

August 24, 2013 – Volume 51, Number 1 – Edition 1602 – ISSN 899-9733

Welcome to a New Era in IRCA!

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FROM THE EDITOR-IN-CHIEF

As of this issue, IRCA is entering a new era in the history of the club...the first electronic-only bulletin. We wish those of us who left due to the switch to electronic-only delivery the best in their future DX endeavors. What you will see in the all-electronic bulletins are: original size photos (not the shrunken pictures of the hardcopy editions). All of the pictures will also be in color, unlike the black and white pictures so common with the hardcopy editions, along with the headlines and column headers. Also, the page limits are off...that means no more splitting of long articles between two issues and larger occasional columns like the SportChannels column. We hope that this will be a smooth transition to electronic delivery. Western DX Roundup and Central DX Roundup are taking a breather for this first edition of the new era so that John and Nancy can travel. In the next issue, the new contest will be unveiled. I hope you heard the pre-season DX Tests!

TVA-RHA RESULTS

The winner of the Ric Heald Award is **Kraig Krist**, for his enthusiastic support of Eastern DX Roundup and Verification Signers columns.

The winner of the Ted Vasilopoulos Award is **Lee Freshwater**, for all of the fine work and varied tasks (President, Publisher, Awards, Reprints, EDXR Editor, etc.) that he has performed for IRCA over the years.

The awards will be mailed to the recipients, as neither one was present at this year's Convention. (via Nick Hall-Patch, nhp@ieee.org)

NEW FROM NRC PUBLICATIONS

NRC Publications is now accepting pre-orders for the 34th Edition of the **NRC AM Radio Log**. This began final production shortly after the Minneapolis convention, and should be shipping by the time you read this. The member price is good for NRC and IRCA members. The member price is \$22.95 (media rate); \$26.80 if you want this shipped via Priority Mail. The non-member price is \$28.95 (\$32.80 if you want this shipped via Priority Mail). For shipping to Canada, the price is \$35.00, and if shipped overseas, the price is \$39.00. All orders shipped to Canadian and overseas addresses will be sent via Global Priority Mail.

Also new from NRC Publications is the 7th Edition of the **NRC AM Pattern Book**, which began shipping following the Minneapolis convention. Prepared by noted DXer Paul Swearingen, it is an all-inclusive book of day and night operation patterns for stations in the United States, Canada and selected foreign countries. The data sources for the information come from the 34th NRC AM Radio log and the comprehensive Mexican station listing put together by noted DXer John Callarman. There are 240 pages in this book; the maps cover each frequency from 530 to 1700 kHz, depicting the U.S. "Lower 48", Canada and Mexico. Hawaii and Alaska are shown on separate maps at the end of the book. The member price is \$22.95 (\$26.80 for shipping via Priority Mail); the non-member price is \$28.95 (\$32.80 for shipping via Priority Mail). The price for shipping to Canada is \$35.00, while the price for overseas shipping is \$39.00. Orders shipped to Canadian and overseas addresses will be shipped via Global Priority Mail. The NRC AM Pattern Book may also be ordered using PayPal (a service fee will apply) at <http://www.nrcdxas.org/>

Both publications may be ordered from: **National Radio Club, P.O. Box 473251, Aurora, CO 80047.**



CANADIAN RADIO NEWS

Dan Sys- sysdan@gmail.com

For July 2013 (August 1 2013 – next update September 1 2013)

OFF THE AIR

1340 NT Yellowknife CFYK Went dark without utilizing authorized 90 day simulcast period after flip to 98.9 FM.

AM TO FM CONVERSIONS GRANTED

1450 AB Fort Chipewyan CBKE Move to 99.9 with 50 watts.

PROPOSED NEW STATIONS

1610 QC Montreal Commercial. South Asian. 1,000 watts fulltime. Radio Humsafar.

PROPOSED AM TO FM CONVERSIONS

860 BC Williams Lake CBRL Move to 92.1 with 275 watts.
1230 NB Saint Quentin CBAF-21 Move to 91.1 with 50 watts.

PROPOSED TECHNICAL CHANGES

900 SK Prince Albert CKBI Reduce night power from 10,000 to 2,800 watts (day power will remain 10,000 watts). Relocate transmitter and change antenna radiation pattern from directional to non-directional.
990 QC Montreal CHRF-cp Move to 980. Reduce night power from 50,000 to 10,000 watts (day power will remain 50,000 watts).

BROADCASTING INFORMATION

Robert J. Wien (KG6RJW/3) - 902 Hall Station Drive #104 - Bowie, MD 20721
E-mail: wienbob@aol.com **Column Deadlines: Saturdays**

DATE OF COLUMN: JULY 27, 2013 and AUGUST 10, 2013

Column data span: July 14, 2013-August 10, 2013

Data courtesy of Stationintel.com, FCC database and member contributions

COLUMN DEADLINES: SATURDAYS

Please send your tips to the Email address above only and no other.
Deadlines for column will be Saturdays. Thank you.

CALL CHANGES

FREQ	OLD CALL	CITY OF LICENSE	NEW CALL
1010	WLYT	Black Mountain, NC	WKJW
1240	WFSX	Ft. Myers, FL	WFWN
1490	KRKZ	Forks, WA	KFKB
1600	KLNQ	Casper, WY	KKTS

FORMAT, SLOGAN AND SILENT STATUS CHANGES (PART ONE)

FREQ	CALL	CITY OF LICENSE	NEW INFORMATION
550	WGR	Buffalo, NY	adds one additional new unknown network
570	KQNG	Elelee, HI	changes city of license from Lihue to Elelee
610	WFNZ	Charlotte, NC	was Fox Sports Radio, now CBS Sports Radio
660	WLOY	Rural Retreat, VA	old slogan: "Talk Radio 660", new: "Gammit Radio"
660	WLOY	Rural Retreat, VA	was Talk, now Oldies
700	WDMV	Walkersville, MD	adds slogan: "La Jefa 700"
720	KUAI	Kekaha, HI	changes city of license from Elelee to Kekaha
810	WXFO	Royston, GA	old slogan: "Fox News Radio 810", new: "News Talk 810"
840	KARS	Belen, NM	was silent, now modern rock, adds slogan "Area 102.9"
880	WMDB	Nashville, TN	old slogan: "El Sol 880", new: "La Ranchera 880"
880	WMDB	Nashville, TN	was Spanish hits, now Ranchera
920	WMNI	Columbus, OH	was news, now Dial Global Adult Standards
960	WGRO	Lake City, FL	now silent
980	WEGO	Winston-Salem, NC	old slogan: "The Truth", new: "The Eagle 980 AM"
980	WEGO	Winston-Salem, NC	was Christian Teaching (Truth Network), now Talk
1010	WLYT	Black Mountain, NC	old slogan: "The Truth", new: "The King's Radio"
1010	WLYT	Black Mountain, NC	was Talk, now Southern Gospel
1030	WBGS	Point Pleasant, WV	old slogan: "Cruisin' Oldies 1030", new: "Faith Radio"
1030	WBGS	Point Pleasant, WV	was Oldies, now Southern Gospel

1050	WLON	Lincolnton, NC	old slogan: "The Boss", new: "Big 'O' Country Radio"
1050	WLON	Lincolnton, NC	was Oldies, now Classic Country
1060	KRUZ	Van Buren, AR	now silent
1090	WBAL	Baltimore, MD	was Yahoo Sports radio, now ESPN Radio network
1090	WCAR	Livonia, MI	new: "NBC Sports Radio 1090"
1090	WCAR	Livonia, MI	old slogan: "ESPN Detroit 1090"
1090	WCAR	Livonia, MI	was ESPN Radio, now Dial Global NBC Sports network
1160	WODY	Fieldale, VA	new: "ESPN Southside 1160"
1160	WODY	Fieldale, VA	old slogan: "Southside Sports Media 1160"
1160	WODY	Fieldale, VA	was Yahoo Sports radio, now ESPN Radio network
1170	WCXN	Claremont, NC	old slogan: "Que Buena 1170", new: "Poder 1170 AM"
1190	KQQZ	De Soto, MO	new: "Hot Talk and Kool Killer Country"
1190	KQQZ	De Soto, MO	old slogan: "Hot Talk/Cool Classic Country"
1190	WNCR	Red Oak, NC	new construction permit
1230	WODI	Brookneal, VA	was silent, now Talk
1240	WFSX	Ft. Myers, FL	old slogan: "92.5 Fox News", new: "1240/1270 The Fan"
1240	WFSX	Ft. Myers, FL	was News/Talk, now Dial Global NBC Sports network
1270	WNOG	Naples, FL	old slogan: "92.5 Fox News", new: "1240/1270 The Fan"
1270	WNOG	Naples, FL	was News/Talk, now Dial Global NBC Sports network
1290	KCUB	Tucson, AZ	was Fox Sports radio, now CBS Sports
1300	KSET	Lumberton, TX	was silent, now Talk, adds slogan: "Freedom 1300"
1340	KOLE	Port Arthur, TX	now silent
1340	WDSR	Lake City, FL	old slogan: "Oldies 1340", new: "95.5 The Falcon"
1340	WDSR	Lake City, FL	was Oldies, now Country
1380	KVSM	Santa Maria, CA	new construction permit
1390	WOHS	Shelby, NC	new: "Big 'O' Country Radio"
1390	WOHS	Shelby, NC	old slogan: "Real Country 1390"
1400	KREW	Plainview, TX	was Tejano, now Sports, adds slogan: "The Krew Sport"
1420	KUJ	Walla Walla, WA	was ESPN Sports radio, now Cumulus True Oldies
1420	WRCG	Columbus, GA	adds Classic Rock as secondary format
1430	KWST	El Centro, CA	old slogan: "Jose FM", new: "Radio Catolica"
1430	KWST	El Centro, CA	was Spanish Adult Hits, now Spanish Catholic
1450	WFTR	Front Royal, VA	now Dial Global NBC Sports Radio
1450	WFTR	Front Royal, VA	old slogan: "Real Country 1450", new: "Sportsradio 1450"
1450	WFTR	Front Royal, VA	was Dial Global Mainstream Country
1450	WTOD	Hartsville, SC	now silent
1460	KCLE	Burleson, TX	new: "ESPN 1460/93.1"
1460	KCLE	Burleson, TX	old slogan: "Big Country KCLE 1460"
1460	KCLE	Burleson, TX	was Classic Country, now ESPN Radio Network
1480	WIOS	Tawas City-E. Tawas, MI	- adds Talk as secondary format
1490	KORN	Mitchell, SD	new: "News Radio 1490"
1490	KORN	Mitchell, SD	old slogan: "KORN 1490 Talk of the Town"
1490	WQQX	East St. Louis, IL	adds slogan: "Hot Talk/Timeless Memories"
1530	WYMM	Jacksonville, FL	was Talk, now unknown format
1580	KAMI	Cozad, NE	was silent, now Bott Radio Network Christian Teaching
1590	WCSL	Cherryville, NC	adds slogan: "Big 'O' Country Radio"
1590	WCSL	Cherryville, NC	was Southern Gospel, now Classic Country
1590	WTGA	Thomaston, GA	was Adult Contemporary/Talk, now Soft AC/Talk
1600	KTAP	Santa Maria, CA	was Spanish CHR, now Regional Mexican
1600	WJSA	Jersey Shore, PA	new: "ESPN Radio 1050 WYLC"
1600	WJSA	Jersey Shore, PA	old slogan: "Light For Life...WJSA!"
1600	WJSA	Jersey Shore, PA	was Contemporary Christian, now ESPN Sports network
1650	KSVE	El Paso, TX	new: "ESPN Deportes 1650"
1650	KSVE	El Paso, TX	old slogan: "Maria Siempre Romantica"
1650	KSVE	El Paso, TX	was Romantica, now ESPN Deportes Radio Network sports

FORMAT, SLOGAN AND SILENT STATUS CHANGES (PART TWO)

FREQ	CALL	CITY OF LICENSE	NEW INFORMATION
580	WLVA	Lynchburg, VA	now silent
610	WIP	Philadelphia, PA	new: "CBS Sports Radio 610"
610	WIP	Philadelphia, PA	old slogan: "Sportsradio 94 WIP"
620	WJHX	Lexington, AL	now silent
630	KIDD	Monterey, CA	old slogan: "ESPN 97.9", new: "ESPN 630"
690	WJOX	Birmingham, AL	was Fox Sports Radio, now CBS Sports Radio
740	WHMT	Tullahoma, TN	adds slogan: "The Ticket"
740	WHMT	Tullahoma, TN	was Adult Contemporary, now CBS Sports Radio
890	KGGN	Gladstone, MO	new slogan: "890 KGGN-God's Good News"

900	WJTH	Calhoun, GA	now Dial Global Mainstream Country
900	WJTH	Calhoun, GA	was Dial Global Country Today
920	WGNU	Granite City, IL	was Talk/Urban Gospel, now CBS Sports Radio, Christian Teaching, weekday slogan: "CBS Sports Radio 920"
930	KKXX	Paradise, CA	old slogan: "Real Talk 930", new: "Life Radio 930"
980	WKLY	Hartwell, GA	was Talk, now Salem Solid Gospel, Country
1010	KIND	Independence, KS	was Country, now Oldies
1060	KDYL	S. Salt Lake City, UT	new: "Chinese International Radio"
1060	KDYL	S. Salt Lake City, UT	old slogan: "Real Oldies 1060 KDYL"
1060	KDYL	S. Salt Lake City, UT	was Oldies, now Ethnic
1070	KATQ	Plentywood, MT	adds slogan: "1070 The Q"
1100	KDRY	Alamo Heights, TX	new: "All Teaching Christian Radio"
1100	KDRY	Alamo Heights, TX	old slogan: "Christian AM 1100"
1130	WALQ	Carrville, AL	now silent
1190	KPHN	Kansas City, MO	now silent
1210	WMPS	Bartlett, TN	old slogan: "The Point", new: "Radio Superhero 1210"
1210	WMPS	Bartlett, TN	was Talk, now Adult Alternative
1220	WAYE	Birmingham, AL	old slogan: "Praise 1220", new: "La Jefa"
1220	WAYE	Birmingham, AL	was Urban Gospel, now Regional Mexican
1230	KELY	Ely, NV	was Cumulus True Oldies, now Talk
1300	WBOW	Terre Haute, IN	now silent
1300	WCLG	Morgantown, WV	old slogan: "Oldies 13 AM", new: "Classic Hits 13 AM"
1300	WJZ	Baltimore, MD	old slogan: "105.7 The Fan", new: "CBS Sports 1300"
1300	WSYD	Mount Airy, NC	deletes secondary unknown format
1340	KIJV	Huron, SD	was Oldies, now CHR
1340	KTMM	Grand Junction, CO	was Fox Sports Radio, now CBS Sports Radio
1360	WIXI	Jasper, AL	old slogan: "La Jefa", new: "The Heartbeat of the City"
1360	WIXI	Jasper, AL	was Regional Mexican, now R&B Oldies //WJLD 1400
1370	WSHV	South Hill, VA	adds slogan: "Country Legends 96.7"
1370	WSHV	South Hill, VA	was Urban AC, now Classic Country
1390	WZQQ	Hazard, KY	now silent
1400	WJLD	Fairfield, AL	was R&B Oldies, now R&B Oldies //WIXI 1360
1400	WZHR	Zephyrillus, FL	was Southern Gospel, now Music of Your Life, Talk
1410	WDOV	Dover, DE	old slogan: "News Radio 1410", new: "News/Talk 1410"
1410	WNWZ	Grand Rapids, MI	old slogan: "Funny 1410", new: "1410 The Touch"
1410	WNWZ	Grand Rapids, MI	was Comedy 24/7, now Cumulus The Touch Urban AC
1450	WMIQ	Iron Mountain, MI	was Yahoo Sports Radio, now Fox Sports Radio
1450	WZGX	Bessemer, AL	now silent
1480	WIOS	Tawas City-E. Tawas, MI	- adds secondary unknown network
1490	KNAM	Silt, CO	was Fox Sports Radio, now CBS Sports Radio
1490	WIRB	Level Plains, AL	was silent, now Southern Gospel
1490	WTXG	Hampton, VA	was Fox Sports Radio, now Dial Global NBC Sports Net
1520	WLGC	Greenup, KY	adds slogan: "True Oldies Channel"
1520	WLGC	Greenup, KY	was silent, now Cumulus True Oldies
1530	WLWB	New Holstein, WI	adds slogan "La Pegadora 1530"
1530	WLWB	New Holstein, WI	was silent, now Regional Mexican
1530	WWDX	Huntingdon, TN	was Yahoo Sports Radio, now Talk
1550	WIRV	Irvine, KY	was Talk, now News/Talk
1580	WVKO	Columbus, OH	adds slogan: "1580 The Praise"
1580	WVKO	Columbus, OH	was Talk, now Urban Gospel
1590	WTVB	Coldwater, MI	was Oldies, now Classic Hits

Just turned the big 53, Happy B-day to Mike Sanburn whose B-day is August 15th. The IRCA convention just ended last weekend, looks like it was a big success! Be sure to report any local call or format changes you might have to the column, it what makes for great reading! No member contributions this time but hopefully next. Hope your DX is hot! Report your DX to your club DX columns, the club doesn't run without its reporters and volunteers. 73's. Bob Wien

EASTERN DX ROUNDUP

Eric Bueneman (NØUIH) – 631 Coachway Lane – Hazelwood, MO 63042-1347
E-mail: n0uiheric@aol.com
DEADLINES: Thursday 1900 ELT

Deadlines: Thursday, September 3 at 1900 ELT.

TUNING THE DIALS THIS ISSUE:

(JJR-MI) **John J. Rieger**, L'Anse, MI
 Grundig Satellit 750

(KK-VA) **Kraig Krist** (KG4LAC), Manassas, VA
Winradio G33DDC software-defined receiver, Kiwa Loop

ACROSS THE DIAL

740 WDCY MN, Hudson – 7/29 0653 noted with tons of local ads, mentioning Web sites for the Cambridge Antique Fair and Tenunchis, as well as a PSA for the AARP of Hudson County, mention of phone numbers in Area Codes 651 and 715. Poor signal. (JJR-MI)

940 WFAW WI, Fort Atkinson – 8/9 0722 noted with call letters heard in passing. Very poor signal, lost to other stations. (JJR-MI)

960 KLTF MN, Little Falls – 7/29 0709 noted with “46 at KLTF”, into sports report. Poor signal over all. (JJR-MI)

1050 WLIP WI, Kenosha – 8/11 0700 noted with legal ID including “WLIP” jingle, into CBS News. Very poor signal; never heard in L’Anse before. (JJR-MI)

1070 KVKK MN, Verdale – 7/29 0659 noted with the Star Spangled Banner, very detailed sign-on. Poor signal; wiped out by WTSO in minutes. (JJR-MI)

1150 WHUN PA, Huntingdon – 8/12 1945 noted with “Mike and Mike get your day going, for the latest sports news and opinions. Mornings 6:00 to 10:00 on ESPN Radio 1150” mention; “...as much as we enjoy being part of your day. If you’d like to get in touch with ESPN Radio 1150 to tell us what you think about our radio station, to publicize your community events, to advertise with us or just tell us you’re listening at work so we can thank your business on the air, you can call the radio station at 814-643-9620. E-mail: ESPN Radio 1150-at-Forever Radio-dot-com. Fax us at 643-9425...highway Suite A, Huntingdon, PA 16652. Thanks for listening to ESPN Radio 1150 WHUN Huntingdon” legal ID, followed by female announcer with info on the Lobster Fest on September 27. Male announcer with “Here’s what’s happening in Central Pennsylvania”. Noted mixing with WAVO, WDEL, CKOC and Christian preaching. (KK-VA)

1150 WAVO SC, Rock Hill – 8/12 1959 noted with “You’re listening to WAVO 1150 AM and the greatest hits...WAVO Rock Hill/Charlotte” legal ID. Noted mixing with WHUN, WDEL, CKOC and Christian preaching. (KK-VA)

1160 WVNJ NJ, Oakland – 8/13 2005 noted with “Entertaining and engaging, talk on your radio...1160 WVNJ” ID by male announcer. Noted mixing with WMET, WOBN, WCCS, WTEL, WPIE and an ESPN Radio station. (KK-VA)

1160 WTEL NC, Red Springs – 8/13 2020 noted with “With 5,000 watts of Gospel power, you’re in tune...1160 WTEL Red Springs, North Carolina” ID by male announcer. Noted mixing with WMET, WOBN, WCCS, WVNJ, WPIE and an ESPN Radio station. (KK-VA)

1170 WCXN NC, Claremont – 8/14 2102 noted with “www...WCXN” mention in English and Spanish by male announcer. Noted mixing with WDEK, WWVA and another music station (KJOC?-eb). (KK-VA)

