem ended. XEC came back on the air before it finished. This is almost certainly XEHIT, logged at the Border Inn but still needed from home. XETIA was still audible even after local XEC came back on. [TRH-CA]
- 1370 **MÉXICO** XEPJ, *Radio Ranchito*, San Pedro Tlaquepaque, Jal. DEC 17 0602 – Distinctive slow orchestral version of the Mexican anthem (other stations in this ownership group, such as XEDKT-1340, use this version, which slows down even more at the end). At the top of the following hour, I caught most of an ID, including very clear mentions of their slogan and location, so they are 24h now. Relog. [TRH-CA]
- 1380 **MÉXICO** XECO, *Romántica 13-80*, México, DF. DEC 17 0557 – Children's choral version of Mexican anthem in progress, "Romántica 13-80" slogan, Mexican government PSAs. Caught a nice full ID the following hour with call letters, slogan, studio location, phone numbers, and mention of 50kW. Announcer wished listeners "Feliz Navidad," and ended the announcement with Santa Claus "Ho ho ho!" Relog. [TRH-CA]
- 1410 **MÉXICO** XEKB, *Canal 14-10*, Guadalajara, Jal. DEC 17 0600 – Faded in during ID, mentioned studio address Avenida Francia 1783, Guadalajara, into fast choral version of Mexican anthem (possibly the same version used on XEBS). Relog. [TRH-CA]
- 1440 **MÉXICO** XEEST, *Quiéreme 14-40*, México, DF. DEC 17 0557 – Spanish religious programming, possible mention of Grupo Siete. Children's choral anthem at 0601 exactly as heard on XEEST's web stream recently. I would normally expect to hear XEABCJ on this antenna, but they run a gruperá program at this hour, and have not been running an anthem at Midnight recently. (When they do run one, it's usually about 5 minutes after the hour. XEABCJ's web stream sounds terrible this week; I wonder if it's actually going out over the air like that?). XEEST's format is an odd mix of talk, religious, and motivational programming. They temporarily moved this format to XEINFO-1560 (which had been silent for 9 years) from May-October 2017 before returning to 1440. According to one of the churches whose programs run on XEEST, this move was temporary to allow XEEST to upgrade their facilities. Speaking of XEINFO-1560, they apparently re-emerged in November as XHINFO-105.3, the only FM migration allocation granted in Mexico City, despite seemingly being one of the least deserving stations. They appear to have launched the FM ("Aire Libre" – see <http://airelibre.fm/>), seemingly without ever restarting the AM and going through a simulcasting period. XEEST is new, DF #25, México #314, station #1453 from home. [TRH-CA]

- 1480 **MÉXICO** XEJZ, *Simplemente Supérate*, Tonalá, Jal. DEC 17 0601 – Distinctive slow orchestral version of the Mexican anthem (other stations in this ownership group, such as XEDKT-1340, use this version, which slows down even more at the end). Relog. [TRH-CA]
UnID DEC 23 0600 – High choral version of Mexican anthem barely audible through massive XERCN-1470 slop. It sounded like high adult voices in the chorus, but it was hard to tell through all the slop. If it was a children's chorus, then this was likely needed XETKR. The only other possibility is XEVIC, also needed, but even less likely on this antenna. [TRH-CA]
- 1500 **MÉXICO** XEDF, *Radio Fórmula*, México, DF. DEC 23 0557 – Alone on the channel tonight with full ID, promos, and children's choral version of Mexican anthem from Radio Fórmula network feed. Conditions sure seemed auroral this week! Where was KSJX? [TRH-CA]
- 1510 **MÉXICO** XEQI, *Opus 15-10 AM/Radio Nuevo León*, Escobedo, NL. DEC 17 0601 – Instrumental version of Mexican anthem, ID by male announcer. Relog. [TRH-CA]
- 1520 **MÉXICO** XEEH, *La Primera*, San Luis Rio Colorado, Son. DEC 17 0557 – Regional Mexican music, slogan-ID "La Primera, San Luis Rio Colorado." Lately I've been hearing KMPG (cheating daytimer staying on all night) on this channel instead of XEEH. Relog. [TRH-CA]
- 1530 **MÉXICO** XEUR, *Éxtasis Digital*, México, DF. DEC 23 0558 – Way under KFBK with children's choral version of Mexican anthem, ID by female announcer. Relog. [TRH-CA]
- 1560 **UnID** DEC 17 0601 – Suddenly appeared over KNZR and XEPE-1700 image (the Perseus picks up a mixing product of XEUT-1630 and XEPE-1700, two of my closest locals) with start of children's choral version of Mexican anthem. This could be unneeded XEJPV, unneeded XELAC, or needed XECHZ, all of which might air this version at this hour. I did not hear XECHZ's piccolo/marimba theme, or anything else, after the anthem, which would tend to point to XELAC (they go off the air right after the anthem). A few seconds before this station faded out, a third Spanish station briefly faded up before KNZR eventually took over. I think the third station might have been XEJPV. [TRH-CA]
- 1590 **MÉXICO** XEVOZ, *Arroba FM*, México, DF. DEC 23 0557 – Alone on channel with children's choral version of Mexican anthem in progress, "Arroba FM" slogan, followed by what sounded like a Mexican government PSA (audio became distorted for some reason), ID by female announcer, and pop music. Relog. [TRH-CA]
- 1600 **MÉXICO** XEGEM, *Radio Mexiquense*, Metepec, Mex. DEC 17 0600 – Faded up under KGST with adult choral version of Mexican anthem (multiple verses) in progress. A few minutes later, they ran the Himno Estatal del Estado de México (state anthem). Couldn't find any of the parallels on 1080, 1250, or 1520 (1520 may have moved to FM). Relog. [TRH-CA]
- 1650 **MÉXICO** XEARZ, *Zer Radio 16-50*, México, DF. DEC 23 0558 – Barely audible under KBJD/KSVE with children's choral version of Mexican anthem. Relog. [TRH-CA]
- 1700 **MÉXICO** XEPE, *La Tremenda* (temporarily?), Tecate (nominal – really Tijuana), BCN. DEC 17 0557 – Since December 12, this station (one of my closest locals and biggest pests) has been relaying co-owned XESDD-1030 (Spanish language political speeches, brokered religion, and who knows what else), reportedly due to Broadcasting Corporation of the Americas failing to make the rather exorbitant lease payments for XEPRS-1090, XEPE-1700 and XHPRS-105.7. (Oddly, XEPRS and XHPRS have different owners; the owner of XEPRS has allowed BCA to keep broadcasting sports talk "mighty 10-90" on XEPRS, but reportedly wants to either find a new lease client, or sell the station if anyone will give their asking price \$11M). [TRH-CA]

*** TROPICAL BAND DX ***

- 2850 **DPR KOREA** KCBS, Pyongyang. DEC 19 1330 with usual patriotic music making it thru this morning. Fair/Good. [RB-AZ]
 3480 **REP KOREA** Voice of the People, Kyonggi-do Koyang. DEC 24 1200 – Man in monologue, Korean language, and over DPRK jammer. Good. [RB-AZ]
 3945 **JAPAN** Radio Nikkei 2, Chiba-Nagara. DEC 24 1200 – pop/rock vocal versions of popular Christmas songs, female presenter in Japanese – Fair/Good over some Amateur Band CCI. [RB-AZ]
 4055 **GUATEMALA** Radio Verdad, Chiquimula. DEC 24 1245 – Instrumental Christmas music. Unusually good reception. Excellent. [RB-AZ]
 4885 **REP KOREA** Echo of Hope, Seoul. DEC 19 1345 – Madonna-like pop music, female presenter in Korean. Noted //3985. Very Good. [RB-AZ]

CONTRIBUTORS

- RB-AZ **RICK BARTON**, Peoria AZ
 RS SW-2000629, Satellit 750 with longwire
- TRH-CA **Tim Hall**, Chula Vista CA
 Perseus SDR-IQ, 600 ft. unterminated beverage aimed SSE/NNW
- NHP-BC **NICK HALL-PATCH**, Victoria BC nhp@ieeee.org
 AOR AR7030, RFSpace SDR-IP; RFSpace SDR-14 running DX Fishbarrel program; north FLG-100 antenna, west FLG-100 antenna, 1m indoor box loop, 14m sloper, DXP-3 phasing unit
- GH-OK **GLENN HAUSER**, Enid OK
 DX-398 with internal antenna only or PL-880; NRD-545 with ALA-330S inside E-W or inside random wire N-S; Nissan stock caradio as specified; ICR-75 E-W longwire.