1170 WDEK SC, Lexington – 8/14 1958 noted with “Craving your favorite Beach, Boogie and Blues? Well, WDEK is streaming 24 hours a day, seven days a week. It’s as easy as logging into WDEK 1170 AM-dot-com for the best Beach, Boogie, Blues and More...” by male announcer. Noted mixing with WCXN, WWVA and another music station. (KK-VA)

1180 WFYL PA, King of Prussia – 8/15 1933 noted with “...1180 WFYL-dot-com; listen online any time at 1180 WFYL-dot-com. King of Prussia...” by male announcer, into promo for “Career Center” on Saturday “...exclusively on 1180 WFYL” mention by female announcer. Noted mixing with WHAM, Cuba and other Spanish language station; getting hammered by WHAM (getting whammed?) (KK-VA)

1200 WXIT NC, Blowing Rock – 7/15 2030 noted with “America’s Radio News”, and ad for Mike Johnson Toyota in Hickory, NC. Noted mixing with WXKS, WKST, a music station and a station carrying Christian music. (KK-VA)

1210 WANB PA, Waynesburg – 7/16 1953 noted with “At home or on the go, how about us for Your Country Music Connection? More music, more variety, more country on Cool Country WANB” mention by male announcer. Noted mixing with WPHT. (KK-VA)

1230 KWNO MN, Winona – 8/11 0730 noted with mention of “KWNO Business of the Day” and ad for Menards. Poor signal. (JJR-MI)

1230 KWSN SD, Sioux Falls – 8/8 2200 noted with legal ID, very clear Sioux Falls mention into Fox Sports Radio. Very poor signal in mess. (JJR-MI)

1240 WSBC IL, Chicago – 8/9 0732 noted with “at 6:32, traffic on the Dan Ryan” into Chicago traffic report in fade-up. No calls heard. Very poor signal. (JJR-MI)

1240 WJON MN, Saint Cloud – 8/8 2230 noted with nice legal ID between ads, into Clark Howard. Poor signal, mixing with others. (JJR-MI)

1250 KCUE MN, Red Wing – 8/11 0750 noted with “Bluff Country 1250 KCUE” ID in sweep. Very good signal; never in this well! Only the fourth time heard. (JJR-MI)

1250 WTMA SC, Charleston – 7/19 1947 noted with “Remember, it’s 1250 The Big Talker” ID by male announcer. Noted mixing with WDVA, WGHB and unidentified Oldies station. (KK-VA)

1260 WSKO NY, Syracuse – 7/22 1958 noted with “The Voice of the Central New York sports fan, The Score 1260” ID by male announcer. Noted mixing with WWRC, unidentified music station and Radio Disney-type station (WWMK, WMKI or WSDZ?-eb). (KK-VA)

1260 WZBO NC, Edenton – 7/23 2050 noted with “Classic Country, WCNC and WZBO” ID by male announcer. Noted mixing with WWRC, WRIE, WPHB and a China Radio International outlet. (KK-VA)

1300 KPMI MN, Bemidji – 7/29 0719 noted with mentions of Bemidji and Weather Eye. Very poor signal, lost to WOOD. (JJR-MI)

1320 CJMR OH, Oakville – 7/18 0448 noted with “Overnights...1250 CJYE and 1320 CJMR” ID by female announcer, into softer tyme music. Poor signal; not common. (JJR-MI)

1330 CJYM SK, Rosetown – 8/11 0618 noted with “Classic Hits 1330 CJYM” ID between songs. Poor signal. (JJR-MI)

1340 KRBT MN, Eveleth – 7/29 0722 noted with local ads and “The Iron Range’s Sports Leader, The Fan 1340” ID. Poor signal. (JJR-MI)

1410 KRWB MN, Roseau -7/29 0655 noted with “for KRWB Sports...” into “Bad to the Bone” by George Thorogood and The Destroyers. Poor signal. (JJR-MI)

1450 KBMW MN, Breckenridge – 8/8 2245 noted with “1450 KBMW, The Voice of the Valley” sweep in with three others, into Classic Country format. Poor signal, but over others. (JJR-MI)

1450 KNSI MN, Saint Cloud – 8/9 0632 noted with “KNSI News Time is 5:32” mention, then faded seconds later. Poor signal. (JJR-MI)

1450 WHRY WI, Hurley – 8/9 0821 noted with call letters, Oldies format. Poor signal, lost to other stations. (JJR-MI)

1450 WRCO WI, Richland Center – 7/22 0420 noted with “Come Softly to Me” by The Fleetwoods, and liner mentioning “WRCO Richland Center” before fading out. Fair signal. (JJR-MI)

1460 KDWA MN, Hastings – 8/11 0735 noted with calls before PSA. Poor signal. (JJR-MI)

1460 KXPN NE, Kearney – 8/9 0759 noted with “of Omaha” and “Tri-Cities” mention before legal ID at 0800, into ESPN Sports Center. Poor signal, lost to KXNO. (JJR-MI)

1520 KSIB IA, Creston – 8/11 0800 noted with “We’re Southwest Iowa’s home...Fox Sports...1520 KSIB” ID. Poor signal with no sign of KOLM! #19 on 1520, #61 from Iowa. (JJR-MI)

1570 CKMW MB, Winkler – 7/18 0409 noted with “Country 88” mentions and “Manitoba” heard later on. Fair signal, booming in. This station will be going off the air, moving to 88.1 MHz in September. (JJR-MI)

1590 WIJK MD, Ocean City – 7/12 2057 noted with ad for Anthony’s Beer and Wine, located on the Coastal Highway in Ocean City, into Baltimore Orioles baseball play-by-play (vs. Toronto). Noted mixing with WFBR, WHGT, WAKR, WFTH and a station carrying a minor league baseball game. (KK-VA)

1590 WIXK WI, New Richmond – 8/12 0625 noted with “Classic Country 1590 WIXK” ID between songs. Very good and unusually strong! (JJR-MI)

1590 WPVL WI, Platteville – 7/22 0530 noted with promo for a trip to see the Brewers at Miller Park tagged with “The ESPN Double Team”, into weather forecast by female announcer before fading. Poor signal, not common. (JJR-MI)

1600 WZZW WV, Milton -7/14 2033 noted with “News Radio 800 WVHU” ID by male announcer. WVHU 800 is simulcast on WZZW. Noted mixing with WWRL and unidentified stations airing Spanish, music, Country music, Fox Sports Radio and Christian vocal music. (KK-VA)

DX TESTS

550 WDEV VT, Waterbury – 8/17 0000-0016 from the DX Test. I heard WDEV given in CW and sweep tones. Noted mixing with WGR, WIOZ and other talk station. (KK-VA)

EDITOR’S NOTES

This edition’s quote comes from contributor John Rieger: “Not much, but the AM band is still working in July, I guess!”

Thanks to John and Kraig for their reports! Congratulations to Kraig for hearing the WDEV test! I did not try for it, because I have a local (KTRS) parked on the frequency. When I null out KTRS, I can only get KTSA out of San Antonio, TX. Both KHMO and WLIQ are daytime regulars at my shack.

The start of another DX season is just around the corner, I'm sure you're all looking forward to it. I certainly am...I hope to hear AM #100 from Missouri and Tennessee this season. 73.

DX WORLDWIDE – WEST / TROPICAL BAND DX

Patrick Martin – PO Box 843 – Seaside OR 97138
E-mail: mwdxer@webtv.net all times UTC

Deadline, Sunday 9/8 noon PLT. Report what you hear, others are listening as well.

TRANS PACIFIC DX ROUNDUP

- 153 **RUSSIA**, Komosomolsk, R Rossii. 1148 7/24 weak signal with man slow talking man in RR. Noise. HPAW. (DV-WA)
+ 1157 7/26 very signal with man in RR W-SW ewe. (DV-WA)
+ 1204 7/29 good signal with woman and man with news in RR W-SW ewe. (DV-WA)
+ 1202 8/1 fair signal with man in RR W-SW ewe. (DV-WA)
+ 1159 8/2 fair signal with R Rossii ID followed by 5+1 pips at 1200. W-SW ewe. (DV-WA)
+ 1130 8/5 weak signal with woman in RR. W-SW ewe. (DV-WA)
+ 1147-1149 8/8 fair signal with man in RR. W-SW ewe. (DV-WA)
+ 1221 8/10 fair signal with classical music. W-SW ewe. (DV-WA)
+ Woman talking, weak and slightly offset from 279 at 1133 8/11. (NHP-BC)
+ 1156 8/17 very weak signal with woman in RR. Active whip. (DV-WA)
- 180 **RUSSIA**, Yelizovo, R Rossii. 1159 7/26 poor signal with woman in RR. W-SW ewe. (DV-WA)
+ 1207 7/29 fair signal with man in RR. W-SW ewe. (DV-WA)
+ 1203 8/2 good signal with woman in RR. W-SW ewe. (DV-WA)
+ 1146 8/5 very weak signal with man in RR. W-SW ewe. (DV-WA)
+ 1151 8/8 fair signal with man in RR. W-SW ewe. (DV-WA)
+ 1223 8/10 fair signal with classical music followed by man in RR. W-SW ewe. (DV-WA)
+ Woman in RR at 1209 8/11, poor to fair, //279. (NHP-BC)
+ 1158 8/17 very weak signal with music. W-SW ewe. (DV-WA)
+ 1155 very weak signal with man in RR. HPAW. (DV-WA)
- 189 **RUSSIA**, Petropavlovsk, R Rossii. 1228 8/8 very weak with music. W-SW ewe. (DV-WA)
+ 1225 8/10 fair signal with man in RR. W-SW ewe. (DV-WA)
+ Man talking, weak, //279 1134 8/11. (NHP-BC)
- 209 **ALASKA**, CYT, Yakataga. 1153 8/8 very weak signal with weather forecast. Active Whip. (DV-WA)
- 234 **RUSSIA**, Arman, R Rossii. 1206 8/2 fair signal with woman in RR. W-SW ewe. (DV-WA)
+ 1231 8/8 weak signal with man in RR. W-SW ewe. (DV-WA)
+ 1245-1253 8/10 weak with man in RR followed by classical music. W-SW ewe. (DV-WA)
+ Man in RR 1134 8/12, good strength, IDed earlier at lower strength //279. (NHP-BC)
- 279 **RUSSIA**, Yuzhno-Sakhalinsk, R Rossii. 1154 7/26 fair signal with woman singing. NW ewe. (DV-WA)
+ Woman in RR, fair strength 1117 7/27, man in RR 1128, and heard on and off until as late as 1209. (NHP-BC)
+ 1208 7/29 good signal with man/woman in RR. R Rossii ID at 1210. W-SW ewe. (DV-WA)
+ 1207 8/1 fair signal with man in RR. NW-Ewe. (DV-WA)
+ 1208 8/2 fair signal with woman in RR. W-SW ewe. (DV-WA)
+ 1132 8/5 good signal with woman/man in RR. W-SW ewe. (DV-WA)
+ 1154 8/8 good signal with man in RR. W-SW ewe. (DV-WA)
+ 1200 8/17 weak signal with 5+1 pips followed by woman in RR. Active whip. (DV-WA)
- 394 **ALASKA**, KAK20, Kodiak. 1135 8/5 weak signal with weather forecast. Active Whip. (DV-WA)
+ 1156 8/8 poor signal with weather forecast. W-SW ewe. (DV-WA)
- 531t **NEW ZEALAND**, Auckland, PI R. Man talking poor to fair, 1238 8/7 definitely not DU EE, then into Pacific Islands choral mx; presumed PI Radio. (NHP-BC)
- 567 **NEW ZEALAND**, NZR national. 1245-1247 8/10 weak seemed to match live stream. Soon faded. W-SW ewe. (DV-WA)
- 594 **AUSTRALIA**, 3WV, Horsham. Woman talking //612 at 1231 8/5, weak at best. (NHP-BC)
- 594 **JAPAN**, JOAK, Tokyo, NHK1. 1210 8/1 assuming the station with very weak signal with man speaking. Moderate KUGN splatter. NW-ewe. (DV-WA)
+ 1228-1230 8/2 very weak signal with man in JJ. W-SW ewe. (DV-WA)
- 612 **AUSTRALIA**, 4QR, Brisbane. Very weak w/man talking, but ABC fanfare at 1200 7/4 was recognizable. (NHP-BC)
- 684 **NEW ZEALAND**, Gisborne. 1252-1255 8/1 guessing to be the station with very weak signal and moderate splatter with religious music. Soon faded. W-SW ewe. (DV-WA)

- 738 **TAHITI**, Papeete, R Polynesie/France Inter. Woman in FF 1206 7/10, then in Sergeant Pepper's Lonely Hearts Club Band, back to the woman talking at 1210, fine readability, maybe the splatter let up a bit (NHP-BC)
+ 1117 7/22 weak signal with woman in FF. Moderate splatter. Heard on all five antennas, best on Sky wire loop. Still around at 1229 with music, fair signal. (DV-WA)
+ 1228-1230 7/24 weak signal with woman in FF with KCBS splatter. Sky wire loop. (DV-WA)
+ 1233 7/26 weak signal with music. Sky wire loop. (DV-WA)
+ 1247 7/29 very weak audio as band fades. Assuming Tahiti. W-SW ewe. (DV-WA)
+ 1227 8/1 fair signal at times with organ music. Woman in FF at 1232. Sky wire loop. (DV-WA)
- 774 **AUSTRALIA**, 3LO, Melbourne. 1202-1204 7/24 believed to be the station with weak signal with woman/man reading news. Back at 1208 briefly with man talking. Best on W-SW ewe. Heard last year on the 07/24. (DV-WA)
- 774 **JAPAN**, JOUB, Akita, NHK2. JJ talk by man, poor to fair strength, savaged by splatter 1154 7/20; definite NHK pips at 1200. Also noted poor to fair, 1141 7/29, w/man in JJ. (NHP-BC)
+ 1225 7/22 very weak signal with man in JJ. Moderate splatter. W-SW ewe. (DV-WA)
+ 1222-1226 8/17 poor to very weak signal with man in JJ. NW ewe. (DV-WA)
- 828 **AUSTRALIA**, 3GI, Sale. 6 very weak pips at 1200 7/24, followed by recognizable ABC fanfare, but still weak. (NHP-BC)
- 828 **JAPAN**, JOBB, Osaka. Just the barest hint of NHK pips at 1200 Jul 20, good carrier before then. (NHP-BC)
- 837 **NEW ZEALAND**, Kaitaia/Whangarei, R New Zealand National. Woman talking, very weak 1244 8/7, but //756, which was stronger. (NHP-BC)
- 891 **AUSTRALIA**, 5AN, Adelaide. 1238 7/22 assuming the station with very weak signal and man talking in EE. W-SW ewe. (DV-WA)
+ 1225 7/29 assuming the station with very weak signal with man in DU accented EE talking. Soon faded. W-SW ewe. (DV-WA)
+ 1334-1338 8/1 assuming the station with weak signal with man in DU accented EE. Sky wire loop. (DV-WA)
+ 1234 8/8 assuming the station with fair signal at times with talk. Sky wire loop. (DV-WA)
- 918 **NEW ZEALAND**, New Plymouth / Timaru, R New Zealand National. Woman and man talking 1242 8/7, //756; not heard at home before, and the catch of the morning. (NHP-BC)
- 972 **REP KOREA**, HLCA, Dangjin, KBS Hanminjok Bangsong. Briefly poor to fair w/man and woman in KK 1211 8/11. (NHP-BC)
- 1008 **UnID**. 1213 7/29 poor signal with bits of audio making it through. A tentative Japan was heard on this channel last year. W-SW ewe. (DV-WA)
+ 1233-1237 8/2 poor audio at times. Sky wire loop. (DV-WA)
- 1053 **REP KOREA**, jammer. Weak and barely recognizable at its "best" 1234 8/11. (NHP-BC)
+ 1247 8/17 jammer with weak signal. NW ewe. (DV-WA)
- 1098 **NEW ZEALAND**, Christchurch, Newstalk ZB. 1254-1257 8/10 weak signal with Pop music. Live stream revealed man speaking with loud Pop music background. My reception I could hear the music, but not the man talking. Pop music matched the live stream. Gone after 1257. Moderate splatter. W-SW ewe. (DV-WA)
- 1116 **AUSTRALIA**, 4BC, Brisbane. Man in DU EE poor to fair 1152-1158 7/25, faded down as hour approached, but heard 6 equal pips and a 4BC ID by man... barely. (NHP-BC)
- 1116 **AUSTRALIA**, 3AK or 4BC? Guessing one of these stations at 1123-1128 7/24 with very weak audio at times. Man in EE. W-SW ewe. (DV-WA)
+ 1231-1232 7/25 brief poor audio again this morning. Heavy splatter. Man in EE. (DV-WA)
- 1116 **UnID**. 1115-1126 8/5 very weak signal. Man speaking in EE? Tried 3 live streams from the two Aussies and one New Zealand station on this channel. No matches. W-SW ewe. (DV-WA)
- 1287 **UnID**. 1219 7/25 poor signal with man talking. Signal to poor to ID language. JOHR only station heard here is past. W-SW ewe. (DV-WA)
- 1287 **JAPAN**, JOHR, Sapporo. Man in JJ briefly poor to fair 1231 on 8/9. (NHP-BC)
- 1413 **UnID**. 1236 7/25 threshold audio briefly. Vacant channel normally here. W-SW ewe. (DV-WA)
- 1476 **UnID**. 1239 7/25 another threshold audio. W-SW ewe. (DV-WA)
+ 1232 7/29 poor signal with music. Moderate splatter. China heard here last season. W-SW ewe. (DV-WA)
- 1503 **AUSTRALIA**, 2BS, Gold. 1242 7/25 very weak with pop music. Guessing with 2BS. Heard last season. Sky wire loop. (DV-WA)
- 1503 **NEW ZEALAND**, Sport R. 1235 7/24 assuming the station with very weak signal with man talking. W-SW ewe. (DV-WA)
+ 1240-1242 8/5 weak at times with man doing interview. Matched Sport R live stream. W-SW ewe. (DV-WA)
+ 1207 8/8 assuming the station with very weak signal with man talking. W-SW ewe. (DV-WA)
+ 1237 8/10 very weak signal that seemed to match live stream broadcast. Still around at 1303. W-SW ewe. (DV-WA)
- 1503 **UnID**. 1205-1212 8/5 very weak w/music at times. One of the Aussies? W-SW ewe. (DV-WA)

- 1566 **REP KOREA**, HLAZ, Cheju, FEBC. 1141 7/24 fair with woman in JJ. W-SW ewe. (DV-WA)
 + 1212 7/25 assuming the station with poor signal with man speaker. W-SW ewe. (DV-WA)
 + 1149-1152 7/26 weak signal with woman in JJ. W-SW ewe. (DV-WA)
 + 1217 7/29 fair signal with man in CC. W-SW ewe. (DV-WA)
 + 1407 8/1 very weak signal with man in CC? W-SW ewe. (DV-WA)
 + 1213 8/2 good signal with man in CC. NW ewe. (DV-WA)
 + 1218 8/5 weak signal with man in CC. NW ewe. (DV-WA)
 + 1200 8/8 weak signal with man in CC. W-SW ewe. (DV-WA)
 + 1123 8/10 weak signal with man in CC. W-SW ewe. (DV-WA)
 + Choir mx and man in JJ at 1236 8/11, fair strength; heard earlier in CC, but not as strong, though the changeover to the pattern for the JJ service didn't deliver much signal today, unlike 8/9, when this popped up nicely at 1230 with FEBC and HLAZ etc IDs, mention of Nihongo, and into "What a Friend I Have in Jesus" at good volume on the piano, faded down to where the lady wishing me "kombon wa" was barely audible. (NHP-BC)
 + 1218 8/17 good signal with man in EE with translation to CC. NW ewe. (DV-WA)
 1566 **UnID**. Likely 3NE, two men talking DU EE, one on phone 1214 7/18; one of the most consistent signals this morning. (NHP-BC)
 1575 **THAILAND**, Rasom, VOA. 1225 7/26 fair signal with woman in Asian language. W-SW ewe. (DV-WA)
 + 1222 8/2 very weak signal with woman in Asian language. W-SW ewe. (DV-WA)
 + 1204 8/8 fair signal with woman in Asian language. W-SW ewe. (DV-WA)
 + 1231 8/17 weak signal with man in Asian language. NW ewe. (DV-WA)
 1701 **AUSTRALIA**, Brisbane, R Brisvaani. 1240-1242 7/29 nearly fair signal at times with Mexican station splatter. Woman singing Indian music. Matched live stream. Heard last season, but was not able to ID. W-SW ewe. (DV-WA)
 1701 **AUSTRALIA**. 1306-1314 8/10 two stations received. Assuming one to be V of Charity and other to be R Brisvaani. Both signals were weak and faded after 1312. Listened to the live streams, but signals faded out to soon to match. S-SW ewe. (DV-WA)

PAN AMERICAN DX ROUNDUP

- 580 **MÉXICO**, XEMU, Piedras Negras, Coahuila. 0442 8/1, XEMU has overtaken WIBW Topeka, mentioning "los dos Laredos," timecheck, "La Rancherita del Aire." I suppose it covers Laredos too with non-directional day & night signal, but it's tough luck for WIBW, despite beaming our way at night to protect WILL. I consulted the 2005 NRC Pattern Book, but a new one has just been published! Ordering details: <http://www.nrcdxas.org/catalog/books/index1.html#APB>. (GH-OK)
 690 **MÉXICO**, XERG, Monterrey NL. 0544 7/28, break in music for "La R-G" promo for 7-9 de la mañana show. XERG allegedly 1 kW at night. Nothing much from KISM El Paso, and the KGGF open carrier seems still to be there. (GH-OK)
 710 **MÉXICO**, XEDP, Ciudad Cuauhtémoc, Chih. 0558 8/4, still trying to confirm the source of the off-frequency station producing a LAH at other 710s: slightly on the low side, the Chihuahua anthem is playing. It finishes at 0600 and the het goes off. The only Chih is XEDP Ciudad Cuauhtémoc. Yet I hear it other times with no het, such as 1140 UT August 4 with 20:6 timecheck, jingle as "La Ranchera de Cuauhtémoc." So I remain uncertain. (GH-OK)
 710 **UnID**. 0503 8/1, really annoying low audible heterodyne (LAH) produced by off-frequency station, loops NE/SW, and I continue to suspect XEDP Cuauhtémoc, altho there are three or four other XEs in that general direction. (GH-OK)
 + 0605 8/3, SS M&W chatting, making a SAH, not a LAH, but soon losing out to two US stations, one with Red Eye, one with C2CAM (as always giving different phones for east and west of the Rockies, unlike any other talk show?). 710 previously had been bothered by low audible heterodyne from SW/NE, but no sign of it now, so that station probably XE, has either fixed it or signed off by now, after midnite in most of Mexico. XEDP usually manages to dominate among the Mexicans on 710. Don't think it was Cuba now. (GH-OK)
 730 **MÉXICO**, XEHB, Hidalgo del Parral. 0608 8/15, choral Mexican NA is playing, apparent long-version if it started circa 0600; 0609 short Chihuahua state anthem with choir, but mainly male soloist; listen for keyword "chihuahuense" not to mix it with other states. Plenty of QRM tonite rather than often dominant signal, so maybe not running day power of 50 kW. 0610 full ID as Ke Buena, XEHB on FM, and AM 730, street address in Hidalgo del Parral; mentions Radiorama group "la cadena que une a México;" "no hay más; estamos contigo" and into banda music. (GH-OK)
 850 **MÉXICO**, XEM, Chihuahua, Chih. I had tuned in again before 0600 8/5 to rock music in EE with KOA easily nulled; fortunately roused at 0607 to hear YL non-ID as "Milenio Radio en medio de la noche," so it's XEM as suspected. I haven't got a handle on what format Milenio employs, as have heard a variety. Anyhow, this one is not "MEX/NWS" as in IRCA Mexican Log 2012; it does have the correct slogan, unlike WRTM 2013 showing the former "Renacimiento 850," Cantú just shows: XEM Milenio Radio + FM 103.7 5000 500 while IRCA and WRTM claim the powers are 5000/1000. (GH-OK)

- 850 **UnID**. 1144 8/4, rock music in EE is audible with KOA nulled (hardly necessary weak, SAH), fades completely out at 1145, surges 1148, YL partial ID as "Radio Alegre," fades out again. Looped approx. NE/SW. Could be US or Mexican? No such slogan found on 850 in any of the lists or general Googling. (GH-OK)
 970 **MÉXICO**, XEJ, Ciudad Juárez, Chih. 0524 7/17, soon as I tune across, music stops and "La Jota Mexicana, 9-70, nunca igualada," ie XEJ. (GH-OK)
 + 0504 7/20, full ID with street address for XEJ, Juárez, "La Jota Mexicana." I often notice the NA playing at 0500 next to the Fox-hole I am checking from 960 KGWA and assume it's XEJ, now confirmed. (GH-OK)

TROPICAL BAND DX ROUNDUP

- 1725 **PAPUA NEW GUINEA**, GA Beacon. 1244 8/2 fair with slow code. W-SW ewe. (DV-WA)
 + 1230 8/5 fair signal with slow code. W-SW ewe. (DV-WA)
 2325 **AUSTRALIA**, Tennant Creek, ABC NTS (VL8T via Tennant Creek.) 1240 8/5. 2 males, possibly a correspondent report, barely above imagination level. Nothing heard on other // this band. (RB-AZ)
 + 1211 8/8 fair signal with music and woman in EE. W-SW ewe. (DV-WA)
 2485 **AUSTRALIA**, Katherine. 1213 8/8 good signal with Pop music. W-SW ewe. (DV-WA)
 2850 **DPR KOREA**, Pyongyang, KCBS. 1216 8/8 very good signal with woman/man in KK. W-SW ewe. (DV-WA)
 + 1215 8/14. Long monologue with woman. Fair. (RB-AZ)
 3250 **DPR KOREA**, Pyongyang. 1220 8/8 Voice of Korea with good signal and music. W-SW ewe. (DV-WA)
 3320 **DPR KOREA**, Pyongyang, BS. 1150 8/15. March music, woman in KK. I don't actually show them listed at this particular hour, but the style and music are a giveaway. Poor and fair on peaks. (RB-AZ)
 3385 **PAPUA NEW GUINEA**, R East New Britain. 1111 8/6. Long monologue by woman in Pidgin. Fair with T-storm QRM. (RB-AZ)
 3925 **JAPAN**, R Nikkei-1. 1300 8/5. Good with M in JJ and running with very good //6055. (RB-AZ)
 3945 **JAPAN**, R Nikkei-2. 1120 8/5. Vocal music in JJ, very good, but with some mixing with 80m ham. Rechecks at 1245 had them still very good with Harry Belafonte; also on, but fading, at 1305. (RB-AZ)
 4055 **GUATEMALA**. R Verdad. 1140 8/15. Hymn music and very good. (RB-AZ)
 4557 **REP KOREA**, V of the People. 1115 8/13. Female in KK to music, with DPRK jamming heard as overlay. Heard unjammed // on 3480. (RB-AZ)
 4750 **INDONESIA**, RRI (Makassar.) 1255 8/5. Music and talk in vernacular. Good. (RB-AZ)
 4835 **AUSTRALIA**, ABC - NTS. 1130 8/15. Mixing in with a mess with what sounds to be a co-channel station and a clicking sound. Fanfare music and apparent news by woman with report from man correspondent. Noted //s on 2525 and 2485, both barely threshold. (RB-AZ)
 4940 **CHINA**, V of the Strait. 1130 8/6. Long talk by man in CC. (RB-AZ)
 + 1110 8/13. Man in CC. (RB-AZ)

THANKS TO THESE REPORTERS

- DV-WA **DENNIS VROOM**, Kalama WA
 JRC NRD 545, NW ewe + sky wire loop 880', High Performance Active Whip (HPAW)
 GH-OK **GLENN HAUSER**, Enid OK
 Mostly DX-398 with internal antenna only, or Sony SRF-59
 NHP-BC **NICK HALL-PATCH**, 1538 Amphion St, Victoria BC V8R 4Z6 nhp@ieeee.org
 Drake R8, RFSpace NetSDR; RFSpace SDR-14 running DX Fishbarrel program; north Flag antenna, west FLG-100 antenna, 1m indoor box loop, 14m sloper, DXP-3 phasing unit.
 RB-AZ **RICK BARTON**, El Mirage, AZ
 Drake R8, Hammarlund HQ-200, Grundig Satellit 750, outdoor Slinky and random wire

DX WORLDWIDE – EAST

Eric Bueneman (NØUIH) – 631 Coachway Lane – Hazelwood, MO 63042-1347
E-mail: n0uiheric@aol.com all times UTC Deadlines: Wednesday 0100 UTC

Deadline: Wednesday, September 2 at 0100 UTC.

TRANS-ATLANTIC LOGS

- 153 **ALGERIA** (t) Chaine 1, Bechar – 7/31 0058 huge, apparently blank carrier; probably this. (Connelly O-MA)
 162 **FRANCE** France-Inter, Allouis – 7/31 0058 noted with female announcer, followed by male announcer in French, into soft vocal music. Fair signal. (Connelly O-MA)

171 **MOROCCO** Radio Mediterranee Internationale, Nador – 7/31 0059 noted with instrumental music, Arabic talk by male announcer. Good signal. (Connelly O-MA)

198 **UNITED KINGDOM** BBC Radio 4 Droitwich, et al. – 7/31 0058 noted with interview mentioning keeping your mind active; fair signal. (Connelly O-MA)

225 **POLAND** Polskie Radio, Konstanynow – 7/31 0059 noted with pop-dance music with a Reggae influence; fair signal. (Connelly O-MA)

234 **LUXEMBOURG** RTL Junglinster – 7/31 0100 noted with jingle ID and male announcer in French. Good signal. (Connelly O-MA)

252 **IRELAND** RTE Radio 1, Clarkestown – 7/31 0100 noted with news item about “two boys found in the boot of a car”; fair signal. (Connelly O-MA)

549 **ALGERIA** Jil FM, Les Trembles – 7/31 0101 noted with male announcer in Arabic; fair signal. (Connelly O-MA)

621 **CANARY ISLANDS/SPAIN** RNE Radio 1 synchronos – 7/31 0101 noted with Spanish news talk. Noted with slop from WZON 620. (Connelly O-MA)

684 **SPAIN** RNE Radio 1, Sevilla – 7/31 0101 noted with male announcer in Spanish, 5+1 pips; briefly over slop from WRKO 680. (Connelly O-MA)

783 **MAURITANIA** Radio Mauritanie, Nouachott – 7/31 0029 noted with two male announcers in Arabic; fair signal. (Connelly O-MA)

783.54 **UNIDENTIFIED** – 7/31 0029 noted with weak carrier on the high side of Mauritania on 783 kHz. (Connelly O-MA)

837 **CANARY ISLANDS/SPAIN** COPE synchronos – 7/18 0050 noted with male announcer in Spanish; fair signal. (Connelly O-MA)

863.919 **IRAN** (t) – 7/31 0059 growl against France on 864 kHz, listed as Iran on “mwoffsets” list. (Connelly O-MA)

864 **FRANCE** France Bleu, Villebon-sur-Yvette – 7/31 0059 noted with Norah Jones’ “Don’t Know Why”; poor to fair signal with growl from presumed Iran on 863.919 kHz. (Connelly O-MA)

891 **ALGERIA** Chaîne 1, Algiers – 7/31 0045 noted with a big carrier, but poor audio. (Connelly O-MA)

909 **UNITED KINGDOM** BBC Radio 5 synchronos – 7/31 0046 noted with bits of British-accented talk by male announcer; in slop from WAEI 910. (Connelly O-MA)

945 **FRANCE** France Info, Toulouse – 7/31 0045 noted with male and female announcers in French; good signal. (Connelly O-MA)

981 **ALGERIA** Radio Algerienne Chaîne 2, Algiers – 7/31 0029 noted with male Arabic chanting and percussion; good signal. (Connelly O-MA)

999 **SAUDI ARABIA** BSKSA Holy Qu’ran program, Tabuk – 7/31 0102 noted with Koranic a cappella male vocal; good signal over Spain. (Connelly O-MA)

999 **SPAIN** COPE synchronos – 7/31 0102 noted with Spanish news by male announcer; a bit under Saudi Arabia. (Connelly O-MA)

1053 **UNITED KINGDOM** TalkSport synchronos – 7/31 0045 noted with telephone talk about something happening on Sunday (7/28); to fair peak over slop from WEPN 1050. (Connelly O-MA)

1089 **UNITED KINGDOM** TalkSport synchronos – 7/31 0031 noted with advertisement for something described as “award winning” and “amazing”; poor signal in mix with a second station that seemed to have Koranic chanting. (Connelly O-MA)

1107 **SPAIN** RNE Radio 5 synchronos – 7/31 0030 noted with interview by two men in Spanish; fair to good signal. (Connelly O-MA)

1152 **SPAIN** RNE Radio 5 synchronos – 7/31 0045 noted with echoey Spanish talk; through slop from WWDJ 1150. (Connelly O-MA)

1206 **FRANCE** France Info, Bordeaux – 7/31 0046 noted with male announcer in French; to good peak. (Connelly O-MA)

1215 **UNITED KINGDOM** Absolute Radio synchronos – 7/31 0029 noted with Absolute Radio ID; fair signal over Spain. (Connelly O-MA)
+ 7/31 0045 noted with the Talking Heads’ “Once In a Lifetime”; over low het growl. (Connelly O-MA)

1224 **SPAIN** COPE synchronos – 7/31 0100 noted with news in Spanish; poor to fair signal. (Connelly O-MA)

1242 **FRANCE** France Info, Marseille – 7/31 0030 noted with female announcer in French; good signal with semi-local WBUR 1240 in westward cardioid antenna deep null. (Connelly O-MA)

1269 **GERMANY** Deutschlandfunk, Neumunster – 7/31 0030 noted with male announcer in German, short bit of classical music; in slop from CJCB and WTSN on 1270 kHz. (Connelly O-MA)

1278 **IRAN** IRIB 1 Kermanshah – 7/31 0045 noted with Middle Eastern male vocal; poor to fair signal. (Connelly O-MA)

1296 **SUDAN** SNBC Reiba – 7/31 0000 noted with news in Arabic by male announcer. (Connelly O-MA)
+ 7/31 0045 noted with Arabic male vocal backed by strings; good signal. (Connelly O-MA)

1305 **SPAIN** RNE Radio 5 synchronos – 7/31 0030 noted with two male announcers in Spanish //1098 kHz. Poor signal. (Connelly O-MA)

1305.098 **IRAN** IRIB Bushehr – 7/31 0030 noted with growl against Spain 1305 kHz; probably this. (Connelly O-MA)

1314 **SPAIN** RNE Radio 5 synchronos – 7/31 0100 noted with 5+1 pips, “Radio Nacional de España...informativos” ID; to good peak. (Connelly O-MA)

1341 **NORTHERN IRELAND** BBC Radio Ulster, Lisnagarvey – 7/31 0046 noted with male announcer in English; mixing with unidentified music station. (Connelly O-MA)

1377 **FRANCE** France Info, Lille – 7/31 0030 noted with France Info theme, female announcer in French; fair signal. (Connelly O-MA)
+ 7/31 0101 news by female announcer in French; LOUD signal! (Connelly O-MA)

1413 **SPAIN** RNE Radio 5 synchronos – 7/30 2359 noted with female announcer in Spanish and music; to fair peak. (Connelly O-MA)

1422 **ALGERIA** Radio Algerienne, Algiers – 7/18 0051 noted with a cappella male Arabic vocal; dominant signal. (Connelly O-MA)
+ 7/31 0031 noted with North African pop music; LOUD signal! (Connelly O-MA)

1422 **GERMANY** Deutschlandfunk, Heusweiler – 7/31 0100 noted with female announcer in German; under Algeria. (Connelly O-MA)

1485 **SPAIN** SER synchronos – 7/31 0059 noted with male announcer in Spanish; poor signal. (Connelly O-MA)

1494 **FRANCE** France Info synchronos – 7/31 0030 noted with France Info theme //1377 kHz; poor signal. (Connelly O-MA)

1521 **SAUDI ARABIA** BSKSA Duba – 7/18 0050 noted with calm/soft-voiced man in Arabic; fair signal. (Connelly O-MA)
+ 7/31 0031 noted with female announcer in Arabic; music segment, followed by male announcer in Arabic. Good signal. (Connelly O-MA)

1575 **UNITED ARAB EMIRATES** Radio Farda, Al Dhabiya – 7/31 0002 noted with Middle Eastern pop music; over other stations. (Connelly O-MA)
+ 7/31 0030 noted with 3+1 pips, male announcer with Radio Farda ID. Good signal. (Connelly O-MA)

1584 **SPAIN** SER synchronos – 7/31 0101 noted with echoey Spanish talk. (Connelly O-MA)

PAN-AMERICAN DX

580 **PUERTO RICO** WKAQ San Juan – 7/30 2359 noted with fast Spanish talk and “WKAQ” IDs. (Connelly O-MA)

670 **CUBA** Radio Rebelde, CMQ Arroyo Arenas – 7/18 0059 noted with political speech in Spanish //1180 kHz; good signal. (Connelly O-MA)

690 **BRAZIL** Radio Dragão do Mar/Radio Shalom, ZYH587 Fortaleza – 7/31 0001 noted with talk in Portuguese by a male announcer; mixing with CKGM. (Connelly O-MA)

750 **VENEZUELA** RCR, YVKS Caracas – 7/31 0030 noted with “RCR presenta...noticias”; fair signal, but noisy. (Connelly O-MA)

760 **BRAZIL** Radio Uirapuru, ZYH588 Fortaleza – 7/31 0000 noted with talk in Portuguese by male announcer, mention of Fortaleza; to fair peak after WVNE sign-off. (Connelly O-MA)

860 **ST. KITTS and NEVIS** Voice of Nevis, Bath Village – 7/18 0050 noted with Caribbean-accented male announcer on phone-in show; to fair peak. (Connelly O-MA)

940 **PUERTO RICO** WIPR San Juan – 7/18 0100 noted with “San Juan, Maxima, Nueve Cuarenta” ID; good signal. (Connelly O-MA)

1110 **VENEZUELA** Radio Carupano, YVQT Carupano – 7/18 0059 noted with “en Venezuela, Carupano” ID; over others. (Connelly O-MA)

1160 **BERMUDA** VSB3 Hamilton – 7/18 0059 noted with “BBC World Service” net ID by female announcer; mixing with WOBM. (Connelly O-MA)

1180 **CUBA** Radio Rebelde (CMBT Villa Maria and others) – 7/18 0059 noted with political speech by man //670 kHz; good signal. (Connelly O-MA)

1220 **BRAZIL** Radio Globo, ZYJ258 Rio de Janeiro – 7/31 0001 noted with Globo ID, sweep tones, mixing with WWSF. (Connelly O-MA)
+ 7/31 0046 noted with fast Portuguese talk by male announcer; loud at times over WHKW and WWSF. (Connelly O-MA)

1259.85 **UNIDENTIFIED** – 7/31 0030 noted with low growl against CKHJ and WMKI; not known if of foreign or domestic origin. (Connelly O-MA)

- 1610 **ANGUILLA** Caribbean Beacon, The Valley – 7/31 0029 noted with U.S.-accented female preacher (Melissa Scott?-eb); good signal over others. (Connelly O-MA)
- 1620 **CUBA** Radio Rebelde synchros -7/31 0030 multiple echoey Rebelde outlets with talk by male announcer //1180 kHz. (Connelly O-MA)

THANKS TO THIS EDITION'S CONTRIBUTOR

(Connelly O-MA) **Mark Connelly (WA1ION)**, Orleans, Cape Cod, MA
 Coordinates: 41 degrees 48:43 N, 69 degrees 57:22 W
Receiver: Microtelecom Perseus
Antenna: cardioid-pattern Micro-SuperLoop on car roof, square, 2 meters per side, with Clifton Laboratories Z10130A amp on east bottom corner to speaker wire to 2:1 transformer to W7IUV amp, and 9:1 transformer on west corner to speaker wire to 500-ohm null-adjust potentiometer.
 See http://www.qsl.net/wa1ion/car_roof_loop.htm

EDITOR'S NOTEBOOK

Thanks to Mark for another great report from Cape Cod! This first all-electronic edition will allow us to use slightly larger type again, as the page limits are removed. That will definitely allow us room for more DX from more reporters than in the hardcopy days. The DX season is about to begin! 73.