Many thanks for the week's contributors, especially Tim's massive XE logs! Happy New Year! 73 and Good DX, Brandon



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DXpedition #2 – December 29 2018, Marais Temps Clair Conservation Area, Black Walnut MO By Eric Bueneman (NØUIH)

For my second DXpedition, I took my radios to Marais Temps Clair Conservation Area, operated by the Missouri Department of Conservation, on December 29 2018. Located in eastern Saint Charles County about half way between Saint Charles and West Alton, it is in the farming community of Black Walnut, between Orchard Farm and Portage des Sioux. It is also about 15 miles NNW of Saint Louis. I set up in the parking lot of the conservation area's office on Island Road, about a mile off State Road H. I started around 1700 ELT, and continued DXing until 1830. Sunset came at around 1747 ELT; I was DXing under sunset skip conditions. Like the previous DXpedition, I used a General Electric Superadio III. I logged one Tropical Band station using a Tecsun PL-600 portable receiver with the 20-foot longwire that came with the receiver. All times are ELT.

DOMESTIC (US AND CANADA)

- 570 WNAX **SD**, Yankton – 1804 noted with local spots, "570 WNAX" ID into regional news. A good to fair signal was noted over KLIF.
 580 WIBW **KS**, Topeka – 1705 noted with local spots, "WIBW 580 and 104.9" ID into a talk program. A fair to poor signal was noted, mixing with WILL, splash from KFNS 590.
 720 WGCR **NC**, Pisgah Forest – 1708 noted with Southern Gospel music, EST time check, "Gospel Carolina Radio" ID; faded before 1715 sign-off. A good signal was noted over WGN with splash from KWRE 730.
 740 CFZM **ON**, Toronto – 1809 noted with Adult Standards and Oldies, "Great Big Zoomer Hits" mention. A good signal was noted over KRMG.
 800 CKLW **ON**, Windsor 1814 noted with weather forecast for Windsor into a review of Ontario weather events in 2018. A good signal was noted over KQCV.
 880 KRVN **NE**, Lexington – 1717 noted with *The Joe Kelly Show* and local spots. A fair signal was noted over WIJR and WCBS.
 990 CBW **MB**, Winnipeg – 1730 noted with Country and Folk tunes, talk about text messages, "CBC Radio One" ID. A fair signal was noted over other stations.
 1030 WBZ **MA**, Boston – 1735 noted with EST time check, local news, "WBZ News Radio 1030" ID into local spots. A good signal was noted over KCWJ, KFAY, KTWO.
 1060 KYW **PA**, Philadelphia – 1737 noted with sports report, mention of "Sports Radio 94 WIP", "KYW News Radio" ID, *Traffic on the Twos* promo and local spots. A good signal was noted over other stations.
 1480 KCZZ **KS**, Mission – 1753 noted with sports talk and highlights, "ESPN Deportes" mention into local spots in Spanish. A fair to poor signal was noted, mixing with WJBM and WLMV.
 1660 WQLR **MI**, Kalamazoo – 1757 noted with local spots, "1660 the Fan, WQLR Kalamazoo" legal ID. A good signal was noted over KWOD.

TROPICAL BAND DX

- 5025 **CUBA** Radio Rebelde CMBA Bauta, Ciudad de la Habana. 1658 noted with salsa music, ID and news in Spanish. A fair signal was noted.

DXpedition NOTES

The place where I set up was just a few miles from the three-tower array of KHOJ 1460. Until 1730 ELT, the station was operating on day pattern at a power level of 12,000 watts. The splash covered 1450 and 1470 when operating on day power. DX was heard on 1440 before 1730; semi-local WJBM was in on 1480. At 1730, KHOJ cut to 210 watts, and switched to night pattern. Marais Temps Clair is in KHOJ's null toward WMBD 1470 Peoria IL. WMBD was mixing with WVOL Berry Hill TN on 1470 after sunset; 1450 was the usual Graveyard mix. WKAM Goshen IN was heard underneath KHOJ on 1460. WBGZ 1570 Alton IL was in with a stronger signal than KHOJ, even on 74 watts night power. Even KFNS 590 Wood River IL had DX underneath; it was the usual competition: KXSP Omaha NE. Sunset skip conditions favored other parts of the Midwest, as well as the Northeast and Mid-Atlantic states, Ontario and Manitoba. Reception conditions on the shortwave bands favored the Americas. The temperature hovered around 32 F (0 C) that afternoon; I shut down just as snow flurries moved into the area; a far cry from the sunny skies and temperatures of 64 F (18 C) I experienced in November at Babler State Park in Wildwood. Maybe I'll go over to Illinois for my next DXpedition. 73 and good DX from NØUIH, The Florissant Valley Dial Twister.



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Deadlines: 1/7, 1/14, 1/21, 1/28, 2/4, 2/11, 2/18 and 3/4 (Anniversary Issue)

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Greetings. All times and dates strictly UT. Receiver: mostly DX-398 with internal antenna only or PL-880; NRD-545 with ALA-330S inside E-W or inside random wire N-S; Nissan stock caradio as specified; or IC-R75 with E-W longwire.

640, December 30 at 1334, dead air from KWPN Moore OK, as usual around this time on Sunday mornings, facilitating KFI talk and something else.

650, December 28 at 1906, weather and ID for "AM 650, KGAB", Rush theme. This is at the limit of groundwave on a quiet summer day, but now could as well be early skywave from Cheyenne WY. KLTT 670 Denver is always audible in daytime, noise level permitting.

1210, Sunday December 23 at 1416, 'Fox Football Fantasy' on Fox Sports Radio, which I have been noticing a lot lately on KGYN Guymon OK. Sibling station to 1480 KQAM Wichita KS and many others, website has same design: <http://stecklinecommunications.com/kgyn/> confirming that KGYN is on FSR for 18 hours Sundays 06-24 UT! But not fulltime. 1416 national adstring ends with one local insert for Fence Master in Cherokee (OK town well east of Guymon).

1480, December 23 at 1350, hard rap in Spanish, artificially sped-up vocalizations, obviously KBXD Dallas 50 kW day power overcoming KQAM Wichita; 1355 "Banda Trece 14-80 AM". So that's the latest incarnation for KBXD, the name formerly used by 1700 KKLK Richardson (which is very different now with TexMex music). As of August in the NRC AM Log, KBXD was brokered religion in the Voz Evangélica group. radio-locator.com still has it as Spanish religion.

Meanwhile I am hearing Jim Bohannon's voice underneath on KQAM, a time I would not expect him, but there he is on the schedule at 6-8 am CT Sundays: <http://stecklinecommunications.com/kqam/>

Trans-Atlantic JBA MW carrier search, December 25 from 0604: 531, 549, 558, 612, 621, 648, 666, 693*, 711, 774, 837, 846, 882, 909, 1017, 1044, 1089, 1107, 1215, 1413, 1512. *=strongest but still can't pull audio. I was encouraged to do this upon hearing a het upon 1090 without really trying.

Trans-Atlantic JBA MW carrier search, December 27 at 2306-2319. Again after first noticing a 1 kHz het upon 1090 without really trying: 531, 549, 621, 684, 774, 837, 882, 909, 999, 1044, 1053, 1089, 1215, 1413, 1431. This time I'm using the JRC with N/S inside short wire.

Trans-Pacific JBA MW carrier search, December 30 at 1320, not a full bandscan but checking some likely spots: 837 (maybe megawatt CNR5 in Fujian), while the major NHKs are not audible; 1098-west, surely Marshall Islands carrier. At 1329 now I have traces from the NW of NHK on 828, 774, 693, 594; and Korea South on 1566.

Until the next, best of DX and 73 de Glenn



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THE D-KAZ COOKBOOK

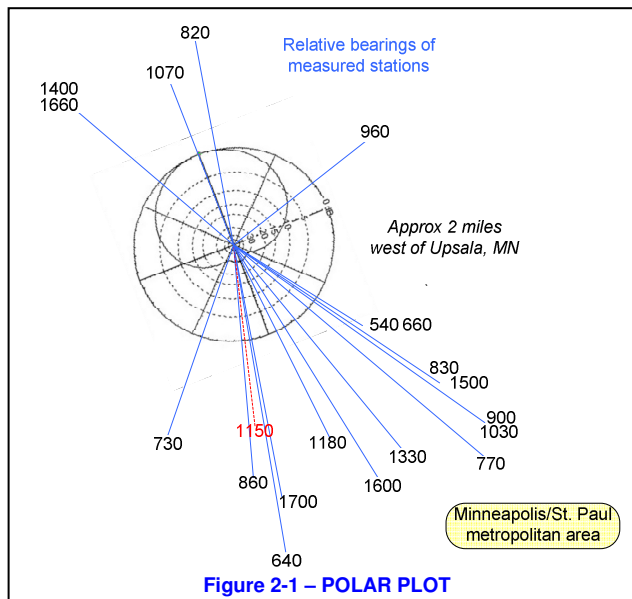
by Mark Durenberger

with input from Neil Kazaross and Nick Hall-Patch – 12/2018

SECTION TWO – During June and July 2018 we conducted a battery of D-KAZ performance measurements under controlled conditions. Our primary metric was "Front-to-Back" ("F/B"), or antenna directivity. We first compared a 170-foot D-KAZ to a 140-foot version, and then we deliberately perturbed the geometry of the 140-foot version, to see what happens when antenna wires are casually misaligned. Extensive recordings and loggings were made. We present our results informally below, presenting the measurements on tables for comparison.

At the end of this section, we discuss **non-routine D-KAZ applications**.

2018 MEASUREMENTS: The antennas were situated in a tree-lined, electrically-quiet location, well away from strong radio signals. The antenna line was 330/150 degrees (NW/SE). This orientation placed the backside null area toward densely populated areas with high-power radio signals ([Figure 2-1](#)).



Target stations were selected for their location and for signal reliability. Some of the initial targets had to be discarded, because when they were nulled, co- or adjacent-channel stations came up and got in the way... or the targets' nulled signals went too far down into the noise. The signals on a regional map are shown in Figure 2-2.

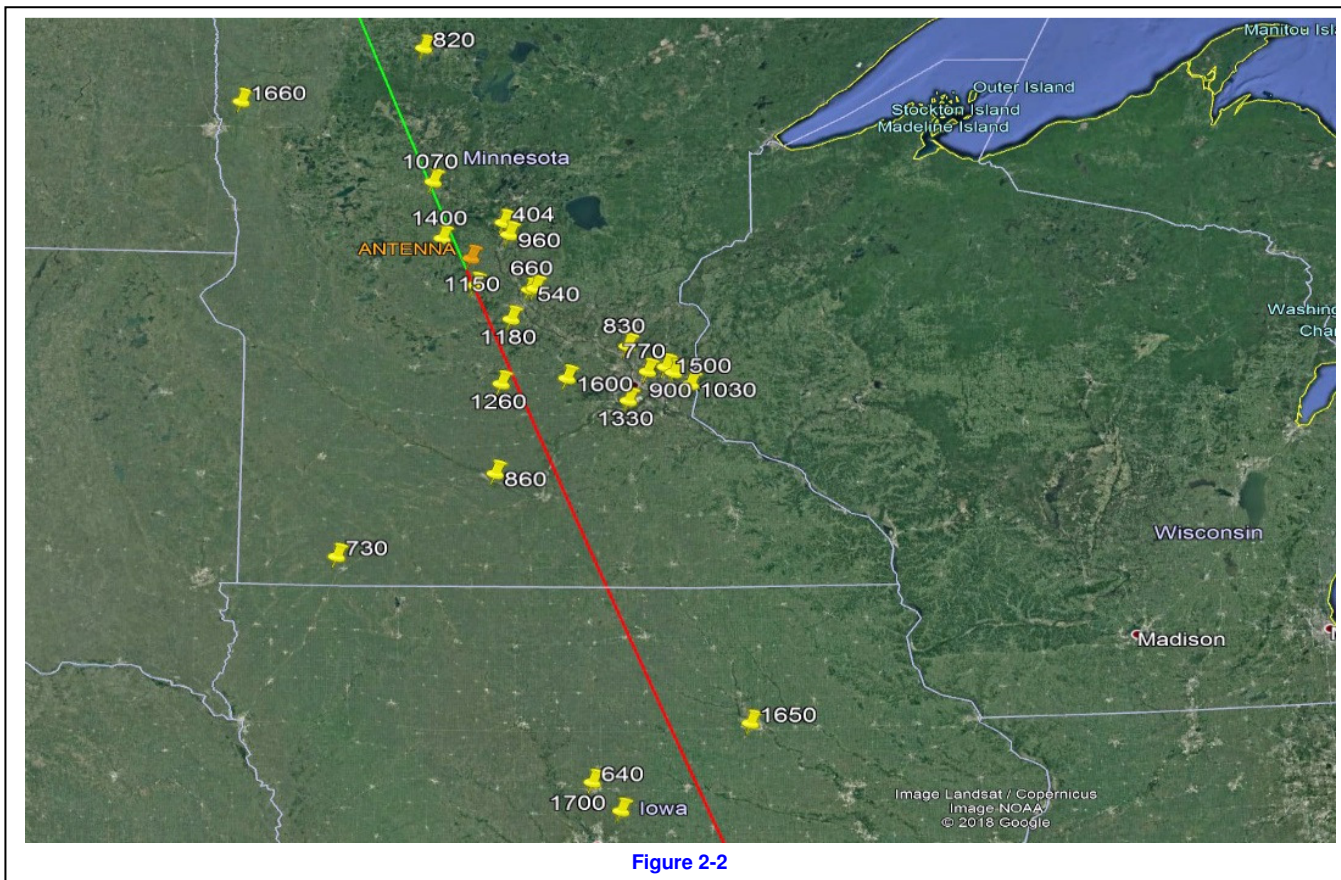


Figure 2-2

You'll note that most of the higher-frequency stations are a fair distance away, and that contributed to some mid-day skywave-ing... even in the middle of summer! We did our best to work around that but weren't always able to defend higher-frequency results.

The 170 ft. D-KAZ was built first. Once the 170-foot measurements were "in the can" we shortened the antenna to 140-feet along the same antenna line, re-adjusting the wires and the support post locations, for the shorter length. Measurements were made on two identical Perseus SDR receivers and full-bandwidth recordings were made for data verification and later retrieval. The lead-in and amplifier combination was that labeled as ~~DXE-GATS~~ in Figure 1-2, (Section One).

A. THE CASE FOR SINGLE-FREQUENCY NULLING: We first wanted to verify our earlier observations that only minor null-readjusting might be necessary once a representative signal had been nulled. Not only would that make DX-ing easier but it would simplify our data presentation. So we set out to prove that this 'single-null' concept was valid for our work.

Table 2-1 and Table 2-2 contain the results: the null-depths resulting from the 'one-at-a-time' nulling of test signals. You will see the null-depths resulting from a resistive nulling on each test station as well as that specific null's impact on the nulls of the other stations.

After each test signal was minimized, the signal levels on all other stations were recorded, before we moved on to the next test signal. After all signal levels were posted, we derived the null-depths by subtracting that station's residual signal level from its original signal level in the "w/no null" column.

	Signal	Signal	Null	Signal	Null	Signal	Null	Signal	Null	Signal	Null	VAR	
	w/no	after	depth	after	depth	after	depth	after	depth	after	depth	FROM	
	null	nulling	w/730	nulling	w/830	nulling	w/1150	nulling	w/1330	nulling	w/1500	AVG	
FREQ	@730	nulled	@830	nulled	@1150	nulled	@1330	nulled	@1500	nulled			
Value	dbm	dbm	db	dbm	db	dbm	db	dbm	db	dbm	db	db	
540	-51	-76	25	-76	25	-77	26	-77	26	-77	26	1	
640	-69	-97	28	-95	26	-98	29	-96	27	-98	29	3	
660	-34	-64	30	-64	30	-71	37	-72	38	-66	32	8	
730	-64	-93	29	-89	25	-92	28	-91	27	-92	28	3	
770	-61	-90	29	-97	36	-96	35	-98	37	-93	32	8	
830	-48	-74	26	-90	42??	-78	30	-81	33	-78	30	16??	
860	-58	-90	32	-85	27	-91	33	-91	33	-90	32	6	
900	-49	-79	30	-85	36	-80	31	-81	32	-80	31	6	
1030	-55	-82	27	-86	31	-84	29	-84	29	-86	31	4	
1150	-22	-50	28	-49	27	-52	30	-51	29	-51	29	3	
1180	-28	-57	29	-55	27	-62	34	-59	31	-60	32	7	
1330	-57	-81	24	-77	20	-81	24	-80	23	-81	24	4	
1500	-53	-74	21	-69	16	-70	17	-73	20	-72	19	5	
1530	-59	-75	16	-68	9	-73	14	-76	17	-76	17	8	
Average null depth			25.7	25.8			27.2			26.2			26.9