DX FORUM

Richard C Evans – 3908 Grand Oak Ave Apt 4 – Indianapolis IN 46237
E-mail: REvans5435@yahoo.com DEADLINES: Saturdays

Deadlines: 9/7 9/19 9/28 10/3 10/12 10/19 10/26 11/2 11/9 11/16 11/23

Rick Dau, 2302 South 14th Street, Omaha, Nebraska 68108

The 5th DX mid-AMerica Get-Together (and first in almost 15 years) will be held on Saturday Sept. 14th at the Ramada Inn located at 902 West Killarney Street in Urbana, Illinois. The GTG will begin at 1 p.m. Central Time, and refreshments will be provided. To get there, simply take Interstate 74 from the east or west, turn south at Exit #183 onto Lincoln Avenue, go about 1 block, and the Ramada Inn will be on the northwest corner of the intersection of Killarney Street and Lincoln Avenue (there is a Circle K convenience store on the southwest corner of that intersection). As has been the case with past DXMA get-togethers, this will be just a 1-day event and will last into the evening as long as folks stick around. This is an all-band event, and those who want to bring radios, QSLs, logbooks, bumper stickers to trade, etc., are welcome to do so. If there is enough interest, we will try to go out for dinner around 5:30 or so. Please feel free to visit the DX mid-AMerica website (expertly maintained by DXMA's founder, John Rieger) at <http://www.angelfire.com/wi/dxmidamerica>. Your hosts for this event are Rick Dau and Earl Higgins. If you have any further questions about the GTG, please feel free to e-mail Rick at drummer1965usa@yahoo.com or call 402-415-4743. See you on the 14th!

Richard Evans, Apt. 4, 3908 Grand Oak Avenue, Indianapolis, Indiana 46237-4694

I would have liked to have been in Milwaukee this past weekend but it turned out to be the best time to have my grandson here with me. That's a first time for us, so I didn't want to pass the chance up. I keep saying maybe next year. Urbana is a lot closer to me but, as with Milwaukee, it means taking the weekend off from work so I haven't decided yet. In the past, Labor Day weekend has been the start of my DX season so it's time to crank up the radio again. I did some cleaning this spring and found an IRCA Foreign Log, Vol. 5 (1977) and 6th edition of the NRC Domestic Log (1982) packed away. Some interesting reading, even if a little dated...hi. I will be up in Michigan City, IN for a day this week but won't have a radio with me. I might have the car radio on as I come back. 73.

VERIFICATION SIGNERS

Stephen S Howe – 9 Warner Dr – St Albans VT 05478-1575
E-mail: showe@albany.edu

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

CONTRIBUTOR

TMJ **Tom Jasinski**, Joliet IL; amdxe@core.com

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

1230 KSEY Jim Pogue, QSL Mgr; P O Box 3777, Memphis TN 38173; Q+; 98; TMJ
 [Station in Seymour TX; DX Test]

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 e-

mail; 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, e-mail, or visit; n = Return postage not used; r = Return postage returned

NOTES: * [For this column] = None

No tips were submitted by the deadline for my June Verification Signers column, so there was no June column. Thanks to Tom, we have an August column. This column was prepared on 7/29/13. 73, SSH.

SPECIAL FEATURE

THE 2013 IRCA COUNTRIES LIST

Compiled by Bruce Portzer, Countries List Chairman

Here is the latest version of the IRCA Countries List. This list was originally developed in the 1960's as a guide for club members in their quest for foreign medium wave targets. It has since been updated periodically. The list is organized into three sections: active, inactive, and deleted countries. For each country, I've listed its continent in brackets, and noted any former or alternative names. Any date restrictions are also noted (such as when the country was formed or ceased to exist). There are also a few instances where I've added comments clarifying a country's status.

Major change since last year include the addition of South Sudan, and the splitting of the Netherlands Antilles into several DX "countries".

A place qualifies for inclusion on the list if it meets one or more of the following criteria:

1. It is internationally recognized as independent, either because it is a member of the United Nations or International Telecommunications Union (ITU), or has diplomatic relations with multiple countries.
2. It has a high degree of internal autonomy. This characteristic can be for historical reasons, such as the various parts of the UK, or established through formal agreement, such as Hong Kong or Macao. A portion of a country may also qualify based on de facto autonomy, even if the parent country does not recognize it as such. Taiwan, for example. This qualification is largely a judgment call based on the amount of self-rule and political stability.
3. It is separated from the rest of the country by at least 200 km of open water (no other islands between it and the mainland), or 100 km of land, such as Hawaii or Alaska.
4. It is a colony, dependency, protectorate, or other overseas territory, such as Guam or Gibraltar. These places will only be listed if they currently have a MW radio station, have had one or more stations in the past, or have sufficient residents (permanent or temporary) to justify broadcast facilities. As a result, this list doesn't include most of the small islands and other uninhabited territories that appear, for example, on the ARRL list.
5. It is under international or other special administrative control, such as Antarctica.
6. It has historically been considered a separate DX "country", even though it doesn't seem to meet any of the above criteria ("We do it that way because that's the way it's always been done").

Country list junkies are welcome to examine the following four lists. Each has its own set of criteria, resulting in some interesting differences and similarities.

- **The ARRL Country List:** This list is used mainly for issuing DX Century Club awards. The criteria are well-thought out, but hotly debated in the ham community. It includes a large number of obscure uninhabited specks of land that would otherwise go unnoticed.
- **The NASWA Radio Country List:** This is a list of countries with active shortwave broadcasters, past and present.
- **The Travelers' Century Club List:** This organization gives certificates to those who have visited at least 100 countries. The most recent list has 350 places listed.
- **How many countries are there?** This list analyzes several sources, including the ARRL/DXCC and TCC lists, and concludes that there could be anywhere from 191 to 493 countries, depending on what you count.

Any comments or questions on the list should be addressed to bpportzer@comcast.net

ACTIVE COUNTRIES

The following countries currently have or are believed to have active medium wave broadcast stations.

Afghanistan [AS]
Alaska [NA]
Albania [EU]
Algeria [AF]
Andaman & Nicobar Islands (part of India) [AS]
Angola [AF]
Anguilla [NA]
Antigua & Barbuda [NA]
Argentina [SA]
Armenia [AS]
Aruba [SA] - receptions before 1-1-86 count as Netherlands Antilles
Australia [OC]
Azerbaijan [AS]
Azores [EU]
Bahamas [NA]
Bahrain [AS]
Balearic Islands (part of Spain) [EU] - includes Majorca
Bangladesh (formerly East Pakistan) [AS]
Barbados [NA]
Belarus (formerly Byelorussia) [EU]
Belgium [EU]
Benin (formerly Dahomey) [AF] - after 8-1-60
Bermuda [NA]
Bolivia [SA]
Bonaire [SA] - became a separate "country" 10-10-10.
Bosnia-Herzegovina [EU] - receptions before 10-15-91 count as Yugoslavia
Botswana (formerly Bechuanaland) [AF]
Brazil [SA]
British Indian Ocean Territory (includes Diego Garcia, aka Chagos Islands) [AS]
British Virgin Islands [NA]
Brunei Darussalam [AS]
Bulgaria [EU]
Burkina Faso (formerly Upper Volta) [AF] - after 8-5-60
Cambodia (formerly Kampuchea) [AS]
Canada [NA]
Canary Islands [AF]
Central African Republic [AF] - after 8-13-60
Ceuta (part of Spain, located in Morocco) [AF]
Chad [AF] – One AM, operates sporadically
Chile [SA]
China [AS]
Christmas Island (located in Indian Ocean) [OC]
Colombia [SA]
Cook Islands [OC] - The North Cook Islands are far enough from South Cooks to qualify as a separate country, but there are no known stations there
Corsica [EU]
Costa Rica [NA]
Crete (part of Greece) [EU]
Croatia [EU] - after 6-26-91
Cuba [NA]
Curacao [SA] - after 10-10-10. Earlier logs count as Netherlands Antilles
Cyprus [AS]
Cyprus, Turkish Federated State [AS] - a portion of northern Cyprus
Czech Republic [EU] - after 1-1-93, earlier loggings count as Czechoslovakia
Denmark [EU] - Inactive on MW as of 6-30-11, but still active on LW
Djibouti (formerly French Somaliland, Afar & Issas) [AF]
Dodecanese Islands (part of Greece, includes Rhodes) [EU]
Dominican Republic [NA]
Ecuador [SA]

Egypt [AF]
El Salvador [NA]
England [EU]
Eritrea [AF] - became part of Ethiopia 11-14-62, then gained independence 9-15-93
Estonia [EU]
Ethiopia [AF]
Falkland Islands (aka Islas Malvinas) [SA]
Faroe Islands [EU]
Fiji [OC] – Probably FM only,
Finland [EU]
France [EU]
French Polynesia (aka Society Islands, includes Tahiti) [OC]
Gabon [AF] - after 8-17-60
Gambia, The [AF] – Believed to be inactive
Georgia [AS]
Germany [EU] – Formerly German Federal Republic (West Germany). GDR and West Berlin were added in 1990
Gibraltar [EU]
Greece [EU]
Grenada [NA]
Guadeloupe [NA]
Guam [OC]
Guantanamo Bay Naval Base [NA]
Guatemala [NA]
Guernsey (British Crown Dependency) [EU]
Guinea [AF]
Guyana (formerly British Guiana) [SA]
Haiti [NA]
Hawaii [OC]
Honduras [NA]
Hong Kong [AS] – Special Administrative Region of China with a high degree of autonomy
Hungary [EU]
Iceland [EU] – No medium wave operations at present but has two longwave transmitters
India [AS]
Indonesia [AS]
Iran [AS]
Iraq [AS]
Ireland [EU]
Isle of Man (self-governing British Crown Dependency) [EU]
Israel [AS]
Italy [EU]
Jamaica [NA]
Japan [AS]
Jersey (British Crown Dependency) [EU]
Jordan [AS]
Kaliningrad (noncontiguous part of Russia) [EU]
Kazakhstan [AS]
Kenya [AF]
Kiribati (formerly Gilbert Islands) [OC]
Korea, North (Democratic People's Republic of Korea, DPRK) [AS] - loggings from before the Korean War in the early 1950s count as South Korea.
Korea, South (Republic of Korea) [AS]
Kosovo [EU] – Former Serbian province, under UN-supervised administration 1999-2008. Independent country since 17 Feb 2008
Kuwait [AS]
Kyrgyzstan (formerly Kirghiz SSR, Kirgizia) [AS]
Lakshadweep (aka Laccadive Islands) (part of India) [AS]
Laos [AS]
Latvia [EU]
Lebanon [AS]
Lesotho (formerly Basutoland) [AF]
Libya [AF]
Lithuania [EU]
Luxembourg [EU]

Macao [AS] – Special Administrative Region of China with a high degree of autonomy
 Macedonia [EU] - after 9-8-91, earlier loggings count as Yugoslavia
 Madagascar (aka Malagasy Republic) [AF]
 Madeira [AF]
 Malawi (formerly Nyassaland) [AF]
 Malaysia, East [AS] - after 9-16-63, consists of Sabah & Sarawak
 Malaysia, West [AS] - after 9-16-63, consists of peninsular Malaysia
 Maldives [AS]
 Mali [AF] - after 6-20-60
 Malta [EU]
 Marshall Islands [OC]
 Martinique [NA] – Possibly inactive, but MW station still listed on 1310
 Mauritania [AF] - after 6-20-60
 Mauritius [AF]
 Mayotte (aka Mahore) [AF]
 Melilla (part of Spain, located in Morocco) [AF] - See Morocco listing in WRTH
 México [NA]
 Micronesia, Federated States of (formerly Eastern Caroline Islands) [OC]
 Moldova (formerly Moldavia) [EU]
 Mongolia [AS]
 Montenegro [EU] – after 6-3-06. Earlier loggings count as Yugoslavia.
 Morocco [AF]
 Mozambique [AF]
 Myanmar (formerly Burma) [AS]
 Nepal [AS]
 Netherlands [EU]
 New Caledonia [OC]
 New Zealand [OC]
 Nicaragua [NA]
 Niger [AF] - after 8-3-60
 Nigeria [AF]
 Norfolk Island [OC]
 Northern Ireland (part of UK) [EU]
 Northern Mariana Islands [OC]
 Norway [EU]
 Oman [AS] - includes Masirah Island and Musandam Peninsula
 Pakistan (formerly West Pakistan) [AS]
 Palau (aka Belau, formerly Western Caroline Islands) [OC]
 Panamá [NA]
 Papua New Guinea [OC]
 Paraguay [SA]
 Péru [SA]
 Philippines [AS]
 Poland [EU]
 Portugal [EU]
 Pridnestrovie (aka Transnistria, Trans-Dniester) [EU] – A self-governing independent region of Moldova. Considers itself an independent country though not recognized as such by the Moldovan government or most international organizations
 Puerto Rico [NA]
 Qatar [AS]
 Réunion [AF]
 Rodrigues Island [AF] – Part of Mauritius, separated by 500+ km of ocean
 Romania [EU]
 Russia, Asiatic [AS]
 Russia, European [EU] – the Ural Mountains are the dividing line between Asia and Europe
 Samoa, Western [OC]
 San Andres & Providencia (part of Colombia) [NA]
 Sao Tome & Principe [AF]
 Sardinia (part of Italy) [EU]
 Saudi Arabia [AS]
 Scotland [EU]
 Serbia [EU] – Montenegro declared independence from Serbia/Yugoslavia 6-3-06. Earlier loggings of Serb stations count as Yugoslavia
 Seychelles [AF]

Slovakia (aka Slovak Republic) [EU] - after 1-1-93, earlier loggings count as Czechoslovakia
 Slovenia [EU] - after 6-26-91, earlier loggings count as Yugoslavia
 Solomon Islands [OC]
 South Africa [AF] - includes the homeland republics
 South Ossetia [AS] – breakaway region of Georgia, has diplomatic relations with several countries
 South Sudan [AF] - split off from Sudan and became independent as of 7-9-11, WRTH lists stations in Juba etc
 Spain [EU]
 Sri Lanka (formerly Ceylon) [AS]
 St. Kitts & Nevis [NA]
 Saba and St Eustasius [NA] – after 10-10-10
 Sudan [AF] (also see South Sudan)
 Svalbard (Spitzbergen) [EU]
 Switzerland [EU]
 Syria [AS]
 Taiwan (Republic of China) [AS] - includes Quemoy & Matsu
 Tajikistan [AS]
 Tanzania (formerly Tanganyika) [AF]
 Thailand [AS]
 Timor Leste (aka East Timor) [AS] – Originally called Portuguese Timor, annexed by Indonesia 12-31-61. Became independent 3-1-00.
 Tonga [OC]
 Trinidad & Tobago [SA]
 Tunisia [AF]
 Turkey [AS]
 Turkmenistan (formerly Turkmen SSR) [AS]
 Turks & Caicos Islands [NA]
 Tuvalu (formerly Ellice Islands) [OC] - after 1-1-76
 Uganda [AF]
 Ukraine [EU]
 United Arab Emirates [AS] - Includes Abu Dhabi, Dubai, Sharjah, et al
 United States of America [NA]
 Uruguay [SA]
 Uzbekistan (formerly Uzbek SSR) [AS]
 Vanuatu (formerly New Hebrides) [OC]
 Vatican City [EU] – Vatican Radio's transmitter site is an extraterritorial part of The Vatican
 Venezuela [SA]
 Vietnam [AS] - includes pre-unification receptions of North Vietnam
 Virgin Islands (US) [NA]
 Wales [EU]
 Yemen [AS] - after 6-22-90, formed when Yemen Arab Republic merged with People's Democratic Republic of Yemen

INACTIVE COUNTRIES

The following countries currently do not have medium wave stations, based on information in the World Radio-TV Handbook (WRTH), Euro-African Medium Wave Guide (EMWG), and/or Pacific Asian Log (PAL). Some have had MW stations which are no longer on the air. A few have never, to the best of my knowledge, had a MW station but are listed because they have sufficient permanent or transient population to justify a MW station. The list does not include places with little or no permanent population that have never had a broadcast station.

Abkhazia [AS] – break away region of Georgia, has diplomatic relations with several countries
 Aland Islands [EU] – An autonomous region of Finland. A MW station has been planned for many years but is not currently on the air
 Andorra [EU] - Two high powered MW stations operated here until early 1980s
 Antarctica (and nearby island groups) [OC] - SW/FM only, has had MW stations in the past
 Ascension Island [AF] – FM/SW only
 Austria [EU] MW operations ended 2009
 Belize (formerly Br Honduras) [NA] – FM only
 Bhutan [AS] - SW/FM only
 Burundi [AF] - FM/SW only
 Cameroon [AF] – FM only
 Cape Verde [AF] - FM only
 Cayman Islands [NA] - FM only

Chatham Islands [OC] - FM only
 Christmas Island (Part of Kiribati) [OC]
 Cocos-Keeling Islands [OC] – FM only
 Comoros [AF] – FM only
 Congo, Democratic Republic of the (formerly Zaire, Belgian Congo) [AF] – FM/SW only
 Congo, Republic of [AF] - after 8-15-60, now only FM/SW
 Cyprus, British Sovereign Bases on [EU] - now FM only, includes Akrotiri & Dhekelia
 Dominica [NA] - Currently FM only
 Easter Island (aka Isla de Pascua, Rapa Nui) [OC] - MW operation ended 2006, FM only
 Equatorial Guinea (Rio Muni, mainland portion) [AF] - SW/FM only
 Equatorial Guinea (Bioko, offshore island) [AF] - SW/FM only
 Fernando de Noronha [SA] – Island group in Atlantic, part of Brazil, FM only
 French Guiana [SA] – no known MW operations at the moment
 Galapagos Islands (part of Ecuador) [SA] - MW/SW ceased some time ago, now FM only
 Ghana (formerly Gold Coast) [AF] - SW/FM only
 Greenland (aka Kalaallit Nunaata) [NA] – no MW since 2012
 Guinea-Bissau (ex- Portuguese Guinea) [AF]
 International Waters [OC] - Several stations have operated aboard ships near Western Europe (many), Israel (Voice of Peace, 1973-1993), New Zealand (Radio Hauraki, late 1960's) and the Northeastern US (Radio Newyork International, late 1980's). Currently there are no known regular operations from International Waters. However, the US government has the ability to broadcast from aircraft over international waters.
 Ivory Coast (Côte d'Ivoire) [AF] - after 8-7-60 – FM only
 Johnston Island [OC] - inactive after 1977
 Lampedusa [EU] – Italian island near Tunisia. No known MW, possibly some FM
 Liberia [AF] - SW/FM only
 Lord Howe Island [OC] - now FM only
 Liechtenstein [EU] - FM only
 Midway Island [OC] – FM only, MW has been inactive for many years
 Monaco [EU] – MW transmitters are actually in France
 Montserrat [NA] – FM Only. All MW transmitters were destroyed by volcanic activity in the 1990s.
 Namibia (formerly SW Africa) [AF] – FM only
 Nauru [OC] – FM only
 Niue [OC] – FM only
 Ogasawara (aka Bonin & Volcano Is, includes Iwo Jima) [AS] - no known MW outlets
 Palestine [AS] – after Feb 1, 1999. Includes West Bank and Gaza. Earlier logs count as Israel. Currently FM only
 Phoenix Islands (part of Kiribati) [OC] - WXLE operated on Canton Island in 1970s
 Pitcairn Island – has FM transmitters, believe it or not
 Rwanda [AF] - SW/FM only
 Saint Barthelémy [NA] – French island near Guadeloupe, FM only
 Saint Martin (French, next to Sint Maarten) [NA] - FM only
 Saharan Arab Republic (aka Western Sahara) (formerly Spanish Sahara, Rio de Oro) [AF] – all known MW transmitters are located in Algeria
 Sierra Leone [AF] - FM only
 St. Helena [AF] – AM was shut down 12/2012, now FM only
 St. Lucia [NA] – no more MW stations
 Sint Maarten [NA] – after 10-10-10
 St. Pierre & Miquelon [NA] – now FM only, MW was eliminated a few years ago
 St. Vincent & the Grenadines [NA] – MW station currently inactive but may return some day
 Samoa, American [OC] - all MW Stations are silent, but there are construction permits for new ones.
 San Marino [EU] - FM only
 Senegal [AF] - after 6-20-60, now FM only
 Singapore [AS] - eliminated all MW services in mid-1990's
 Somalia [AF] – SW/FM only
 Suriname (formerly Dutch Guiana) [SA] – all MW stations believed to be inactive
 Swaziland [AF] – Currently FM/SW only
 Sweden [EU] – FM only
 Togo [AF] – FM only
 Tokelau [OC] – FM only
 Tristan da Cunha [AF] - FM only
 United Nations HQ [NA] - universally recognized as "neutral" territory, but has no MW activity
 Wake Island [OC] – AFRTS station closed down several years ago
 Wallis & Futuna [OC] – FM only, MW operation ended circa 2000

Zambia (formerly Northern Rhodesia) [AF] - FM/SW only
 Zimbabwe (formerly Rhodesia) [AF] - FM/SW only

DELETED COUNTRIES

The following countries no longer exist, but had or may have had medium wave stations. Some are places that merged with a neighboring country. Others were split into two or more separate countries. The listed dates are when the country ceased to be a separate DX country. Some countries existed between two dates.