Table 2-1: 170-foot D-KAZ

	Signal w/no null	Signal after nulling @730	Null depth w/730 nulled	Signal after nulling @830	Null depth w/830 nulled	Signal after nulling @1150	Null depth w/1150 nulled	Signal after nulling @1330	Null depth w/1330 nulled	Signal after nulling @1500	Null depth w/1500 nulled	VAR FROM AVG
FREQ	Value	dbm	db	dbm	db	dbm	db	dbm	db	dbm	db	db
540	-55	-79	24	-76	24	-78	23	-77	22	-77	22	2
640	-73	-98	25	-96	25	-99	26	-98	25	-98	25	1
660	-37	-65	28	-68	28	-86	49	-75	38	-83	46	21
730	-68	-93	25	-90	25	-92	24	-92	24	-92	24	1
770	-65	-92	27	-95	27	-102	37	-100	35	-101	36	10
830	-52	-76	22	-85	22	-82	30	-85	33	-83	31	11
860	-61	-93	32	-89	32	-99	38	-93	32	-96	35	6
900	-54	-80	26	-89	26	-89	35	-97	43	-94	40	17
1030	-57	-82	25	-83	25	-84	27	-84	27	-84	27	2
1150	-25	-53	28	-55	28	-64	39	-60	35	-63	38	11
1180	-31	-60	29	-61	29	-79	48	-65	36	-71	40	19
1330	-59	-84	25	-87	25	-92	33	-94	35	-90	31	10
1500	-57	-80	23	-85	23	-87	30	-89	32	-86	29	9
1530	-60	-90	30	-87	30	-86	26	-93	23	-85	25	7
Average null depth		25.1		25.1		31.5		29.8		30.4		

Table 2-2: 140-foot D-KAZ (not as well-behaved)

Note the far right column displays the maximum variance from the average null at each frequency. This is useful in evaluating the use of a specific frequency as the 'set-and-forget' null.

The bottom-row Average null depth values in the table help you decide which frequency to choose for single-frequency nulling.

We believe a proper conclusion based on our Minnesota work is that a single-frequency null is valid. It's likely not possible to find a single channel null that represents the best minima across the Medium-Wave band, but you can do pretty well. If you have the choice, a higher-frequency channel is probably better; in our case 1150 was chosen because it's close to the antenna boresight and near the middle of the MW band.

This is a useful procedure for broad-band recording; leavened by Neil Kazaross' comment: "I find it useful when recording live to tweak the Vactrol to get a few dB more null on a freq. of interest... knowing that this small Rt tweak is unlikely to do any major damage elsewhere."

Nick Hall-Patch adds this: "A single null set-and-forget is good I would think. But position the antenna (if you can) so that the null (wide as it will be) knocks down the worst of the potential interference to your target area."

This 'single-null simplification' may expose us to questions regarding the validity of null-depth numbers, but we recorded each session and can provide more data on request.

Having made the point, we move on, using a single 1150-null as the data anchor where we could... and remembering too that our drill was about comparison, not absolute measurement.

SPECIFIC COMPARISONS – 170-foot to 140-foot D-KAZ ANTENNAS: You can use appropriate columns from the tables above to investigate certain relationships. For example, a comparison of the signal efficiency of the two antenna lengths can be taken from the two "signal w/no null" columns. Note the added length of the 170-foot D-KAZ not only improves low-end F/B but band-wide signal improvement is around 3+ db; the advantage decreasing slightly with the increase in frequency.

B. EFFECT OF MISALIGNMENTS: Next we embarked on several measurements of symmetry in the wire deployment of a 140-foot D-KAZ occurring when things weren't in good alignment. We observed the null-depth impact from unpurposeful misalignments of supports or wire runs.

The first asymmetry was **POLE MISALIGNMENT:** We deliberately skewed one of the support poles so its top was tilted about a foot from 'straight-up' alignment. That may seem like a lot, but without lateral guying of the typical fiberglass wind-pole, a shift like this can happen in a decent wind.

With the poles misaligned, maximizing null-depths required a good deal of individual re-nulling at each frequency. Not good. And even with individual nulling, we found the null-depths weren't as impressive. Here, our measurements produced uncertain results, so you won't see tabulated data although it's available on request. Instead, we observe that "a D-KAZ with misaligned support poles delivers unpredictable null-depths and makes difficult a single-frequency broadband-null." We suggest that D-KAZ support poles should at least be eyesight-aligned and lateral guy-supports should be used, orthogonal to the antenna axis.

Of course, all bets are off when winter arrives... ☺... as in Photo 2-1.



Photo 2-1: Kaz's backyard, November 2018, including lateral guy-supports

C. Let's move on to **END-WIRE TERMINATION**: Now we're interested in the impact on the 1150-null depth, from the way we terminate the antenna at the end-post insulator(s). In **Figure 2-3** are two ways to terminate the D-KAZ end-wires, "single anchor" and "split anchor".

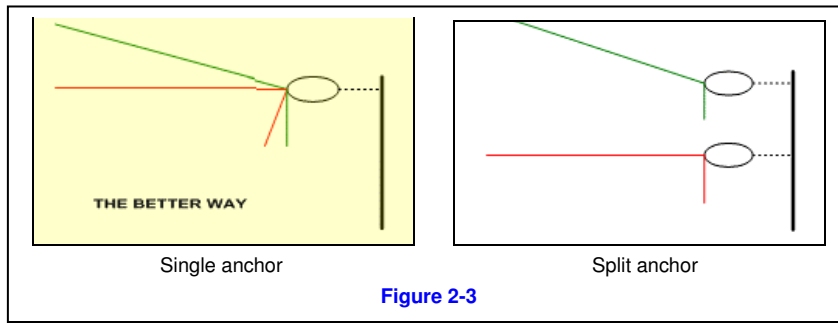


Figure 2-3

Null-depths observed using the two different end-wire terminations are in **Table 2-3** for both a 140-foot and 170-foot D-Kaz.

140-foot D-KAZ					170-foot D-KAZ						
		Single anchor		Split anchor				Single anchor		Split anchor	
		1150		1150				1150		1150	
		null		null				null		null	
		depth		depth				depth		depth	
FREQ		db		db	Loss	db		db		db	Loss
540		23		22	1	26		23		3	
640		26		23	3	29		25		4	
660		49		36	13	37		40		-3	
730		24		22	2	28		25		3	
770		37		32	5	35		35		0	
830		30		29	1	30		30		0	
860		38		43	-5	33		35		-2	
900		35		37	-2	31		29		2	
1030		27		27	0	29		27		2	
1150		39		39	0	30		29		1	
1180		48		43	5	34		33		1	
1330		33		29	4	24		24		0	
1500		30		29	1	17		19		-2	
1530		26		26	0	24		19		5	

Table 2-3

So, using a single tie-point DOES make a difference and, as usual, 'exceptions prove the rule.'

D. **CENTER CROSSOVER MISALIGNMENT**: For the effects of this deliberate misalignment we first measured null-depth with the bottom return-wires and crossover *level* and then we deliberately *lowered the center crossover height* by a few inches and re-measured. (We were skewing the relationship of the deltas, as could happen with a less-than-fastidious install). See **Figure 2-4**.

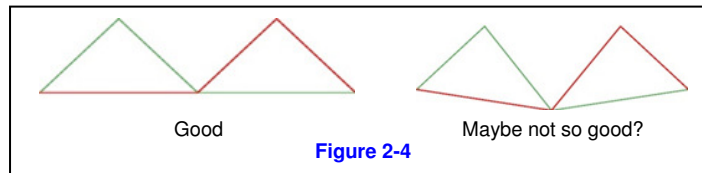


Figure 2-4

Results are in **Table 2-4**. The **Null cost** column is simply the difference between the two **Null depth** columns, and where an advantage was gained by misalignment, that value is shown in **blue**.

CALL	FREQ	Crossover "level" w/ wire run			Crossover moved "off-level"			Null cost
		No null dbm	1150 null dbm	Null Depth db	No null dbm	1150 null dbm	Null Depth db	
WXYG	540	-55	-78	23	-55	-77	22	1
WOI	640	-73	-99	26	-73	-96	23	3
WBHR	660	-37	-86	49	-38	-70	32	17
KWOA	730	-68	-92	24	-68	-91	23	1
KUOM	770	-65	-102	37	-65	-100	35	2
WCCO	830	-52	-82	30	-52	-83	31	-1
KNUJ	860	-61	-99	38	-61	-97	36	2
KTIS	900	-54	-89	35	-55	-88	33	2
WCTS	1030	-57	-84	27	-58	-83	25	2
KASM	1150	-25	-64	39	-24	-69	45	-6
KYES	1180	-31	-79	48	-30	-72	42	6
WLWL	1330	-59	-92	33	-59	-92	33	0
KSTP	1500	-57	-87	30	-56	-87	31	-1
KQSP	1530	-60	-86	26	-66	-90	24	2
KPNP	1600	-55	-83	28	-54	-83	29	-1

Table 2-4: Results of Crossover Misalignment (North signals are omitted.)

Except for a few frequencies where things get loopy, variation due to crossover misalignment isn't as dramatic as might be expected. However, the deliberate physical skewing is messing with the consistency of F/B performance (note the 660 anomaly and the alternate swings in null-depth-advantage at 1150 and 1180). The **null cost** column demonstrates that Good Engineering Practice is always valid.

E. POLE HEIGHT IMBALANCE: Photo 2-2 shows what the camera saw after a mid-summer storm, definite pole height imbalance. *The tree would have missed the support pole, had it fallen a few inches in either direction ☺*



When we rebuilt this pole we added a PVC sleeve that let us change the pole height several inches up or down from 'nominal,' to observe the **effects on F/B of support poles of unequal height**. Table 2-5 shows the effects on null depth at various frequencies when the height of the south pole is different from the height of the north pole. Each time that the south pole's height was adjusted, the null pot was adjusted for the greatest null on 1150 kHz.

FREQ	Equal pole heights	140-foot D-KAZ	South pole minus 10"
	depth (1150 max null)	South pole plus 10" null depth (1150 max null)	South pole minus 10" null depth (1150 max null)
	db	db	db
540	24	37	29
640	23	29	27
660	26	43	29
730	24	31	27
770	26	29	28
830	25	28	28
860	40	28	36
900	27	36	32
1030	19	32	24
1150	41	30	38
1180	41	32	38
1330	34	26	27
1500	26	25	32
1530	23	27	21

Table 2-5

The unpredictable results in Table 2-5 point us toward additional pole-height measurements in 2019.

F. Finally, RETURN-WIRE HEIGHTS. *Speculation by others:* "If acting as a terminated loop, a D-KAZ might be considered a 'free-space antenna' and, as such, might be relying on transfer from one section to the other... via a sympathetic element." (Meaning: *the ground?* Hmmm....)

This gives rise to the thought that F/B on a D-KAZ is probably related to the ground conductivity beneath the antenna. More info will be sought.

The 2018 return-wire data in Table 2-6 is from a 140-foot D-KAZ mounted above 'normal' grass on a mixture of gravel and clay. Our "test bed" was clearly limited by having only one type of ground beneath the D-KAZ. In a reach for additional definition, each of the six signals was individually nulled. Null-depths are posted for several heights ("Above Ground Level") of the return-line (the first four columns). Then, after the run with the three-foot wire height, a counterpoise was added from end to end, directly beneath the return wires (it was a floating single run of wire on the ground). The support-pole heights are unchanged, so the antenna aperture varies slightly with these changes.

Individual nulls	RETURN-WIRE ON 140-FOOT D-KAZ				Counterpoise
	1 ft AGL	18" AGL	2 ft AGL	3 ft AGL	w/3 ft AGL
FREQ	depth	depth	depth	depth	depth
	db	db	db	db	db
730	24	26	25	28	26
770	24	29	30	29	27
830	27	27	28	26	25
900	33	35	32	30	900 TEMP OFF-AIR
1150	35	49	42	31	33
1180	39	44	52	29	31
1330	30	29	33	27	31
1500	24	35	26	32	26

Table 2-6

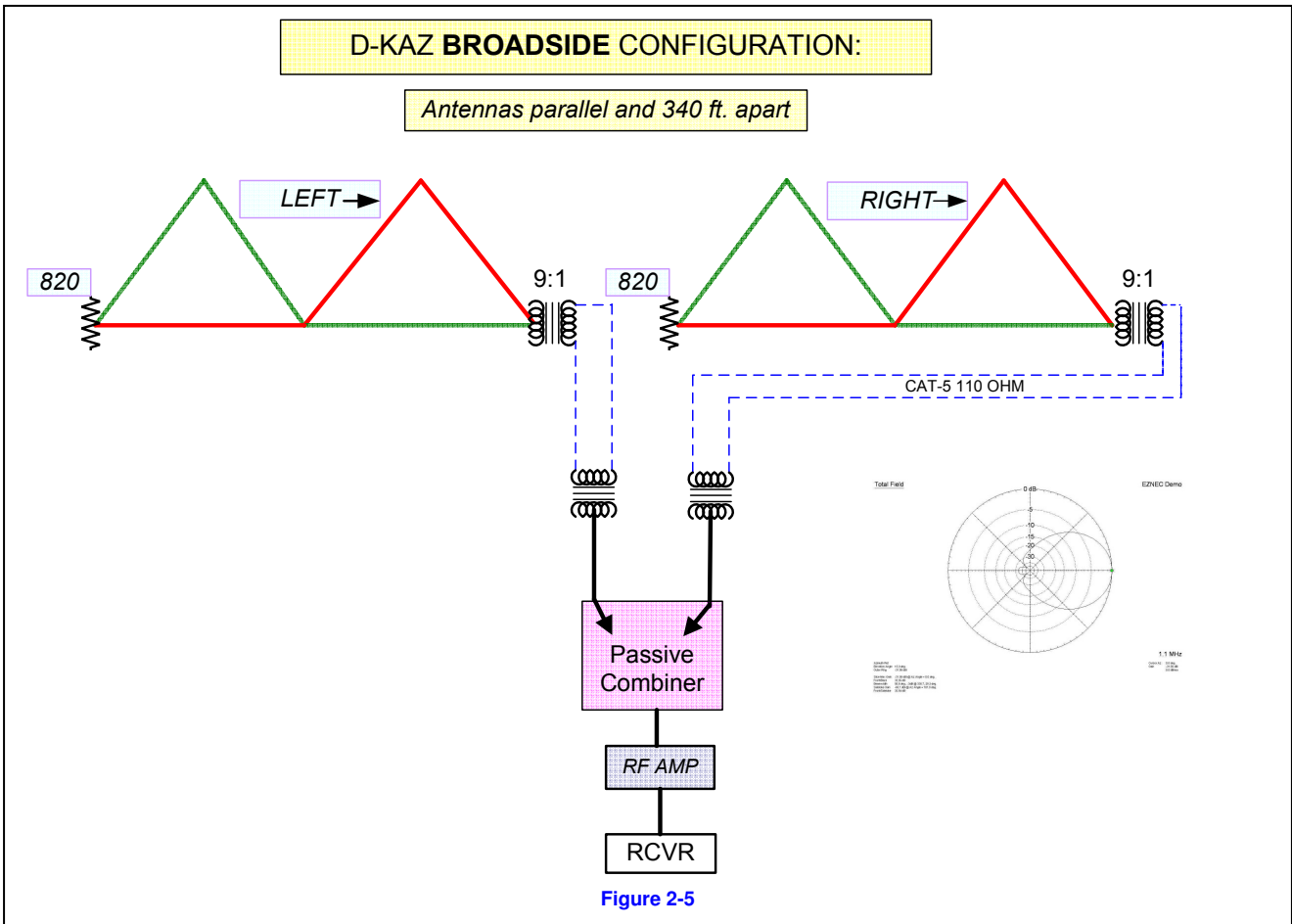
Enough is still *not* known, to suggest we need to better understand the *F/B impact of the ground beneath the antenna*. What we've gathered from this data is that different return-wire heights do affect F/B. But what about ground composition? Further study will be performed.

MISALIGNMENT SUMMARY: From all these observations it's clear that attention needs to be paid to the physical alignment of the D-KAZ antenna. Not only do some misalignments perturb the directivity, but they can do so in unpredictable ways. And the cumulative effect of too-casual wire-alignment can negate the superior F/B performance of the antenna.