Biafra [AF] – 5-30-67 to 1-15-70, otherwise part of Nigeria
 British North Borneo [OC] - 9-15-63 (now part of Malaysia)
 Canal Zone [NA] - 9-30-79 (now part of Panama)
 Czechoslovakia [EU] - 12-31-92 (now Czech & Slovak Republics)
 Danzig [EU] - 9-1-39
 French Equatorial Africa [AF] - 8-16-60 (now Chad, Central African Republic, Gabon, Congo)
 French Indo-China [AS] - 12-20-50 (now Laos, Vietnam, Cambodia)
 French West Africa [AF] - 8-6-60 (now Niger, Ivory Coast, Burkina Faso, Benin, Mauritania, Mali, Senegal, Guinea)
 German Democratic Republic [EU] - 10-3-90 (now part of Germany)
 Goa (Portuguese India) [AS] - 12-19-61 (now part of India)
 Guangdong Prensula [AS] - 8-14-45 (now part of China)
 Jammu and Kashmir [AS] – 2-24-75 (Northernmost state of India, subject to a border dispute with Pakistan)
 Karelo-Finnish SSR [EU] - 7-15-56 (now part of Russia)
 Leeward Islands [NA] - 2-27-67 (now various island nations)
 Malaya [AS] - 9-15-63 (now part of Malaysia)
 Manchuria (Manchuguo) [AS] - 9-16-63 (now part of China)
 Newfoundland & Labrador [NA] - 3-31-49 (now part of Canada)
 Netherlands Antilles [SA] - Bonaire and Curacao split into separate "countries" 10-10-10
 Okinawa (Ryukyu Islands) [AS] - 5-14-72 (now part of Japan)
 Peoples Dem Rep of Yemen (Aden) [AS] - 5-21-90 (now part of Yemen)
 Ruanda-Urundi [AF] - 7-60 to 6-30-62
 Saar [EU] - 1-3-48 to 12-31-56 (now part of Germany)
 Sarawak [OC] - 9-15-63 (now part of East Malaysia)
 Sikkim [AS] – became part of India 5-16-75
 South Vietnam (Republic of Vietnam) [AS] - 7-1-76 (now part of Vietnam)
 Swan Island [NA] - 8-31-72 (now part of Honduras, home of Radio Americas in mid-1960s)
 Tangier [AF] - 6-30-60 (now part of Morocco)
 Tibet [AS] - 5-30-74 (now part of China)
 Trieste [EU] - 2-10-47 to 5-19-54 (now part of Slovenia and Italy)
 Walvis Bay [AF] - 9-1-94 (former part of South Africa, now part of Namibia)
 West Berlin [EU] - 10-3-90 (now part of Germany)
 Windward Islands [NA] - 6-1-67 (now various island nations)
 Yemen Arab Republic [AS] - 5-21-90 (now part of Yemen)
 Yugoslavia [EU] – Former Yugoslav republics became independent 1991-2006 (see active country listings for dates).
 Zanzibar [AF] - 6-30-64 (now part of Tanzania)

IRCA TECHNICAL COLUMN

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FSL Antenna Design Optimization

All-out Experimentation to Determine Weak-Signal Performance Potential
 By Gary DeBock

Introduction The publication of Graham Maynard's ferrite sleeve antenna article in March of 2011 kicked off a torrent of experimentation in the Ultralight radio enthusiast group, as hobbyists quickly discovered the DXing potential of the new design. Massive orders were placed for Russian surplus ferrite and Chinese Litz wire, while wholesale lots of swimming floatation aides were drafted into service as ferrite padding material. Each individual experimenter had his own ideas about FSL design, and backed them up with serious financial outlays. Multiple design optimization questions went

unanswered in the process, but since the new antennas seemed to be working fairly well for everyone, attempts to bridge opinion gaps were few and far between.

One school of thought held that coil diameter was the most important gain factor, while another was that ferrite size and weight was paramount. Ferrite rod versus ferrite bar opinions were also diverse, and even Litz wire variables became part of the controversy. Any newcomer wishing to build an FSL antenna had no shortage of advice—the only problem was which advice to follow.



Figure 1

performance, it was time to wipe the slate clean and test out all possible variations of the antenna—letting the chips fall where they may.

Experimental Objectives The ambitious agenda of the testing included all experimentation necessary to judge the weak-signal performance of ferrite rods compared to ferrite bars, to judge the weak-signal performance of large-diameter FSL models compared to smaller-diameter models with more ferrite weight, and if at all possible, to establish a design formula which could accurately predict the weak-signal DXing performance of any FSL antenna model before it was constructed (as well as rate the effectiveness of any existing model). These were challenging goals, but I was determined to continue the experimentation (and build as many test models as necessary) until complete clarity of all the design optimization factors was reached.

In order to carry out this agenda seven new FSL test models were built, including a diverse variety of ferrite bar models, short ferrite rod models and long ferrite rod models. Deliberate use was made of common material like Russian surplus ferrite (of 400 permeability), single coils composed of 660/46 Litz wire, a common 381 pf variable capacitor and standard PVC-pipe frames. Each test model was constructed with a coil diameter shared by other models using dissimilar ferrite material (bars, short rods or long rods) so that the performance differences between each ferrite type would become obvious. Finally, all test models would be judged in relative weak-signal performance outdoors in an open-air test range, competing with each other in the reception of at least four fringe daytime DX test stations on frequencies throughout the AM band. During this testing relative-reception MP3's would be recorded for each antenna match up, with the antennas switched in the middle of the recording (within 7 seconds, so that the fringe station's signal level would not change). Both FSL test models would be placed on a 5" PVC base for equal elevation, and the antennas would be separated by at least 50 feet so that there would be no possibility of interaction (Figure 2). Additionally, in cases where a relative-strength deadlock was apparent between two FSL test models, a reference antenna (4' sided PVC air core loop) would be used to check if either test model had better performance against the reference antenna. In summary, every possible preparation was made to provide equal testing parameters for accurate relative performance results.

Three Diameter Classes The test models were divided into 3", 5" and 7" diameter classes (see Figures 3, 4 and 5). The 3" class included a 200mm long-rod model, a 100mm bar model, and a

This experimental free-for-all continued for a full year, with various (and diverse) FSL antenna designs published in the process. The performance variables needed to be sorted out in detailed A/B experimentation, conducted by an experimenter with a completely open mind, and with no axe to grind. Although all of my previously-published FSL designs had been based on ferrite rod components, I recalled that a large supply of Russian surplus 100mm x 20mm x 3mm ferrite bars had been received here for some time, and had gone unused. In a serious effort to bridge opinion gaps and provide complete clarity to the design factors influencing any FSL's weak-signal DXing



Figure 2

65mm short-rod model. The 5" class included a 140mm long-rod model, a 100mm bar model, and a 65mm short-rod model. Finally, the 7" diameter class included a 140mm long-rod model and a 100mm bar model.

Each diameter class would first have relative performance tests against other antennas of the same class, then the top performers in each class would have match ups against each other. With the diverse mix of rods, bars and diameters in the test models, it was presumed that obvious patterns of superior performance would emerge—and they quickly did.



Figure 3

Ferrite Rods or Bars—Which are Better? In each diameter class a clear pattern emerged immediately, with every model having a longer ferrite material (rod or bar) beating out every model with a shorter ferrite material (rod or bar). The thickness or weight of the ferrite material was irrelevant—even though the 65mm rod models had greater weight and ferrite thickness than the 100mm bar models, they lost out to the bar models every time. But this had nothing to do with any superiority of the bar models—to even the score, the 100mm bar models always lost out to the 140mm and 200mm rod models. So the question of rods or bars had finally been answered—whichever ferrite material was longer had the superior DXing performance. Even a 35mm or 40mm advantage in ferrite length was enough to provide a noticeable edge in weak-signal performance, for a given coil diameter.

Smaller Diameter FSL Beats Out Two Larger Diameter Models The 65mm short-rod FSL models proved to be experimental duds, losing out to every other FSL model their respective diameter classes. But before final elimination from the competition, the 5" short-rod (65mm) model was matched against the 3.5" long rod (200mm) model—and was clearly inferior to it. The 3.5" long-rod (200mm) model not only outpaced the 5" short-rod (65mm) model, but clearly outperformed the 5" bar model (100mm) as well. This was the first experimental proof that a smaller diameter FSL could outperform a larger diameter FSL—and another indication that ferrite length extremely important to overall DXing performance.

The "Odd Couple" DXing Deadlock With the overachieving 3.5" long-rod (200mm) model running



Figure 4

roughshod over two of the 5" diameter FSL models, it was given a shot at the 7" diameter bar (100mm) model. In what was probably the most important FSL match up in the entire project, the two completely different antennas deadlocked in performance on all 5 of the test signals. This was the first weak-signal deadlock in 10 different FSL match ups, so it was quite a surprise. Both antennas were then tested against the 4' air core reference loop—and both FSL's deadlocked with it, also! There was now no doubt that the DXing performance of these two radically different models was identical, which certainly was a puzzle considering their polar-opposite design. (see Figure 6)

But when I looked at both models closely, I finally noticed a very peculiar relationship between them... the 3.5" long-rod model's ferrite length (200mm) was twice that of the 7" bar model (100mm), while the 7" bar model's coil diameter was twice that of the 3.5" long-rod model! Could this mean that ferrite length was equally important to coil diameter in determining an FSL's overall performance? It

certainly was in these two FSL models—the two models each had their own design advantage, which was resulting in a DXing deadlock!

After stumbling on this concept, I quickly made up a provisional formula to predict an FSL's overall DXing performance: In comparison to other models having equal component parameters (Litz wire



Figure 5

type, coil orientation, and ferrite permeability), an FSL's coil diameter times its ferrite length would determine its overall weak-signal capability. Since every current FSL experimenter used inches to measure coil diameter band millimeters to measure the Russian surplus ferrite length, I decided to risk the wrath of purists and simply multiply the two dissimilar measurements together in my formula, which in the case of the 7" bar FSL worked out to an equation of $7 \times 100 = 700$ points. In the case of the 3.5" long-rod FSL the equation worked out to $3.5 \times 200 = 700$ points, an identical figure.

But wait—I knew that the 5" Mini FSL model (composed of the 140mm long ferrite rods) had also deadlocked with the 4" air core reference loop, which meant that its performance was also identical to these two deadlocking FSL models. Here was now yet another FSL model which had a design pretty much in the middle of the two radically different models, with equal performance. Theoretically, it should then have the same performance "score" as the other two FSL models in the new equation. It was with some excitement that I quickly did the math... $5 \times 140 = 700!$ All three performance scores agreed with each other, and I was thrilled that the new formula had accurately predicted the 5" Mini-FSL's participation in a 3-way DXing deadlock (as shown in the large group photo of the three FSL's together, at the beginning of this article).



Figure 6

Further Confirmation of the FSL Performance Formula's Accuracy When considering the results of all the FSL test model match ups conducted previously, I finally realized that the new performance formula could have accurately predicted all of the experimental results before any of the test models had even been constructed! But there was one test model match up that had not been tried yet, which was to provide the final confirmation of the formula's accuracy. The 5" short-rod (65mm) model was an under-performer, and had never been matched against the 3" bar (100mm) model. However, the apparent performance formula scores of these two models were extremely close (325 and 300, respectively), and it was time to see how they shook out in an actual weak-signal Shootout. Before running this final confirmation test I carefully measured the actual diameters of the two models, though—and was very lucky to find that the 3" bar model was actually a little bit larger than 3", having a coil diameter of 3.25"...giving it a dead-even performance score with the 5" short-rod model! I didn't even need to modify either model, to have another two FSL antennas which (theoretically) should be equal in weak-signal performance, according to the new design formula.

Once again, it was with some excitement that I set up both FSL test models on their 5' PVC stands in the back yard test range, eager to see if the performance formula had once again clearly predicted the final result. After receiving the very first fringe signal (540-Burien TIS) on both models I knew that I could have saved my trouble... switching between the two antennas in the MP3 recording produced no change in signal quality at all. It was another rare performance deadlock of two diverse FSL test models--- accurately predicted by the new performance formula. (see Figure 7)

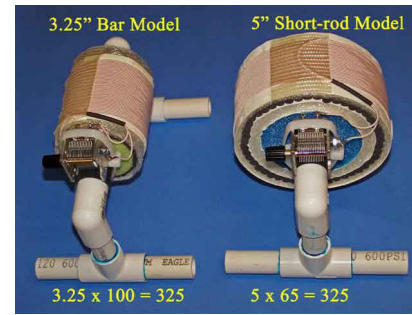


Figure 7

Experimental Wrap Up The objectives of the testing had all been met, and accurate weak-signal design factors for the FSL antenna had finally been determined. To summarize, here were the new discoveries:

- 1) There is no weak-signal advantage to be gained by using either ferrite bars or ferrite rods. The only performance factor related to ferrite is the *length* of the ferrite material, whether it is in bar or rod form. For a given FSL coil diameter, as long as the ferrite permeability is identical, longer ferrite material will always outperform shorter ferrite material, and the weight and thickness of the ferrite material is irrelevant to weak-signal performance (this was proven in seven FSL match ups).
- 2) The *length* of the ferrite material in an FSL antenna is equally important to its coil diameter in providing weak-signal performance. An FSL with twice the ferrite length of another FSL model can still match its weak-signal performance even with a coil diameter half the size of the other model (proven in the case of the 3.5" long-rod model and the 7" bar model).
- 3) Assuming that all component parameters (Litz wire type, coil orientation and ferrite permeability) are identical between two FSL antenna models, the weak signal performance of any FSL antenna in relation to another can be accurately determined by multiplying the coil diameter times the length of the ferrite material in the sleeve. This product gives a "Performance Score" which can accurately predict the weak-signal reception capability of any FSL antenna in comparison to other FSL models having the same component parameters (proven in three FSL match ups here, with identical signals in switched MP3 recordings).

Summary The ability to accurately determine an FSL antenna's DXing performance even before construction opens up a fascinating new perspective on design improvements. Aided by the new performance design formula, a hobbyist can concentrate on building highly effective models at a minimum cost and weight. The FSL antenna's great advantage in relation to other antenna types is its ability to provide low noise, high gain performance from an extremely compact size—and this new design formula emphasizes compact effectiveness, proving that ferrite length is equally important to coil diameter in DXing performance. Future FSL antenna models that combine both ferrite length and coil size are the wave of the future, and now that definite answers have been found for most of the design controversies, we can proceed to design and build our new models with complete assurance of success!



Figure 8

Longer ferrite sleeve material is superior in performance to shorter ferrite sleeve material, even if the shorter material is heavier and thicker than the longer material.

Appendices

Appendix 1: Relative Strength "Shootout" MP3 Links

For determination of the design factors influencing an FSL antenna's weak-signal performance, four of the FSL test model match ups were considered very important. These four match ups (with the design factors clarified by the results) were as follows:

- 1) 3.25" Bar model (100mm ferrite length) outperforms 3.25" Short-rod model (65 mm ferrite length) See Figure 8.

2) 3.5" Long-rod model (200mm ferrite length) outperforms 5" Short-rod model (65 mm ferrite) See Figure 9

A smaller diameter FSL model can outperform a larger diameter FSL model if the smaller diameter model has a ferrite sleeve length much greater than that of the larger diameter FSL.

3) 3.5" Long-rod model (200mm ferrite length) deadlocks in weak-signal performance with 7" Bar model (100mm ferrite length) See Figure 10.

The ferrite sleeve length of an FSL model is of equal importance to its coil diameter in determining weak-signal performance. An FSL model with twice the ferrite length of another model can match its weak-signal performance even with a coil half the diameter of the other FSL model.



Figure 9

and ferrite sleeve lengths.

The detailed MP3 recording links for each of these important FSL test model match ups follow.

1) 3.25" Bar model (100mm ferrite length) outperforms 3.25" Short-rod model (65mm ferrite) (3.25" Short-rod FSL reception for first 18 seconds, followed by that of the 3.25" Bar FSL)

540-Burien TIS (15 watts at 25 miles)
<http://www.mediafire.com/?jqja5qneh3f9chl>
 790-KGMI (5 kW at 140 miles)
<http://www.mediafire.com/?fbobcmhv4d27c47>
 1230-KWYZ (1 kW at 80 miles)
<http://www.mediafire.com/?776nglucfzz1c7pd>
 1430-KBRC (5 kW at 110 miles)



Figure 10

<http://www.mediafire.com/?776nglucfzz1c7pd,lzzz0bamjdt3jgg>



Figure 11

model (100mm ferrite)

(7" Bar model FSL reception for the first 18 seconds, followed by that of the 3.5" Long-rod FSL)

540-Burien TIS (15 watts at 25 miles)

<http://www.mediafire.com/?bbuzgs8c819wsrj>

750-KXL (50 kW at 150 miles)

<http://www.mediafire.com/?87d0ccexi81yhaw>

1040-CKST (10 kW at 160 miles)

<http://www.mediafire.com/?i8d4jld4q2vctml>

1070-CFAX (10 kW at 90 miles)

<http://www.mediafire.com/?ghh0omngnn5o9le>

1410-CFUN (50 kW at 160 miles) <http://www.mediafire.com/?lgfq7r9763g59h8>

4) 3.25" Bar model (100mm ferrite length) deadlocks in weak-signal performance with 5" Short-rod model (65mm ferrite)

(5" Short-rod model FSL reception for the first 18 seconds, followed by that of the 3.25" Bar FSL)

540-Burien TIS (15 watts at 25 miles)

<http://www.mediafire.com/?5n7vm2upt1zxfn9>

750-KXL (50 kW at 150 miles)

<http://www.mediafire.com/?ok82g3ey77bxncr>

1070-CFAX (10 kW at 90 miles)

<http://www.mediafire.com/?1cy43cahub24ylh>

1410-CFUN (50 kW at 160 miles)

<http://www.mediafire.com/?1v8qa3g3j0dcth3>

Appendix 2: FSL Test Model Specifications

Model	Ferrite Size	Ferrite Wt.	Total Wt.	Construction Cost*	Performance Score**
3" Short rod	65 x 8mm	1.5 lbs.	2 lbs.	\$45	195
3.25" Bar	100 x 20 x 3mm	1.0 lbs.	1.5 lbs.	\$40	325
3.5" Long rod	200 x 10mm	4.0 lbs.	4.5 lbs.	\$95	700
5" Short rod	65 x 8mm	2.5 lbs.	3.0 lbs.	\$65	325
5" Bar	100 x 20 x 3mm	2.0 lbs.	2.5 lbs.	\$50	500
5" Long rod	140 x 8mm	4.0 lbs.	5.0 lbs.	\$90	700
7" Bar	100 x 20 x 3mm	3.0 lbs.	4.0 lbs.	\$65	700
7" Long rod	140 x 8mm	6.0 lbs.	7.0 lbs.	\$130	980

* Total cost of components (excluding shipping charges) as of March 2012

** Coil diameter (in inches) times ferrite sleeve length (in millimeters)

(The reason for minor differences in the coil diameters is because although the center core (padding) material was designed to be identical for each FSL diameter class, the diverse ferrite material itself had different thicknesses, which added up to slightly different total diameters. This was most noticeable with the (200mm long x 10mm thick) rods used in the 3" FSL model, which when doubled, added about a half inch to the coil diameter, making it a 3.5" FSL. The total weight is given for each FSL model included the entire antenna with the PVC frame and soft padding; the bulk of it is ferrite weight, assumed to be the important element.)

(ed. note: As Gary mentioned, there has been a large amount of discussion on the UltralightDX Yahoo group from contributors such as Kevin Schanilec, Everett Sharp, Steve Ratzlaff, and of course, Gary, concerning optimization techniques in the design of Ferrite Sleeve Loops. Anyone interested should consult the group's archives <http://groups.yahoo.com/group/ultralightdx/>; membership is required. In the "Ferrite Sleeve Loop Antenna" folder in the files section of the group, there is also a detailed article written by Kevin Schanilec entitled "FSL Optimization", which he described as "a compilation of a wealth of theoretical and practical information out there on how FSLs might be optimized". Although there are still differences of opinion, a posting on the group by Gary on May 29, 2011 made the following conclusions that went beyond the diameter /length comparisons illustrated above:

- The FSL Test Set showed that 1/4-3/8" spacing of coil from ferrite gave the highest output of an FSL.
- Use of the largest Litz wire always gave the highest signal output.
- Even mediocre, small Litz wire gave higher output compared to non-Litz.
- The larger the coil diameter the higher the output--make it as large as you can (8" suggested minimum coil diameter, at least for an LF loop).
- A continuous ferrite sleeve gives highest output, but even some spacing of ferrite produces a useable FSL.
- The larger FSL's (8" and 12" diameter) can provide inductive coupling up to 24" off to the side of the coils (the side lobe), in addition to up to 24" in front (and in back) of the coils. In many cases, the quality of reception provided by this side lobe is superior to that provided by the front and back lobes.
- FSL coil isolation seems to have a significant effect on performance. A coil placed close to ground level, near electrical conductors or near indoor house wiring will not perform as well as an electrically isolated coil in an outdoor environment. The use of non-conducting FSL frame material (like PVC pipes) can assist in providing the best performance.
- The length of the ferrite rods used in the sleeve does seem to have a significant effect upon ultimate FSL sensitivity. The most sensitive FSL's combine relatively few turns of large Litz wire with relatively long ferrite rods.
- In comparison to large air-core tuned passive loops, the FSL design will typically provide greater tuning bandwidth with the same value of variable capacitor. The larger FSL's (8" and 12" diameter) can also provide LW and MW sensitivity which is competitive with the larger air-core loops (3' to 6' side dimensions), using a higher-Q tuning system in a much more compact package. Despite this, the larger-sized FSL's typically have much greater weight and component cost than the large-scale air-core loops, resulting in a trade-off of antenna advantages.)