From all of this, the best takeaway for me: *There's plenty to learn about D-KAZ geometry!*

NON-ROUTINE D-KAZ APPLICATIONS

1. THE BROADSIDE D-KAZ: This version of the D-Kaz has great promise. Two matched D-KAZ antennas in parallel will narrow the beam-width and reduce side-lobes. **Figure 2-5** illustrates the signal-flow for a Broadside configuration:



We tried the "Broadside" on a recent Utah desert DXpedition. We certainly had the room (**Photo 2-3**)

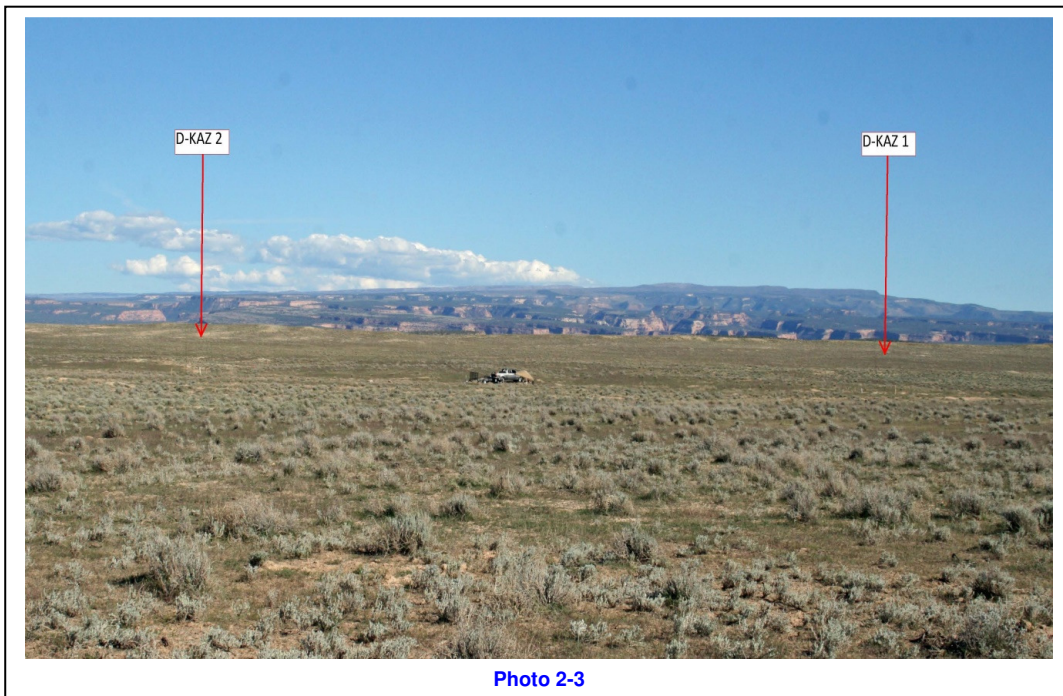
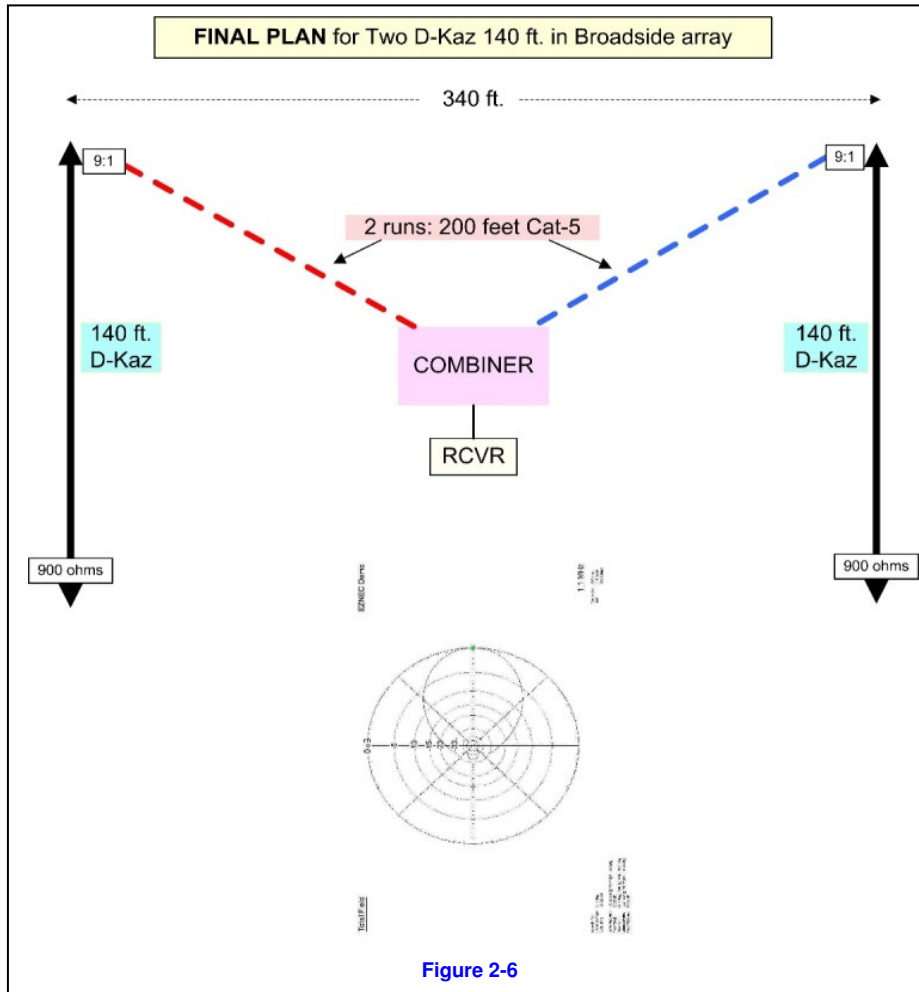
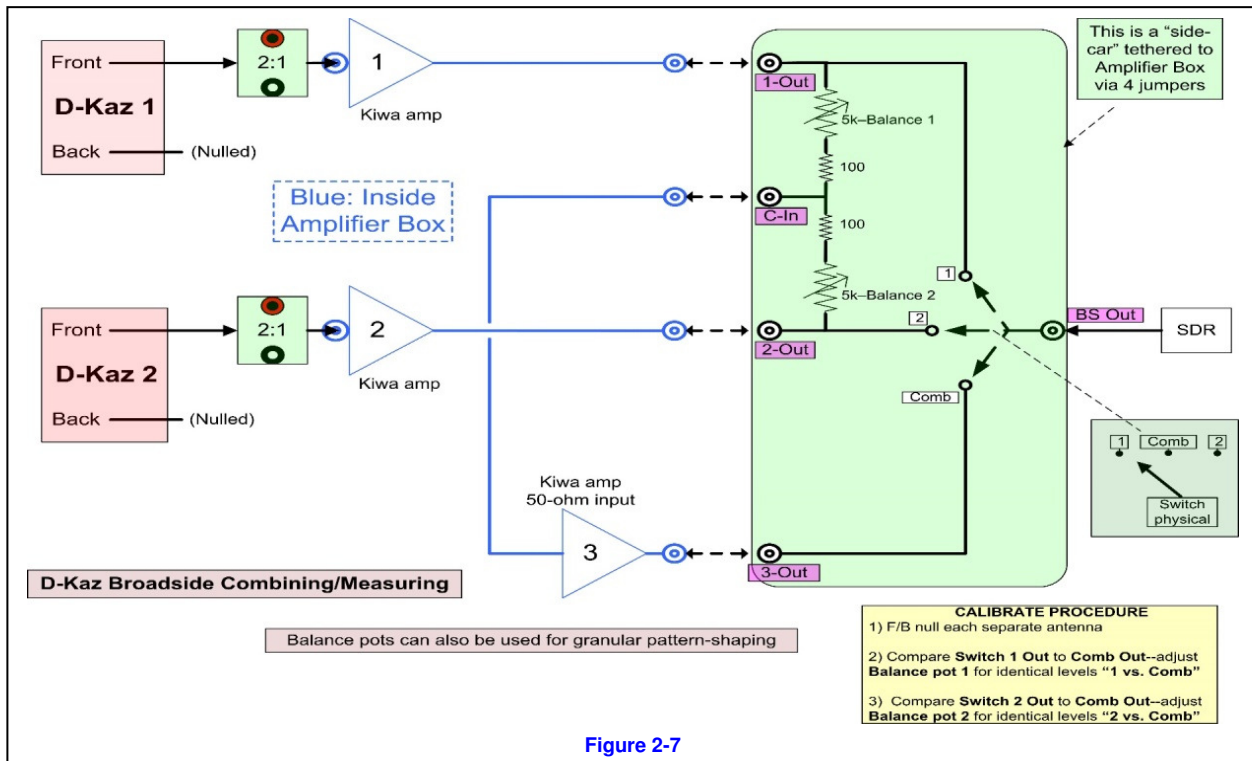


Figure 2-6 is the eagle's view of the Utah desert layout (the antenna is oriented NW, and the "900 ohm" terminations were actually 820 ohms):



Why 340 feet apart? The EZNEC modeling predicts the best separation for two elements is from 0.53 to 0.55 wavelengths. Neil Kazaross advises: “Once you get beyond that, while the main beam becomes even more narrow, side-lobes start creeping up. And with less separation, the main beam is not as narrow as it could be.”