ULTRALIGHT NEWS

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July 2013 Oregon Cliff (Rockwork 4) DXpedition Daily Logs

July 21. First of all, thanks very much to Dennis, Bill, Nick and Walt for their DU-DX reports this morning, which provided a very interesting comparison. The first "Cliffhanger" DXing session at Rockwork 4 provided the typical Kiwi-slanted results this morning, although there were a few surprises. About 18 DU's were in audio, although huge signals were less common than usual. The biggest surprise of the session was a booming signal from 783-Samoan Capital Radio, which nearly pegged the PL-380 S/N display with its island-type music around 1248 (usually this is a weak underperformer). Other than this 594-NZ Rhema had a pretty nice signal, and the usual Kiwi big guns were well represented. Except for decent signals from 576-2RN, 774-3LO and 828-3GI, the Aussies were pretty much missing in action. With far more DU signals than live DXing time, I concentrated on the low-band signals as usual.

With the major DXpedition in Yachats (and nearby Cape Perpetua) scheduled to start up tomorrow, there should be some heavy-duty South Pacific DXing activity this week. This morning's Cliff DU-DXing results seem strangely out of synch with the other reports, but I was able to record a few MP3's to back up the claims. Hopefully Nick and the others will not feel motivated to drive down and throw me off of the Cliff.

- 531 **NEW ZEALAND**, Auckland, PI. Fair-good signal with female Samoan voice mixing with UnID Aussie male voice at 1305.
- 567 **NEW ZEALAND**, Wellington, RNZ. Good DU EE male conversation at 1252 overcoming some KVI splatter. <http://www.mediafire.com/listen/tp81bsa67s0b7i/567-RNZ-1252z072113PL380.mp3.MP3>.
- 576 **AUSTRALIA**, 2RN, Sydney. Fair-good DU EE commentary at 1235.
- 594 **NEW ZEALAND**, Timaru, Rhema. Good level Christian contemporary music at 1318. <http://www.mediafire.com/listen/v2871q170bns0b/594-NZ.Rhema-1318z072113PL380.mp3.MP3>.
- 603 **NEW ZEALAND**, R Waatea. Fair-good Maori language music at 1244, //765.
- 639 **NEW ZEALAND**, Alexandra, RNZ. Fair DU EE conversation //675 at 1322.
- 657 **NEW ZEALAND**, Wellington, Southern Star. Strong level Christian music at 1222.

- 675 **NEW ZEALAND**, Christchurch, RNZ. Strong level music and DU EE speech at 1228. <http://www.mediafire.com/listen/tktcaddq46c7bwg/675-RNZ-1228z072113PL380.mp3.MP3>.
- 738 **TAHITI**, Mahina, R Polynesie. Good TOH fanfare and FF OM speech at 1200 (through KCBS splash and het.) <http://www.mediafire.com/listen/8cscgc1gk6zhap8/738-R.Polynesie-1200z072113PL380.mp3.MP3>.
- 756 **NEW ZEALAND**, Auckland, RNZ. This 10 kW RNZ relay had fair signals at 1301 despite its proximity to 750-Portland.
- 765 **NEW ZEALAND**, Napier-Hastings, R Kahungunu. Good Maori-language music at 1244, //603.
- 774 **AUSTRALIA**, 3LO, Melbourne. Fair good DU EE conversation at 1238, //828.
- 783 **NEW ZEALAND**, Wellington, Samoan Capital R. Biggest surprise of the morning – huge signal at 1248 almost pegging the PL-380. <http://www.mediafire.com/listen/jfmeafx37z1pbvo5/783-SamoanCapRadio-1248z072113PL380.mp3.MP3>.
- 828 **AUSTRALIA**, 3GI, Sale. Fair DU EE conversation //774 at 1320.

July 22. Huge DU signals were back in force at the soggy cliff this morning as several "Big Gun" Aussies did their best to compete with the usual Kiwi regulars on several frequencies. 531-PI, 567-RNZ, 594-3WV and 603-Radio Waatea all managed to peg the PL-380 S/N display at various times this morning, with 531-PI (a 5 kW Samoan language station in Auckland, NZ) accomplishing this for the first time on any cliff trip. Some marginal CC was received on 936 around 1225 (indicating probable reception of the 1 kW New Supremo station in NZ) and 585-2WEB (Bourke, Australia, 10 kW) was apparently back for the first time in 2 years with weak classic rock at 1250.

Despite the unusually vibrant signals the DU propagation didn't stick around much past 1320, so the period of peak sunrise enhancement was relatively short (from 1230-1300). The 8-man Yachats DXpedition group was planning to start its Perseus-SDR recording sessions this morning, so I'll be interested to hear how their multi-elevation antenna results come out. At least for the Standard (single-optimized frequency) version of the 12" FSL antenna used here, the DU-DXing results have been all that I could have hoped for during the past couple of days.

- 531 **NEW ZEALAND**, Auckland, PI. Pegging the PL-380 S/N display with Samoan language speech at 1232; best signal ever received during any of my DXpeditions. <http://www.mediafire.com/listen/n6kdtuy5k4q6f1/531-PI-1232z072213PL380.MP3>.
- 531 **UnID Aussie**. Talkback station with news and interview format dominating over 531-PI at times. Not heard during any previous trip (the other Aussies usually have a rock format on this frequency) – any ideas from Down Under? <http://www.mediafire.com/listen/w0cxa6rsr0mijhy/531-UnID-Aussie-1230z072213PL380.MP3>.
- 558 **UnID-DU**. Some weak audio here around 1225, but no match for the 560 domestic splatter.
- 567 **NEW ZEALAND**, Wellington, RNZ. Monster signal with DU EE interview program around 1255.
- 576 **AUSTRALIA**, 2RN, Sydney. Huge signal at 1245 during ABC interview program.
- 585 **AUSTRALIA**, 2WEB, Bourke. Presumably the one with weak classic rock at 1250; the other usual DU on this frequency is R Ngati Porou (Maori), and the format didn't match up.
- 594 **AUSTRALIA**, 3WV, Horsham. Very strong ABC interview program pegging the PL-380 S/N at times (through some KUGN splatter.) <http://www.mediafire.com/listen/0yzzqh6hpoz5j43i/594-3WV-1244z072213PL380.MP3>.
- 603 **NEW ZEALAND**, Auckland, R Waatea. Pegging the PL-380 S/N with Maori-language choral music at 1253 – one of the best DU signals on the Cliff so far (//585 and 765.) <http://www.mediafire.com/listen/u25glqbzfr7e2h3/603-R.Waatea-1253z072213PL380.MP3>.
- 639 **NEW ZEALAND**, Alexandra, RNZ. Pretty vibrant signals from this low-power (2 kW) relay at 1304; this station consistently rules the frequency on the Cliff, although 2HC sneaks in at times.
- 657 **NEW ZEALAND**, Wellington, Southern Star. Excellent strength Christian music at 1231.
- 675 **NEW ZEALAND**, Christchurch, RNZ. Strong interview program //567 and 639 at 1312.
- 684 **NEW ZEALAND**, Rhema. Good strength Christian contemporary music at 1239.
- 738 **TAHITI**, Mahina, R Polynesie. Booming FF YL speech at 1205; no trace of Aussie 2NR yet on this frequency.
- 756 **NEW ZEALAND**, Auckland, RNZ. In and out with interview program at 1312 //675 and others.
- 765 **NEW ZEALAND**, Napier-Hastings, R Kahungunu. Very good strength Maori music //603 at 1253.
- 783 **NEW ZEALAND**, Access R (not Samoan Capital Radio.) Good strength speech in unknown language at 1248, but signals nowhere near yesterday's awesome level.
- 936 **NEW ZEALAND**, Auckland, New Supremo (presumed.) Marginal CC speech on the frequency at 1225 (with no Asian propagation at the time), but will keep tying for more conclusive evidence on this 1 kW station

July 23. Thanks to Nigel and Walt for their DU-DXing reports this morning – and I'd certainly agree with them that this was an NZ-slanted morning (as almost every morning seems to be, on this propagation-boosting Cliff).

The Kiwi regulars were pounding in as usual on the foggy cliff, with 657-Southern Star and 765-R. Kahungunu reaching their best levels yet during the DXpedition. The apparent Chinese-language station on 936 was in and out, and 585 had some weak audio again (probably the 2 kW Maori station this time, but I was unable to confirm the //603 or 765). Efforts were made to go after more exotic fare on 558 (Fiji), 666 (New Caledonia) and 1017 (Tonga), but once again the peak sunrise enhancement period was relatively short, wrapping up around 1315. In addition, DU propagation didn't seem to favor (favour) much besides New Zealand this morning, except for the usual Aussie big guns and an awesome signal from 738-Radio Polynesie (Tahiti) around the 1300 TOH. This Rockwork 4 cliff faces directly in the Kiwi direction, and there has yet to be a single summer listening session where New Zealand stations didn't pound in (8 out of 8 days so far, including last August). When the NZ propagation really kicks in, this Cliff almost seems like part of Kiwi turf.

It was great to receive a message from Guy Atkins that the Yachats (OR) DXpedition group has set up their antennas on Cape Perpetua, both at the Highway 101 turn off and at the top (805') level. The greatest limitation here has been the inability to track down all of the vibrant DU's across the entire band (during live DXing) before sunrise enhancement folds each morning. Hopefully the multi-antenna Yachats group can use their Perseus-SDR spectrum-recording capabilities to overcome this delightful "problem."

- 531 **NEW ZEALAND**, Auckland, PI. Very strong with Samoan talk at 1245, leaving no chance for the UnID Aussie "talker" to sneak though.
- 558 **UnID**. This frequency had audio in and out this morning, but never vibrant enough to overcome 560 domestic splatter.
- 567 **NEW ZEALAND**, Wellington, RNZ. Super signal at 1252 with DU EE male speech. //639, 675 and 756.
- 576 **AUSTRALIA**, 2RN, Sydney. Good strength pop music at 1313, //792.
- 585 **UnID**. Fair strength music at 1239 sounded Maori (like Radio Ngati Porou), but not strong enough to confirm //603.
- 594 **AUSTRALIA**, 3WV, Horsham. Decent strength at times with ABC interview programs, but always mixing with NZ Rhema.
- 594 **NEW ZEALAND**, Rhema. Good strength Christian contemporary music at 1250, usually showing 3WV down in the noise.
- 603 **NEW ZEALAND**, R Waatea. Excellent level Maori choral music at 1227, // equally vibrant 765-Kahungunu.
- 639 **NEW ZEALAND**, Alexandra, RNZ. Good strength DU EE female speech at 1254 through KFI splatter.
- 657 **NEW ZEALAND**, Wellington, Southern Star. Best signals so far this trip with vibrant Christian music at 1242. <http://www.mediafire.com/listen/bo1yjum6wr6em9v/657-SouthernStar-1242z072313PL380.MP3>.
- 675 **NEW ZEALAND**, Christchurch, RNZ. Joining the vibrant Kiwi trend with potent DU EE interview signal at 1253.
- 684 **NEW ZEALAND**, Rhema. Very good Christian contemporary music //594 at 1250.
- 738 **TAHITI**, Mahina, R Polynesie. Very strong pop music and FF woman speech prior to 1300 TOH fanfare and news. <http://www.mediafire.com/download/e2d4rplhs8uh18a/>.
- 756 **NEW ZEALAND**, Auckland, RNZ. Fair strength DU EE speech at 1224 but no match for 750-Portland splatter.
- 765 **NEW ZEALAND**, Napier-Hastings, R Kahungunu. Very strong Maori language choral music at 1226 //603; best signals yet during this cliff trip <http://www.mediafire.com/listen/j8xbgpcigu8yh7z/765-R.Kahungunu-1226z072313PL380.MP3>.
- 774 **AUSTRALIA**, 3LO, Melbourne. One of the best Aussies this morning with ABC interview //828 at 1305.
- 783 **NEW ZEALAND**, Wellington, Access R. Very good ethnic music signals at 1308; this station has been on a romp so far this trip.
- 792 **AUSTRALIA**, 4RN. ABC ethnic music program at good strength at 1313 but in a snarl with Kiwi Radio Sport this session.
- 792 **NEW ZEALAND**, Hamilton, R Sport. Kiwi-slanted propagation boosted this 5 kW sports station past 4RN though much of session.
- 828 **AUSTRALIA**, 3GI, Sale. Decent signal with Aussie LR network interview //774 at 1305, but competing with Kiwi R Trackside.
- 828 **NEW ZEALAND**, Palmerston North, R Trackside. This 2 kW Kiwi overachiever was in a horse race with Aussie 3GI through session.
- 891 **AUSTRALIA**, 5AN, Adelaide. One of the best Aussie signals with very good DU EE interview at 1306, //774.
- 936 **NEW ZEALAND**, Auckland, New Supremo (presumed.) Apparent weak CC from this 1 kW station again at 1247, but it was playing hard to get all morning.

July 24. It may sound like a rerun, but the Kiwi regulars were pounding in at the Cliff as usual this morning, along with some big gun Aussies. 531-PI, 567-RNZ and 576-2RN all managed excellent signals, and 756-RNZ (usually a weak underperformer) managed its best audio of the trip so far. The UnID Aussie talker on 531 managed to sneak in a weak signal just before the 1300 TOH (when I was hoping for a clue) only to have the 5 kW Kiwi station 531-PI smother the frequency with Samoan music. Encouraged by Bruce to try some of the higher frequencies, 1008, 1017 and 1503 kHz were all checked out – all apparently yielding more Kiwis (although 1008 had an Aussie co-channel at times, presumably 4TAB.)

Several low-band targets are still playing hard to get, including 558-Radio Fiji One (heard at a vibrant level at Lincoln City in 2010), 666-Noumea (heard at moderate strength //738 in Lincoln City in 2011) and 936-New Supremo (apparently heard here last year in August, but without any Chinese speech). Thanks to Bruce for the tip on 1017-Tonga's sign-off around 1108... if it were not for the fact that this is supposed to be "family vacation," I might be tempted to make an early trip to the Cliff to snag it (although a decent MP3 from 2010 is still in the computer.)

I'm happy that the Yachats DXpedition group is now in operation, and wish them the best of DX during their remaining time here on the Oregon coast. Welcome (especially) to the overseas DXers who are chasing DU's for the first time. If not for the scheduling quirk, I would have really enjoyed DXing together with your group, and staying the rental house in Yachats (under Landlord Bill's house rules.)

- 531 **NEW ZEALAND**, Auckland, PI. Female Aussie talker snuck in briefly before 1300 TOH, only to quickly be drowned in Samoan choral mx.
- 558 **UnID**. Once again a vibrant DU carrier struggled unsuccessfully against heavy domestic splatter – possibly R. Fiji One?
- 567 **NEW ZEALAND**, Wellington, RNZ. Female-voiced interview program briefly pegging the PL-380's S/N display at 1239 against KVI splatter. <http://www.mediafire.com/listen/fd3828er34tvsed/567-RNZ-1239z072413PL380.MP3>.
- 576 **AUSTRALIA**, 2RN, Sydney. Vibrant ABC news signals at 1302 (pretty unusual for non-Kiwis here.) <http://www.mediafire.com/listen/ldq78elws30pzm/576-2RN-1303z072413PL380.MP3>.
- 585 **UnID-DU**. Weak choral music, probably originating from R Ngati Porou (but no // confirmed.)
- 594 **AUSTRALIA**, 3WV, Horsham. Good strength ABC interview program at 1245 fighting it out with usually dominant NZ Rhema.
- 603 **NEW ZEALAND**, Auckland, R Waatea. Pounding in as usual with Maori language interview 1238, //765.
- 639 **NEW ZEALAND**, Alexandra, RNZ. All alone with female-voiced interview //567 at 1240.
- 657 **NEW ZEALAND**, Wellington, Southern Star. Strong Christian music all alone on frequency at 1228.
- 675 **NEW ZEALAND**, Christchurch, RNZ. One of the best signals this morning with RNZ National interview at 1240, //567 and 639.
- 684 **NEW ZEALAND**, Rhema. Somewhat of an underperformer so far, with fair Christian contemporary music fighting KNBR splatter at 1220.
- 738 **TAHITI**, Mahina, R Polynesie. Strong and all alone with FF YL speech at 1258; Aussie big gun 2NR yet to show here.
- 756 **NEW ZEALAND**, Auckland, RNZ. Best signals yet (fair-good) with light music at 1232; 750-Portland splatter from back cut down by Cliff.
- 765 **NEW ZEALAND**, Hastings, R Kahungunu. Excellent-strength Maori language interview replacing the typical choral music at 1232, //603.
- 792 **AUSTRALIA**, 4RN, Brisbane. Good level ABC female-voiced news //576 at 1304.
- 828 **NEW ZEALAND**, Palmerston North, R Trackside. Fighting it out with Aussie 3GI (and usually losing the competition) all session long.
- 891 **AUSTRALIA**, 5AN, Adelaide. Somewhat of an underperformer so far, good signals in and out of 890 splatter at 1310.
- 1008 **NEW ZEALAND**, Tauranga, Newstalk ZB (presumed.) Call-in talk program at 1251 matching format heard at Cape Perpetua last year. <http://www.mediafire.com/listen/3f6u2a53a499955/1008-NewstalkZB-1251z072413PL380.MP3>.
- 1017 **UnID** (Radio Sport/ Newstalk ZB?) Fair level male-voiced interview program at 1309. <http://www.mediafire.com/listen/m568ty725mkrxcd/1017-UnID-DU-1309z072413PL380.MP3>.
- 1503 **NEW ZEALAND**, Wellington/Christchurch, R Sport (presumed.) Weak male-voiced interview at 1254.





**Minneapolis, Minnesota 2013!
August 1st thru 4th 2013
2013 Convention Report**

The 2013 DX Convention was singular in several respects. First, NRC, IRCA, MN DX Club and WTFDA members came together in a historic confluence of talent and diversity. Second, we decided to take the best ideas of the clubs' previous conventions... and then move beyond those traditions to create a "**Learning and Sharing**" experience. Finally, as a major recurring agenda item, we promoted and encouraged an undercurrent of discussion on the future of our clubs. <http://www.durenberger.com/documents/Program.pdf>.

It all came together quite nicely, on a sunny weekend at the Bloomington Holiday Inn and at the Pavlek Museum of Broadcasting. From an ambience perspective the hotel was a great place to stay and work and, as for the Museum, well, THAT was a singular experience in itself. Members began arriving on Wednesday July 31st to spend advance time at the baseball parks, Mall of America and other Minneapolis-area attractions. Meanwhile your friendly convention coordinators were stuffing "greeting packs" with convention and area information, gathering auction items and door prizes and filling coolers and snack bowls.

Thursday evening's convention activities began with a successful **DXpedition** hosted by the Minnesota DX Club at Lac Lavon Park in Burnsville. About 25 members (most of the registrants who had arrived at that point) car-pooled to the site with their radios and an expectation that conditions ought to be semi-okay (given its summer.) The site was electrically quiet... but the mosquitoes generated their own interference, seemingly singling out special victims in spite of the clouds of bug-spray.

Those of us ignored by the airborne vampires watched and learned as Neil Kazaross deployed a phased Beverage-On-Ground (**BOG**) as well as a "**Single-Kaz**" antenna array. We also pulled out a single 500-foot BOG about due East, and set up a 30-foot vertical. Richard Allen brought an **FSL** antenna and folks learned how to couple the antenna to their radios, hot-rodding them. We struck the set before 10 PM.

Friday morning we began our "classroom" experience at 8:30 (we note this was 6:30 Pacific Time and our West-coasters were forgiven for yawning). Nick Hall-Patch presented what he creatively calls the "DX Fishbarrel." It's an innovative methodology using SpectraVue for analyzing short-term MW and LW signal trends... so you can note when they're starting to come up through the noise. His application as demonstrated is used in TP-watch. It's a most useful tool and an application that will probably become 'mainstream.'