A two-element Broadside array requires that the antennas be combined in phase. For the desert, we built an “RF mixer” using three 10-dB Kiwa low-noise amplifiers, arranged as seen in Figure 2-7. These amplifiers can be bypassed and a single low-noise amplifier inserted ahead of the SDR.



The "balance pots" also allowed us to calibrate the array with a good surface-wave signal (KSL 1160). (During calibration, one of the D-Kaz antennas was flipped out-of-phase and the balance pots were adjusted for best null of KSL.)

Again, Kazaross points out: "Broadside arrays for those with the room are certainly the way to go. They also can be phased somewhat as I have done, to create some deep nulls at some side angles and to steer the main beam."

Figure 2-8 shows the EZNEC comparisons.

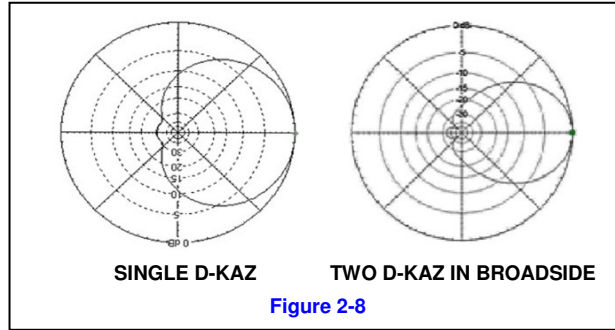


Figure 2-8

UPON FURTHER REVIEW: A few seconds after we started listening to the recordings, it became obvious that a Broadside D-KAZ was very good at scrunching side-lobes and furthering F/B performance, while tightening the main (NW) front lobe. The result was that we found stations sneaking through, over other co-channels that would have shown up on an antenna with a wider acceptance angle. For example:

- 580: KIDO over nearby KUBC
- 590: KID and KQNT over nearby KSUB
- 690: Tiny KRCO over KEII just north of us (even if KRCO was on day power, it's just a kilowatt).
- 770: KTTH and CHQR wiped out powerhouse KKOB behind us.
- 790: 61-watt KSPD stood out among six or seven co-channel neighbors (day power is but 1kw).
- 1060: Daytimer KBGN still on after Sunset; over flamethrower-jokester CKMX and nearby KDYL.
- 1090: KFNQ overcame closer hotshot KBOZ.

And so on. 1270 KAJO held up over several closer neighbors. We copied three of seven available signals on 1300 (KAPL, KLER and even KKOL)... all three in the Broadside's bore-sight.

On 1450, KCLX came up from Colfax WA, among dozens of GY'ers. All in all, nearly a hundred new call letters for the log book.

"BROADSIDE-BROADSIDE?" Kaz continues to stay a few steps ahead. His modeling suggests we could add at least one or two *more* elements to a broadside array. This of course is appealing to those who are gluttons for punishment (and have a spare desert lying around, for the space needed).

2. THE ENDFIRE D-KAZ: This one is intriguing. D-KAZ Endfires are built along the lines of a theoretical array recently measured by Neil Kazaross. His virtual antenna is composed of two 120-foot antennas with 21-foot apex, and separated by 40 feet. Kaz suggests: "The real issue with making an EF array work well across the entire band is that both antennas must act electrically the same, and provide identical response. You can end up with both having good back nulls and providing about the same forward gain, but still have some phase errors between them as frequencies change... and then you can't create deep broadbanded nulls." But done correctly, one might expect to see patterns as seen in Figure 2-9.

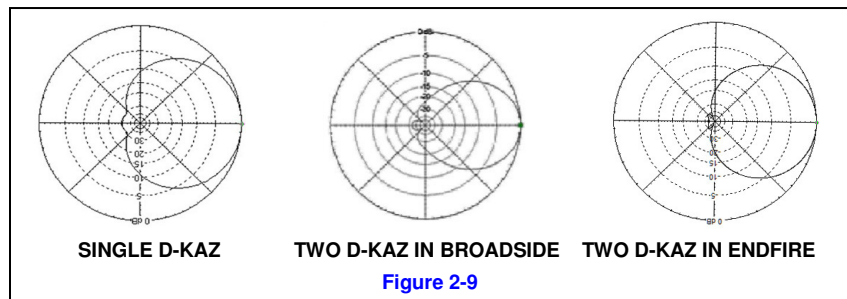


Figure 2-9

Neil Kazaross: "The back null in the elevation plane is also deep and covers high angles well. Compared to Broadside, Endfire is somewhat more sensitive to errors." Nick Hall-Patch suggests: For me personally, I'd be curious to compare the **high angle nulls** of an Endfire array with a regular DKaz and with a Broadside DKaz array. It's the broad high angle nulls which help give the single DKaz its edge... and if those nulls are better yet (in Broadside or Endfire compared with a single DKaz), then it's definitely a point in their favor.)

3. PATTERN-REVERSAL: A final iteration is *antenna pattern-reversal* and this is applicable to most antennas with two feed points. The D-KAZ really shines in this arrangement. Reversal is a simple matter of relay-logic, swapping the receiver and null-pot ends. Pattern-reversal is as easy as flipping the switch. Figure 2-10 is a block diagram of a remote-controlled reversible D-KAZ.

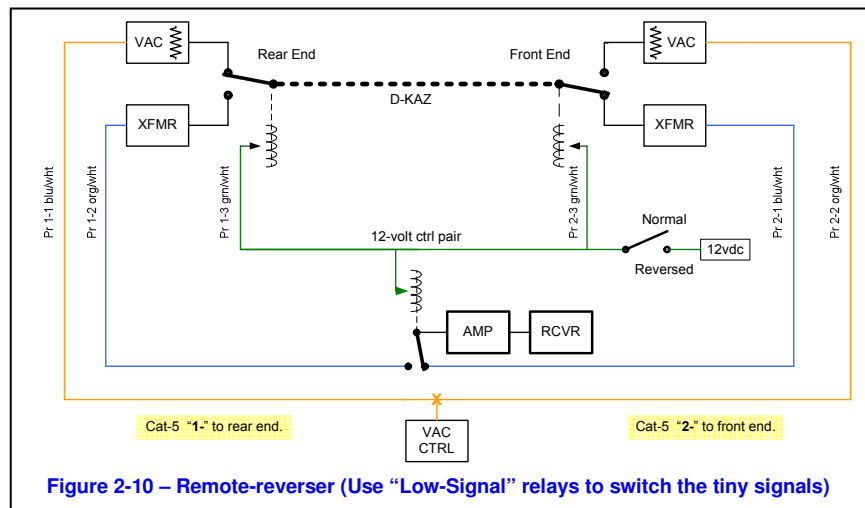


Figure 2-10 – Remote-reverser (Use "Low-Signal" relays to switch the tiny signals)

Table 2-7 displays the Minnesota logs showing how well the reverser plays. This table shows the co-channel stations that appear when the antenna is flipped "South" so the "hot" side is looking for signals from the opposite direction. The "South" stations came up with no readjustment of the null-pot.