Neil Kazaross joined the dialogue with an interesting presentation on how to use widely-available local sunset maps and a basic understanding of geography to predict where MW signal paths were likely to be opening or closing. It was one of those situations where a number of us were saying "gee I knew that, but I had forgotten about it." So Kaz brought it back home to us. The 'proof is in the capture' as they say, and Kaz played audio clips of some of the catches resulting from his approach when tuning in Illinois.

By now we were running up against a self-imposed clock (we had to finish by 11:30) so your friendly author's own paper on short MW antennas and noise-hunting was (mercifully?) truncated. I think I got about halfway through before the dinner bell rang.

At 11:30 we re-populated the meeting room with our hard-core members who enjoyed a fascinating IEEE luncheon presentation on "Meta-materials for New Antenna Design." We were also treated to a promo video on aerospace systems (by ATK)... from Saturn 5 to 21st-century drone warfare. Thank you Chris Fuller!

The world-famous "Group Photo" (see top of this article) came off as scheduled with 40 of our 60-person group standing in the sunshine (a few folks were off doing other things or checking into the hotel.)

Car-pool drivers then loaded their machines for the trip to the Museum where we enjoyed a fascinating tour of the artifacts and history of wireless communications... including a working Spark-Gap transmitter (Docent Steve Raymer warned us to shut down phones and PDAs, to keep them from being incinerated by the ESP.) Learn more: www.pavekmuseum.org.

Friday afternoon's 'tutorials' began with Nigel Pimblett's tour of Don Moman's antenna farm in Alberta, VE6JY. Towers and antenna arrays cover most of 80 acres of land; the site is available for ham contesting and even scientific research. **The ultimate Labor of Love!**

While we were recovering from our envy, Phil Bytheway was setting up to deliver a paper on the FSL antenna. Phil's clear presentation was a great way to learn about an antenna that seems to be revolutionizing one category of Ultralight efforts. Richard Allen carried a (7-inch) version to the conclave. Clearly a lot of work to build, but worth it.

Now Kaz returned, taking us through theory and practice on practical antennas. His paper included antenna diagrams, azimuth and elevation drawings of pickup patterns from Kaz, Flag, Double-Delta antennas and more. This presentation was of great value to anyone who has the space to deploy these antennas... and those folks who want to take that next step were given a great deal of information (<http://www.durenberger.com/images/DOUBLEDELTA.jpg>.)

We capped the afternoon's classroom sessions with George Sherman's introduction to the new CR-1 receiver... touted as "an SDR without need for a computer." Excellent specs, and George demonstrated a good understanding of its performance, while adding comments on the radio's good and not-so-hot points.

While this probably should have been enough for any healthy DXer, we were just hitting our stride, swinging now into the informal part of our first day. (I must add that, to everyone's credit, we didn't seem to be burning anyone out.)

Now came a healthy indicator of emerging club and inter-club solidarity. The clubs held sequential business meetings, with **everyone from all clubs** invited to attend all club meetings. (This was a nice indication that long-ago personal baggage about club relationships may have been jettisoned.)

When the IRCA announced its 50th-Anniversary convention in Billings next year, several members asked why we couldn't continue this "new tradition" of joint conclave. The NRC unanimously voted to forward an expression of interest in joining IRCA in Billings, for another joint convention in 2014.

Somewhere before, during or after this meeting, the attendees devoured a few dozen pizzas provided by the Museum. About 13 minutes after the pizza boxes were opened, it looked like a tornado had come through and vacuumed up all the food.

While attendees digested all that wonderful cholesterol and Trans-fat, we presented as dessert a video trip to the Utah desert, in which "Two Phools in the Field" laid out some serious wire while having fun on ATVs. The video showed how we used a **single-wire** remote-adjustable termination system to null out back-side Beverage response.

It was obvious from the video your Phriendly Phools did a lot of dumb things on that trip; ideas for better technique were forthcoming from the audience. We did manage to lower the conversation level in the room when we put up the maps of our capture fields.

Now it was time to open the door on the afore-mentioned underlying agenda item: **The future of the clubs**. The healthy attitudes displayed during our earlier business meetings made it easier for Moderator Skip Dabelstein to get some great responses to two questions: 1) what do we do to make our clubs sustainable in view of the "graying" of the membership... and 2) what services should our clubs be offering our constituents? It was a healthy and productive session. (A recording is available.)

By this point only the stout-hearted fanatics were ready for any more. So, mercifully, we invoked an immediate end to the day's services and returned to the hotel.

Saturday arrived more or less on schedule, as it tends to do every week or so here on the Norwegian Riviera. We were gratified to see most of Friday's survivors show up at the Museum for the 9 AM start of "The Quest for the Perfect Loop." Mike Bates and Jim Dale showed us real-life artifacts of their years of experimenting with loop construction. They also shared their hard-earned conclusions and offered suggestions for physical construction. It was clear these guys **are really into PVC!**

Then it was time for singer/guitarist/marketer/Ham/DXer Steve Kremer KNØF to take us on a tour of short-wave listening. Steve's comments were entertaining and informative. There's a lot left to hear out there!

Steve Raymer, our Museum host, told us how this place came together. It's a fascinating story and it credits among others Earl Bakken, inventor of the Pacemaker, with seeing the potential of a museum as a learning institute. Each year the Museum is host to more than 6,000 school-kids who are exposed for the first time to the magic of wireless!

Next, Phil Bytheway explained the state of the art of the Ultralight hobby and the qualifying rules applying thereto. Phil was kind enough to display and distribute a "Guide to Ultralights" and our would-be Ultralighters took copious notes. There's more to this hobby and its organization than some thought....

The "formal" sessions concluded with George Sherman's dissertation on LoFers and Beacons. George explained why 'down under' is still a decent if under-explored part of the spectrum, and a goal for hobbyists jaded with the other bands. His information included a look at a great reference site. ["classaxe.com/dx/ndb/rna."](http://classaxe.com/dx/ndb/rna)

As long as we were noodling around close to "DC," I asked Craig Siegenthaler ("KIWA") to tell us what he was doing at the *super*-low-end. Turns out he's listening to lightning and earth motion in the band "0 to a few Hz." Turns out many folks were interested.

Came now the open Saturday afternoon. One station tour was planned (the logistics of motoring around this large market made it almost impractical to reach more than one site in the time available.) But that one site was a goodie: The transmitter of WCCO 830. Most of the group went on the tour; lots of photos were taken, and if you're interested in photos, contact one of your friends who was there.

Three transmitters populate the main site; an alternate tower site several miles distant contains two more! (The main tower is 'too long' for 830; WCCO was on 810 prior to the 1941 NARBA switch and the tower was never shortened.) Thanks to WCCO Chief Engineer Craig Walters and his fluorescent light bulb!

Saturday evening the Holiday Inn impressed us with their catering at a very nicely-appointed **Banquet**. Excellent meal; good conversation. Banquet Speaker Dean Sorenson, a long-time Broadcaster and multiple-station co-owner, regaled us with stories about his early days and about the characters he's met along the way. Dean is a DXer himself and could relate nicely to our hobby and the current state of the clubs.

As folks checked to make sure they had their wallets at hand for the Auction, we gave out a number of cool door prizes. (To be eligible for a prize you had to complete the "Anonymous Program Survey" in which we asked for comments on individual papers. Results of that survey are below.)

DOOR PRIZES went to Steve Kremer (20th Edition of the FM Atlas); "Discovering DX-ing" was handed to Ernie Wesolowski; the book "Pirate Radio" was won by Nigel Pimblett. Subscriptions to "CQ" magazine were captured by Neil Griffin and Wayne Heinen. Somebody won a \$50 Gift Certificate from ARRL (I can't decipher Skip's writing); David Jones won a \$25 version of same. The FR-160 Radio went to Neil Kazaross; CC Radio's "EP" was won by Paul Swearingen and the "CC Radio 2" went to Richard Allen. **We thank our sponsors for these generous contributions!**

The Club Auction did very well; Colonels Phil Bytheway and Paul Swearingen were ably assisted by David Yocis and myself (David and I donned green eyeshades and raked in the club-supporting revenue from your purchases.) The club merchandise donated by members brought in over \$400. A separate Auction in behalf of the Pavek Museum included a Kenwood TS-520S which Jim Dale purchased. Well done all, and thank you!

There's a big yellow warning sign on Interstate 70 Eastbound, high above Denver: "**Truckers, you're not down yet.**" Sunday morning's message: 'we're not done yet.' The endurance test began at 9 AM. "THE GREAT DX QUIZ," was prepared by M.C. Scott Fybush and was one of the toughest exams administered in quite a spell (and with such glee on Scott's part!) Winners: Part 1: Garrett Wollman-19 points; Part 2: John Sampson-36 points; Part 3: Frank Merrill-11 points.

The Grand Finale was worth the wait. "The Scott Fybush Tower Tour" was a fascinating mix of tower photos and station information, all presented in context. It's clear to this old grizzled head that Scott is a living, breathing encyclopedia of up-to-date station data... AM, FM and TV. Woe betide those who challenged "The Master"... as was demonstrated by the Quiz scores.

...and at that point we made our goodbyes and thanked everyone for coming. From what I can tell out here in Lake Wobegon, the **four-day doo-dah** was a success!

SOME STATISTICS:

We were 60 registrants of all ages from all areas of the United States and Canada. A few were convention 'newbies.' A majority of us belong to more than one club. Weighted representation provides the following proportional relationship: NRC 39%, IRCA 25%, MDXC 20%, WTFDA 16%.

Of the "papers" presented, 7 dealt with Medium-Wave, 3 with Long-Wave, 1 focused on short-wave and the remainder were of general interest. (We could not find an FM/TV presenter from among the ranks of WTFDA and so we addressed their interests with a great handout.) We felt this was probably a good ratio of topics but we also wanted to make sure to add something new. Let's see how we did:

ANONYMOUS PROGRAM SURVEYS: All attendees were given a program survey form to be executed for each session. The intent was NOT to see which presenter came out on top, but rather to audit the interest in each topic, as a baseline for future conventions. Because these were to be turned in Saturday evening, the DX Quiz and the Scott Fybush Tower Tour are not represented. I'll exercise reporters' prerogative and give Scott's unrated Sunday work a "**must repeat.**"

In the survey, attendees were asked to value each presentation by circling as many of the following comments as were appropriate (the numbers are the totals for each comment submitted): "*I learned something new*" (389)... "*I'd like to know more*" (155)... "*I had little interest in this*" (39)... "*I'd like to try*

this myself" (141)... "*It was too long*" (40)... "*It wasn't long enough*" (20)... "*I didn't understand it*" (3)... "*I enjoyed the presentation style*" (345)... "*on the whole I'd rather be in Philadelphia*" (0)

The total *potential* score was 658... that's the number of presentations multiplied by the number of surveys returned. Some folks didn't attend all sessions. (Presenters can get detail from me if interested.)

My interpretations of this admittedly non-scientific survey: The high scores in "*I learned something new*" and "*I'd like to know more*" tell us that we were pretty much on the mark in designing the program agenda. (This may also account for why most folks weren't wiggling too much in their seats.)

The high "presentation style" numbers reflect the terrific work our presenters put into crafting their papers, and the quality of their audio/visual offerings. It was a lot of work putting these presentations together, but it appears y'all appreciated the work!

THE GREAT THANK YOUS: I want to once again express our appreciation to Presenters Nick Hall-Patch, Neil Kazaross, Phil Bytheway, Nigel Pimblett, Skip Dabelstein, George Sherman, Jim Dale, Mike Bates, Steve Kremer, Steve Raymer and Scott Fybush. Thanks to Dean Sorenson for an entertaining after-banquet presentation, to Steve Raymer, Danny Henry and Courtney Bakken for their outstanding hospitality at the Pavek Museum of Broadcasting and to WCCO Chief Engineer Craig Walters.

We also recognize the convention-coordination team including Phil Bytheway, Skip Dabelstein, Todd Skaine, Ernie Wesolowski, Jim Dale and Mike Bates... and a special vote of appreciation goes to the Minnesota DX Club for hosting the DXpedition and for providing technical and informational support throughout the convention.

A note of gratitude is directed to the IEEE Twin Cities Microwave Chapter for supporting our Friday Lunch and for providing fascinating futuristics! Finally... our appreciation for the unselfish car-pool drivers who made getting around our venues a whole lot easier.

This was truly a TEAM EFFORT!

Mark Durenberger (now hiding in the North Woods but responding to: Mark4-at-durenberger-dot-com)

SPORTCHANNELS IRCA
 Compiled by: Eric Bueneman (NØUIH)
 E-mail: n0uiheric@aol.com

With the bigger DX Monitor bulletins now that it's gone "high tech", there's more room to cover the sports networks. Remember last edition, when I promised to give you the network lists from the National League Central and American League Central? Well, I'll give you more than these two divisions in this edition...how about ALL of Major League Baseball? As the late St. Louis TV pitchman Joe Mizerany used to say: "You want it? You got it!" All flagship stations are in **boldface** type, while all Spanish language stations are in *italics*.

NATIONAL LEAGUE – CENTRAL DIVISION

CHICAGO CUBS

English: Pat Hughes, Keith Moreland
 No Spanish play-by-play personnel information available
 Web: (English) cubs.com (Spanish) loscubs.com

AM		1290 WIRL IL	1450 WMVA VA	FM
660 WBHR MN	1300 WBZQ IN	1480 WRSW IN		92.5 WKXQ IL
720 WGN IL	1330 WRAM IL	1480 KLEE IA		94.3 WSSQ IL
800 KXIC IA	1340 KSEK KS	1490 WDBQ IA		98.9 WISH IL
910 WAKO IL	1350 KRNT IA	1510 WQQW IL		98.9 WJEZ IL
920 WMOK IL	1380 KCIM IA	1540 WBNL IN		99.5 WZIM IL
1050 WDJL IL	1400 WBAT IN	1550 KIWA IA		103.1 WAKO IL
1150 KCPS IA	1400 KADR IA	1570 KMCD IA		104.9 WAXI IN
1170 KJOC IA	1440 WGEM IL	1570 KVTK SD		105.3 KNOD IA
1180 KYOT NE	1440 WIBH IL	1580 WBCP IL		
1200 WRTO IL	1450 WFMB IL	1620 KOZN NE		
1270 WRJM IL	1450 WASK IN	1660 WQLR MI		

CINCINNATI REDS Marty Brennaman, Thom Brennaman, Jeff Brantley, Jim Kelch
 Web: reds.com

AM	700 WLW OH	920 WTCW KY
580 WCHS WV	800 WVHU WV	970 WATH OH
600 WKYH KY	870 WPWT TN	990 WTIG OH
680 WHBE KY	900 WLSI KY	1130 WFNF IN

1150 WLOC KY
 1150 WIMA OH
 1220 WSLM IN
 1230 WCDS KY
 1230 WHOP KY
 1230 WIRO OH
 1230 WYTS OH
 1240 WFTM KY
 1240 WPKE KY
 1240 WSFC KY
 1240 WHIZ OH
 1250 WCHO OH
 1260 WNXT OH
 1270 WXGO IN
 1270 WAIN KY
 1270 WILE OH
 1290 WVOW WV
 1330 WMOR KY
 1340 WXFN IN
 1360 WMOV WV
 1370 WGCL IN
 1370 WGOH KY
 1390 WMPO OH
 1400 WCYN KY
 1400 WFTG KY
 1400 WBTH WV
 1410 WING OH
 1420 WTCR WV
 1430 WXNT IN

* Relays WBEX 1490
 ** Relays WLW 700
 *** Relays WHOP 1230
 + Relays WLSI 900
 ++ Relays WGCL 1370
 +++ Relays WAMW 1580
 # Relays WMPO 1390

MILWAUKEE BREWERS Bob Uecker, Joe Block
 Web: brewers.com

AM
 550 WSAU WI
 570 WMAM WI
 580 WKTY WI
 590 WJMS MI
620 WTMJ WI
 940 WFAW WI
 960 WTCH WI
 1100 WISS WI
 1150 WHBY WI

1430 WXAM KY
 1430 WFOB OH
 1440 WPGW IN
 1450 WBSR FL
 1450 WLKS KY
 1450 WTGO KY
 1450 WWKU KY
 1450 WWXL KY
 1450 WNOS NC
 1450 WHNK WV
 1460 WEKB KY
 1490 WKBV IN
 1490 WBEX OH
 1490 WMOA OH
 1490 WSWW WV
 1550 WCVL IN
 1550 WNDI IN
 1580 WFMW IN
 1600 WZZW WV

FM
 92.7 W224BR OH*
 93.5 WAIN KY
 94.3 WKKI OH
 94.5 W233BG OH**
 95.3 WNDI IN
 95.3 W237BV KY***
 95.9 WAMW IN
 95.9 W239BP KY+
 95.9 W240AT IN++

Relays WATH 970
 ### Relays WPKE 1240
 ^ Relays WFNF 1130
 ^^ Relays WPWT 870
 ^^ Relays WGOH 1370
 ' Relays WBSR 1450
 " Relays WBTH 1400

1230 WCLO WI
 1240 WJMC WI
 1260 WXCE WI
 1280 WGLR WI
 1310 WIBA WI
 1330 WHBL WI
 1350 WPDH WI
 1360 WTAQ WI
 1390 WRIG WI
 1400 WRDB WI
 1430 WBEV WI

1450 KFIZ WI
 1450 WRGO WI
 1490 WIGM WI
 1550 WEVR WI
FM
 92.3 WRLS WI
 92.7 WDLX WI
 03.7 WCYE WI
 93.9 WDOR WI
 94.3 WQPC WI

95.9 W240CE IN+++
 96.7 WBVI OH
 97.1 W246BH OH##
 97.1 W246CE OH###
 98.1 W251AI KY###
 99.1 WHSX KY
 99.5 W258BA IL^
 100.1 WMDJ KY
 100.5 WSJD IL
 100.7 W264BY TN^^
 100.9 WPGW IN
 100.9 W265CH KY^^^
 101.1 W266AL AL'
 101.5 WVLK KY
 101.9 WVOW WV
 102.3 WCYN KY
 102.3 WUGO KY
 102.5 W273BC VA"
 102.9 W275AJ IN""
 102.9 WLKS KY
 103.9 WRBI IN
 104.5 W283AQ WV""
 105.5 WMVR OH
 105.9 W290CB NC%
 106.5 W293AK WV%%
 107.1 WLRX OH
 107.3 WTHX KY
 107.9 W300CB OH<

"" Relays WXFN 1340
 "" Relays WSWW 1490
 % Relays WNOS 1450
 %% Relays WMOV 1360
 < Relays WILE 1270

97.5 WTAQ WI
 98.3 WCQM WI
 99.7 WWIS WI
 99.9 WSAU WI
 106.1 WACD WI
 106.3 WEVR WI
 106.7 WATQ WI
 107.3 WNXR WI

PITTSBURGH PIRATES Greg Brown, Tim Neverett, Bob Walk, Steve Blass
 Web: pirates.com

AM
 590 WMBS PA
 600 WFRM PA
 630 WJAW WV
 680 WISR PA
 680 WKAZ WV
 850 WNTJ PA
 990 WLLI PA
 1150 WHUN PA
 1160 WCCS PA

1230 WBVP PA
 1230 WTIV PA
 1270 WCBC MD
 1280 WJST PA
 1290 WFBG PA
 1310 WNAE PA
 1330 WETZ WV
 1340 WTRN PA
 1390 WKLP WV
 1400 WJET PA

1400 WWGE PA
 1400 WBBB WV
 1420 WGED PA
 1430 WEIR WV
 1440 WAJR WV
 1450 WFRA PA
 1450 WJPA PA
 1450 WQWK PA
 1460 WMBA PA
 1460 WBUC WV

1480 WCNS PA
 1490 WMGW PA
 1490 WTCS WV
 1570 WHTX OH
FM
93.7 KDKA PA
 96.7 WLLF PA
 97.5 WDDH PA
 104.1 WETT WV

ST. LOUIS CARDINALS John Rooney, Mike Shannon, Mike Claiborne, Al Hrabosky, Rick Horton
 Web: cardinals.com

AM
 680 WMFS TN
 690 KEWI AR
 730 WFMW KY
 740 WVLN IL
 800 KAGH AR
 800 KVOM AR
 860 WSON KY
 1050 KSI MO
 1070 KHMO MO
 1090 WCRA IL
1120 KMOX MO
 1220 WLPO IL
 1220 KJAN IA
 1230 WHCO IL
 1230 WJBC IL
 1230 KZYM MO
 1230 WBBZ OK
 1240 KTLO AR
 1240 WTAX IL
 1240 KNEM MO
 1250 KBTC MO
 1280 KCOB IA
 1310 WDXI TN
 1340 KBTA AR
 1340 WJPF IL
 1340 WSOY IL
 1340 WNBS KY
 1340 KXEO MO
 1390 KCRC OK
 1400 WGIL IL
 1400 KREF OK
 1400 KWON OK
 1420 WINI IL
 1430 WYMC KY
 1450 WKEI IL
 1450 KIRX MO
 1450 KWPM MO
 1450 KGFF OK
 1450 WTRO TN
 1460 WROY IL