Stations heard on opposite sides of a D-Kaz 140-ft. antenna				
"North" (330 deg)			"South" (150 deg)	
600	KSJB	Jamestown ND	WMT	Cedar Rapids IA
620	CKRM	Regina, SK, CA	KNMS	Sioux City IA
680	CJOB	Winnipeg, MB, CA	KFEQ	St. Joseph MO
740	KVOX	Fargo ND	WDGY	Hudson WI
790	KFGO	Fargo ND	WAYY	Eau Claire, WI
810	KBHB	Sturgis SD	WHB	Kansas City MO
860	CBKF2	Saskatoon, SK, CA	KNUI	New Ulm MN
880	CHQT	Edmonton, AB, CA	WMEQ	Menominee WI
890	KQLX	Lisbon, ND	WLS	Chicago IL
910	KCJB	Minot ND	WHSM	Hayward WI
950	KWAT	Watertown ND	KTNF	St Louis Park MN
970	WDAY	Fargo ND	KQAQ	Austin MN
980	KDSJ	Deadwood SD	KKMS	Richfield MN
990	CBW	Winnipeg, MB, CA	KAYL	Storm Lake IA
1080	KNDK	Langdon ND	KYMN	Northfield MN
1130	KBMR	Bismarck ND	KTCN	Minneapolis MN
1220	KDDR	Oakes ND	KLBB	Stillwater MN
1230	KTRF	Thief River Falls MN	KMRS	Morris MN
1280	KVXR	Moorhead MN	WWTC	Minneapolis MN
1300	KPMI	Bemidji MN	WQPM	Princeton MN
1310	KNOX	Grand Forks ND	KGLB	Glencoe MN
1340	KVBR	Brainerd MN	KWLM	Willmar MN
1350	KDIO	Ortonville MN	KCHK	New Prague MN
1360	KKBJ	Bemidji MN	KRWC	Buffalo MN
1370	KWTL	Grand Forks ND	KSUM	Fairmont MN
1450	KBMW	Breckenridge MN	KNSI	St. Cloud MN
1470	KHND	Harvey ND	KMNQ	Shakopee MN
1480	KKCQ	Fosston MN	KAUS	Austin MN
1520	KMSR	Mayville ND	KOLM	Rochester MN
1660	KQWB	Fargo ND	KUDL	Kansas City KS

Table 2-7

Thus, in two sections; the 2018 **D-KAZ Cookbook**. We've reviewed the basics of operation, compared the performance of two D-KAZ lengths, looked at nulling and at ways to extend lead-ins to the shack. We presented ideas for antenna construction and reviewed the effects of misalignment of certain parts of the antenna (in the belief that a number of these misalignments, when added together, might really detract from the expected directivity of the D-KAZ). We showed you the D-KAZ in "Broadband" mode and offered one fellow's approach to switch-reversing antenna directions.


It's one wall-banger of a Medium-Wave antenna. The Broadside version will be deployed again in the desert; hopefully in Nick's company. And the Endfire shows great promise as a 'next great leap.' It'll be interesting to see who runs with this....

For now, we leave to Neil Kazaross the last word: *"I strongly believe that arrays of D-KAZ represent the next step for antennas for out hobby, for those with adequate land to use and the time to build, test and maintain."*

In our next exciting episodes: Reports on the D-KAZ in Endfire configuration; a further look at the *return-wire-vs-ground situation* and a comparative look at results from unequal delta sizes.

Hope this has been useful!

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My deadline is the last Monday of the month at 1500 ELT.

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FREQ CALL NAME, TITLE; ADDRESS; WHAT; WHEN; WHO

1270	KAJO*	Jeannette Stark; kajo@kajo.com ; E; 1ff; PB
	KAJO**	Rain J Redfield, CE; rain@kldr.com ; E: 1ff; PB
1620	WNRP	Dave Hoxeng, O; dhoxeng@catcountry987.com ; E; 1; EK [Station in Gulf Breeze FL]
	WNRP	Davis Allen, Prog Coord; dallen@newsradio1620.com ; E; 1; EK [Station in Gulf Breeze FL]
1650	CINA	Cameron Akavan; Senior Mgr; cinaradio@gmail.com ; E; 2; EK [Station in Mississauga ON]
	CKZW	Andre Joy, GM; LaRadioGospelckzw@videotron.ca ; E; 2; EK [Station in Montreal QC]
1660	KBRE	Jason LaChance; jlachance@radiomerced.com ; E; 4; EK [Station in Merced CA]

WHAT was received: L = Letter with personalized statement; F = Form letter; Q = QSL card, commercially printed; C = Postcard or similar card supplied by station; P = Prepared card or form supplied by DXer; R = DXer's report returned with statement; cf = Certificate; E = Verification by Email; fx = Verification by FAX; M = Coverage map; B = Bumper or other sticker; bc = Business card; + = Extra goodies

WHEN the reply came: Number of days elapsed; f = Follow-up, by mail, FAX, Email, or visit; n = Return postage not used; r = Return postage returned

NOTES: * [For this column] = Email verification lists postal mailing address as 888 Rogue River Highway, Grants Pass OR 97527. * [For this column] = Second email verification arrived two hours after the first one.

Nice to have Phil and Edward with us this month! This column, the longest in many months, was prepared on 12/31/18. Happy New Year! 73, SSH.



Note: Pricing has been revised for some of the following IRCA Goodie Factory Items – pb

Full Color IRCA Letterhead

Full color 8.5 x 11 MS Word 2007 file with the current IRCA logo. Send Email to phil_tekno@yahoo.com to get yours today! Great for verification requests.

IRCA Slogans List (October 2018)

This completely revised Slogans List includes radio slogans from the US and Canada (over 4500). The 2018 IRCA Slogans List is posted on the IRCA website for all to download. The link is: http://www.ircaonline.org/editor_upload/File/IRCA%20Slogans-Introduction.pdf

For those preferring a hard copy, one can be ordered from the IRCA.

Prices: **IRCA/NRC members** – \$4.50 (US), \$5.50 (Canada) \$7.00 (México), \$7.50 (rest of the world). **Non-IRCA members** – add \$1.00.

IRCA TIS/HAR LIST (Summer 2018)

The **IRCA TIS/HAR LIST** lists all US and Canadian TIS/HAR stations, by frequency, including call letters, state (province), city, county, licensee, address, coordinates, expiration date and dates of DXM/DXN reports/sources. It has been updated with FCC data, DXM, DXN and DXer reports, and on-line listings through June 6 2018.

The 2018 IRCA TIS/HAR LIST is posted on the IRCA website for all to download. The link is: http://www.ircaonline.org/editor_upload/File/TIS_2018.pdf

For those preferring a hard copy, one can be ordered from the IRCA.

Prices: **IRCA/NRC members** – \$5.00 (US), \$6.00 (Canada) \$8.00 (México), \$9.00 (rest of the world). **Non-IRCA/NRC members** – add \$1.00.

IRCA Mexican Log, 21st Edition (Winter 2018)

The **IRCA MEXICAN LOG** lists all AM stations in Mexico by frequency, including call letters, state, city, day/night power, slogans, schedule in UTC/GMT, formats, networks and notes. The call letter index gives call, frequency, city and state. The city index (listed by state, then city) includes frequency, call and day/night power. The transmitter site index (listed by state, then city) tabulates the latitude and longitude of transmitter sites. This is an indispensable reference for anyone who hears Mexican radio stations. Size is 8 1/2" x 11".

Prices: **IRCA/NRC members** – \$7.00 (US), \$8.50 (Canada) \$12.00 (México), \$14.00 (rest of the world). **Non-IRCA/NRC members** – add \$1.00.

A DXers Technical Guide, 4th Edition (Spring 2004)

In its nearly 200 pages you will learn about the principles underlying the design of successful receivers, antennas and receiving accessories, find reviews of the best commercially available DXing equipment in different price ranges, as well as detailed instructions for building one's own antennas and other DXing aids. Although it focuses on the technical backdrop to medium wave DXing, it will also be of interest to serious shortwave listeners and low band radio amateurs.

Prices: **IRCA/NRC members** – \$15.00 (US), \$16.50 (Canada) \$18.00 (México), \$20.00 (rest of the world). **Non-IRCA/NRC members** – add \$2.00.

Sunrise/Sunset Maps

12 maps showing 15 minute sunset and sunrise times for the US and 12 maps showing hourly sunset and sunrise times for the World. Explanation includes use of the maps and examples of DX made possible by knowledge of SR/SS times.

Prices: **IRCA/NRC members** – \$2.25 (US), \$3.00 (Canada) \$3.50 (México), \$4.50 (rest of the world). **Non-IRCA members** – add \$1.00.

IRCA Reprints

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

Also from the IRCA. "IRCA REPRINTS ON CD"!!! 648 Reprints. The entire set, now on one CD. Categories include: Antennas, Domestic, Foreign, History, DX Lists, Receivers and Receiver Modifications, and Technical. Check out the table of contents at: <http://ircaonline.org/2004ReprintList.htm>.

Prices: **IRCA/NRC members** – \$10.00 (US), \$11.00 (Canada) \$11.50 (México), \$12.50 (rest of the world). **Non-IRCA/NRC members** – add \$2.00.

"DX Monitor" on DVD

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THE INTERNATIONAL RADIO CLUB OF AMERICA
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<http://www.ircaonline.org>

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 October through March, twice monthly from April to October.) **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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