* Relays WYMC 1430
 ** Relays WSON 860
 *** Relays WTAY 1570
 # Relays WMBD 1470
 ## Relays KJAN 1220

(Cardinals games also on HD2 channel of KEZK 102.5 St. Louis, MO)

NATIONAL LEAGUE – EASTERN DIVISION

ATLANTA BRAVES Jim Powell, Don Sutton
 Web: braves.com

AM
 540 WRGC NC
 560 WXBT SC
 560 WNSR TN
 580 WACQ AL
 580 WGAC GA
 590 WCAB NC
 600 WCVP NC

630 WJDB AL
 630 WNEG GA
 640 WXSM TN
680 WCNN GA
 690 WJOX AL
 730 WUMP AL
 730 WZGV NC
 730 WLIL TN
 740 WMSP AL

1460 KXNO IA
 1470 WMBD IL
 1490 KDRS AR
 1490 WDAN IL
 1490 WTUP MS
 1490 WVBG MS
 1520 WLUV IL
 1540 WSMI IL
 1550 KESJ MO
 1560 WBYS IL
 1570 WTAY IL
 1570 WTRB TN
 1580 KHGG AR

FM

92.3 KSAR AR
 92.5 KPPL MO
 92.7 KASR AR
 92.9 WSEI IL
 92.9 WMFS TN
 93.1 KBDZ MO
 93.3 WQTY IN
 93.5 WSJK IL
 93.7 WJBC IL
 93.9 W230BN KY*
 93.9 KSSZ MO
 94.1 WMIX IL
 94.3 KATI MO
 94.9 WYNG IL
 95.1 KMAQ IA
 95.3 KOKX IA
 95.5 KAAN MO
 95.7 WSEY IL
 95.9 KCOB IA
 95.9 WGKY KY
 95.9 KKBL MO
 96.5 W243CU KY**
 97.3 WTIM IL
 97.3 KYRX MO
 97.5 KNMO MO
 97.5 KOEA MO
 97.7 KOTM IA

97.9 KBXB MO
 97.9 KFBD MO
 98.5 WQKZ IN
 98.5 KWKL MO
 98.7 KWTO MO
 98.9 WHQQ IL
 99.1 KMA IA
 99.1 WCBL KY
 99.3 WZLT TN
 99.7 KTTR MO
 99.9 KIRK MO
 100.3 KURM AR
 100.3 W262BI IL***
 100.3 W262BY IL#
 100.3 KUKU MO
 100.5 KMEM MO
 100.5 KTGR MO
 101.1 K266AN IA##
 101.3 WMSK KY
 101.3 KTXR MO
 102.1 KJFM MO
 102.1 KTUI MO
 102.3 WEBQ IL
 102.3 WRMJ IL
 103.1 KFFA AR
 103.1 KHGG AR
 103.5 WXLT IL
 103.7 KJEL MO
 103.9 KCJF AR
 104.1 KPOC AR
 104.3 KDBB MO
 104.7 KRES MO
 104.7 WMUF TN
 104.9 KAGH AR
 104.9 KYTN TN
 105.1 WGEM IL
 105.5 WREZ IL
 105.9 WOKZ IL
 106.7 WYFX IN
 107.1 WEAI IL

1150 WSNW SC
 1230 WAUD AL
 1230 WBLJ GA
 1230 WJUL GA
 1240 WGGA GA
 1240 WLAG GA
 1240 WPAX GA
 1270 WLIK TN
 1300 WMTM GA
 1310 WHEP AL
 1320 WMSR TN
 1330 WLBB GA
 1340 WGAU GA
 1340 WTIF GA
 1350 WFNS GA
 1360 WELR AL
 1370 WLOP GA
 1370 WDEF TN
 1390 WOHS NC
 1400 WSPG SC
 1400 WJZM TN
 1410 WLAQ GA
 1420 WKWN GA
 1440 WVGG MS

FM

FM TRANSLATORS

92.5 W223AX AL (WHEP 1310)
93.7 W229AG GA (WCNN 680)
 93.7 W229AJ GA (WCLA 1470)
 95.9 W240CA TN (WNSR 560)
 97.5 W248BJ GA (WJUL 1230)
 99.7 W259AK GA (WJAT 800)
 100.5 W263BW AL (WEIS 990)
 100.5 W263AI TN (WGNS 1450)
 101.1 W266BJ AL (WACQ 580)

FM HD2

99.3 WKCN Lumpkin, GA

MIAMI MARLINS

English: Dave Van Horne, Glenn Geffner
 Spanish: Rafael "Felo" Ramirez, Luis "Yiky" Quintana
 Web: marlins.com

710 WAQI Miami, FL (Spanish)
 790 WAXY South Miami, FL (English)

No network information available

NEW YORK METS

English: Howie Rose, Josh Lewin, Ed Coleman
 Spanish: Juan Alicea, Max Perez Jimenez, Nestor Rosario
 Web: mets.com

660 WFAN New York, NY (English)
 1050 WEPN New York, NY (Spanish)

PHILADELPHIA PHILLIES

English: Larry Andersen, Jim Jackson, Gregg Murphy, Scott Franzke
 No Spanish play-by-play personnel information available
 Web: phillies.com

AM

630 WEJL Scranton, PA
 830 WEEU Reading, PA
 930 WHLM Bloomsburg, PA
 1150 WDEL Wilmington, DE*

1440 WGVL SC
 1450 WBHF GA
 1450 WCON GA
 1450 WGPC GA
 1450 WKEU GA
 1450 WMVG GA
 1450 WGNC NC
 1460 WBCU SC
 1470 WCLA GA
 1480 WCHZ AL
 1490 WFZX AL
 1490 WSNL TN
 1490 WAZZ NC
 1490 WSTP NC
 1490 WJJM TN
 1570 WCLE TN
 1580 WPGY GA
 1580 WPMO MS
 1590 WTGA GA
 1590 WCAM SC
 1630 WRDW GA

92.1 WBTR GA
 92.1 WPEH GA
 92.3 WQLI GA
 93.1 WGAC GA
 93.9 WYTK AL
 94.5 WJOX AL
 95.1 WCHZ GA
 95.1 WCDZ TN
 95.5 WJDB AL
 95.9 WTWX AL
 95.9 WSJZ FL
 96.1 WJEM GA
 96.9 WLAG GA
 97.1 WSPG SC
 97.9 WDMG GA
 98.7 WISK GA
 99.3 WCON GA
 99.9 WNNG GA
 99.9 WSNL TN
 100.3 WSEA SC
 100.5 WNNX GA
 101.1 WLJA GA
 101.1 WTGA GA

101.3 W267BC GA (WCNG 102.7)
 101.7 W269CC GA (WJTH 900)
 101.9 W270AF TN (WGNS 1450)
 103.7 W279BD GA (WPAX 1240)
 105.1 W286BO GA (WMTM 1300)
 106.1 W291CF GA (WKWN 1420)
 106.1 W291CA TN (WPTN 780)
 106.9 W295AY GA (WKNL HD2)
 107.9 W300BL TN (WMSR 1320)

100.3 WRBN Clayton, GA

104.3 WAXY-FM Miramar, FL (English)

101.9 WFAN-FM New York, NY (English)

1210 WPHL Philadelphia, PA

1230 WCMC Wildwood, NJ
 1240 WBAX Wilkes-Barre, PA
 1270 WLBR Lebanon, PA
 1320 WGET Gettysburg, PA
 1340 WMID Atlantic City, NJ

101.7 WYUM GA
 102.1 WZAT GA
 102.3 WKZR GA
 102.7 WCNG NC
 102.7 WPUB SC
 103.3 WSNW SC
 103.5 WJAD GA
 103.5 WBCU SC
 103.9 WDDK GA
 103.9 WUMP AL
 103.9 WNTC KY
 104.5 WYYU GA
 104.7 WAAZ FL
 105.3 WSGC GA
 105.5 WIFO GA
 105.5 WROK GA
 106.3 WKNU AL
 106.3 WPFT TN
 107.5 WTIF GA
 107.9 WDBN GA

1360 WPPA Pottsville, PA
 1400 WEST Easton, PA
 1400 WHGB Harrisburg, PA**
 1400 WRAK Williamsport, PA
 1440 WGLD Red Lion, PA
 1440 WNPV Lansdale, PA
 1470 WSNW Allentown, PA
 1490 WBCB Levittown, PA

* Relayed on the HD3 channel of WSTW 93.7
 ** Relayed on the HD3 channel of WNNK 95.3

WASHINGTON NATIONALS Charlie Slows, Dave Jageler
 Web: nationals.com

AM

740 WRNR Martinsburg, WV
 820 WWFD Frederick, MD
 950 WXGI Richmond, VA
 1050 WBRG Lynchburg, VA
 1230 WCMD Cumberland, MD
 1400 WKAV Charlottesville, VA
 1450 WNOS New Bern, NC
 1450 WFTR Front Royal, VA
 1450 WMVA Martinsville, VA
 1470 WJDY Salisbury, MD

* Relays WBRG 1050
 ** Relays WNOS 1450
 *** Relays WRNR 740
 (Also on the HD2 channels of WIAD 94.7 Bethesda, MD and WTOP 103.5 Washington, DC)

NATIONAL LEAGUE – WESTERN DIVISION

ARIZONA DIAMONDBACKS

English: Greg Schulte, Tom Candiotti, Jeff Munn
 Spanish: Miguel Quintana, Oscar Soria, Richard Saenz
 Web: dbacks.com

AM

600 KVNA AZ
620 KTAR AZ
710 KBMB AZ
 760 XENY SO
 780 KAZM AZ
 920 KNML NM
 980 KNTR AZ
 1050 KTBL NM
 1130 KQNA AZ
 1230 KATO AZ

* Relays KZKE 103.3
 ** Relays KFFN 1490

COLORADO ROCKIES

English: Jack Corrigan, Jerry Schemmel
 No Spanish play-by-play personnel information available
 Web: rockies.com

AM

590 KCSJ CO
 610 KCSR NE
 630 KHOW CO
 730 KLOE KS
 730 KYA MT
850 KOA CO
 930 KIUP CO
 960 KNEB NE

1270 KDJI AZ
 1340 KIKO AZ
 1400 KCYK AZ
 1400 KRVS AZ
 1490 KFFN AZ
FM
 90.7 XHLDC SO
 92.1 KZUA AZ
 94.3 KDDL AZ
 95.1 K236BH AZ*
 96.5 XHITA SO

101.1 XHVSS SO
 102.3 KJJJ NV
 103.3 KZKE AZ
 103.7 KNMZ NM
 104.7 XHCNE SO
 104.9 K285DL AZ**
 104.9 XHSO SO
 106.7 KNKI AZ
106.9 KDVA AZ
107.1 KVVA AZ

1600 WHOL Allentown, PA
 1680 WTTM Lindenwold, NJ

FM

92.3 WVSL Selinsgrove, PA
 93.1 WEZW Wildwood Crest, NJ
94.1 WIP-FM Philadelphia, PA
 100.7 WZXL Wildwood, NJ

1490 WXTG Virginia Beach, VA
 1500 WFED Washington, DC
 1580 WHFS Morningside, MD

FM

102.1 WXTG-FM Virginia Beach, VA
 104.5 W283AZ Lynchburg, VA*
 105.9 W290CB New Bern, NC**
 106.5 W293AM Martinsburg, WV***
106.7 WJFK Manassas, VA

95.3 K237DW MT*	100.1 KMMR MT	103.1 KYDT WY
96.5 KDZN MT	101.7 KDNO WY	105.3 KDWW WY
98.3 KZZS WY	102.3 KSPK CO	
99.5 KRKI SD	102.7 KINX MT	

* Relays KMTA 1050

LOS ANGELES DODGERS

English: Vin Scully, Rick Monday, Charley Steiner
 Spanish: Jaime Jarrín, Pepe Yñiguez, Fernando Valenzuela
 Web: (English) dodgers.com (Spanish) losdodgers.com

<u>AM</u>	1020 KTNQ CA	1360 KWDJ CA	1560 KNZR CA
570 KLAC CA	1220 KHTS CA	1360 WVMC IL*	1600 KGST CA
600 KR0D TX	1230 KBOV CA	1400 KEZL CA	
610 KAVL CA	1230 KYVA NM	1400 KSHP NV	<u>FM</u>
910 KOXR CA	1300 KROP CA	1410 WIQR AL	100.5 WSJD IL*
920 KPSI CA	1340 KCBL CA	1450 KVEN CA	101.7 KQTM NM
940 KICE OR	1340 KYNS CA	1450 KRZY NM	
	1340 WSTA VI*	1480 KSBQ CA	

*Partial schedule

SAN DIEGO PADRES

English: Jerry Coleman, Ted Leitner, Andy Masur
 Spanish: Eduardo Ortega, Juan Angel Avila
 Web: (English) padres.com (Spanish) padresbeisbol.com

860 XEMO Tijuana, BCN (Spanish)	1090 XEPRS Rosarito, BCN (English)
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SAN FRANCISCO GIANTS

English: Jon Miller, Duane Kuiper, Mike Krukow, Dave Fleming
 Spanish: Erwin Higueros, Tito Fuentes
 Web: sfgiants.com

<u>AM</u>	1430 KFIG Fresno, CA
670 KPUA Hilo, Hawaii, HI	<u>FM</u>
680 KNBR San Francisco, CA	94.1 KBKY Merced, CA
790 KFPT Fresno, CA	96.7 KNOB Healdsburg, CA
860 KTRB San Francisco, CA	101.1 KMFV Mendocino, CA
1230 KJFK Reno, NV	101.5 KEKA Eureka, CA
1360 KUIK Hillsboro, OR	102.3 KNTK Mount Shasta, CA
1400 KKJL San Luis Obispo, CA	
1420 KKEA Honolulu, Oahu, HI	

AMERICAN LEAGUE – CENTRAL DIVISION

CHICAGO WHITE SOX

English: Ed Farmer, Darrin Jackson
 No Spanish play-by-play information available
 Web: (English) whitesox.com (Spanish) orgullosox.com

<u>AM</u>	1590 WAIK Galesburg, IL
670 WSCR Chicago, IL	<u>FM</u>
860 WMRI Marion, IN	93.9 WCEZ Carthage, IL
1060 WRHL Rochelle, IL	95.5 WNUA HD2 Chicago, IL
1240 WSDR Sterling, IL	95.7 WAOR Nappanee, IN
1250 WSPL Streator, IL	96.5 WZPN Farmington, IL
1280 WBIG Aurora, IL	97.5 W248BB Hillside, IL*
1330 WNTA Rockford, IL	97.7 WLQI Rensselaer, IN
1360 WLBK De Kalb, IL	99.5 WZIM Lexington, IL
1430 WCMY Ottawa, IL	100.5 WSJD Mount Carmel, IL
1490 WZOE Princeton, IL	101.3 WVIL Virginia, IL
1560 WRIN Rensselaer, IN	107.7 WMRS Monticello, IN
1580 WBCP Urbana, IL	

* Relays HD2 channel of WNUA 95.5

CLEVELAND INDIANS Tom Hamilton, Jim Rosenhaus
 Web: Indians.com

AM

570 WKBN Youngstown, OH
 930 WEOL Elyria/Lorain, OH
 970 WFUN Ashtabula, OH
1100 WTAM Cleveland, OH
 1260 WRIE Erie, PA
 1270 WUCO Marysville, OH
 1300 WMVO Mount Vernon, OH
 1320 WLOH Lancaster, OH
 1330 WFIN Findlay, OH
 1370 WSPD Toledo, OH
 1390 WBLL Bellefontaine, OH
 1430 WFOB Fostoria, OH
 1450 WLEC Sandusky, OH
 1460 WBNS Columbus, OH

DETROIT TIGERS Jim Price, Dan Dickerson
 Web: tigers.com

AM

590 WKZO MI
 680 WDBC MI
 730 WVFN MI
 790 WSGW MI
 930 WBCK MI
 1050 WTKA MI
 1230 WBET MI
 1230 WSOO MI
 1240 WIAN MI
 1270 WMKT MI

1270 WXYT MI

1310 WCCW MI
 1320 WDMJ MI
 1330 WTRX MI
 1340 WMBN MI
 1340 WMTE MI
 1360 WKYO MI
 1380 WPHM MI
 1400 WCCY MI
 1450 WHTC MI
 1450 WIBM MI

1460 WBKC Painesville, OH
 1480 WHBC Canton, OH
 1490 WMRN Marion, OH
 1540 WBTC Uhrichsville, OH
 1590 WAKR Akron, OH

FM

92.7 WQEL Bucyrus, OH
 93.1 WWSR Lima, OH
 93.5 WBNV Barnesville, OH
 95.3 WLKR Norwalk, OH
 100.9 WBNO Bryan, OH
 100.9 WJAW McConnellsville, OH
 104.5 WQKT Wooster, OH
 107.1 WDOH Delphos, OH

1450 WMIQ MI
 1450 WNBY MI
 1460 WBRN MI
 1470 WLQR OH
 1590 WTVB MI

FM

92.1 WCSR MI
 93.7 WKAD MI
 93.9 WAVC MI
 94.5 WLJZ MI

89.1 WMTR OH
 96.7 WRGZ MI
97.1 WXYT MI
 97.7 WTGV MI
 98.3 WLCS MI
 98.7 WLDN MI
 100.3 WLKI IN
 100.7 WWTH MI
 101.1 WGRY MI
 107.3 WBBL MI

KANSAS CITY ROYALS Denny Williams, Steve Physioc, Ryan Lefebvre, Steve Stewart
 Web: royals.com

AM

560 KWTO MO
 580 WIBW KS
 610 KCSP MO
 680 KFEQ MO
 690 KGGF KS
 790 KXXX KS
 860 KKOW KS
 960 KMA IA
 990 KRSL KS
 990 KRMO MO
 1130 KLEY KS
 1150 KSAL KS
 1180 KZOT NE
 1190 KSVS KS
 1240 KFH KS
 1240 KIUL KS
 1280 KDKD MO
 1290 KMMM KS
 1300 KMMO MO
 1310 KYUL KS
 1310 KGMT NE
 1320 KLWN KS

1340 KGGS KS
 1350 KMAN KS
 1370 KGNO KS
 1370 KIOL KS
 1370 KAWL NE
 1390 KNCK KS
 1400 KAYS KS
 1400 KVOE KS
 1420 KJCK KS
 1420 KULY KS
 1420 KRLL MO
 1430 KKOZ MO
 1440 KRDZ CO
 1450 KWBW KS
 1450 KOKO MO
 1450 KBFS SD
 1450 KYNT SD
 1460 KKOY KS
 1470 KSMM KS
 1530 KQNK KS
 1540 KLKC KS
 1550 KKLE KS
 1560 KABI KS
 1580 KNIM MO

1600 KMDO KS
 1600 KTTN MO
 1600 KNCY NE

FM

92.1 KKOZ MO
 92.3 KTTN MO
 92.7 KASR AR
 93.7 KNTK NE
 94.5 KLIQ NE
 96.7 KSOB KS
 97.1 KNIM MO
 97.3 K247AT KS*
 97.3 KBLR NE
 100.1 KBBM MO
 100.1 KKWK MO
 100.9 KHOM MO
 101.7 KDJM KS
 102.9 KMMO MO
 103.1 KNCY NE
 103.1 KYDT WY
 103.9 KOMB KS
 106.7 KQNK KS

* Relays KKOY 1460

MINNESOTA TWINS Kris Atteberry, Dan Gladden, Bert Blyleven
 Web: twinsbaseball.com

AM

570 WNAX SD
 610 KDAL MN

620 KMNS IA
 710 KXMR ND
 730 KWOA MN

790 KFGO ND
 860 KNUJ MN
 870 KPRM MN

910 KCJB ND
 920 KDHL MN
 920 KWAD MN
 950 KWAT SD
 1020 KJJJ MN
 1060 KGFX SD
 1080 KYMN MN
 1140 KSOO SD
 1210 KOKK SD
 1220 KDDR ND
 1230 KMRS MN
 1230 KWNO MN
 1230 KTRF MN
 1240 KICD IA
 1240 WJON MN
 1240 WMFG MN
 1240 KDLR ND
 1250 KCFI IA
 1260 KROX MN
 1290 KBMO MN
 1310 KTWN MN
 1310 KNOX ND
 1320 KOZY MN
 1340 KDLM MN
 1340 KROC MN

1340 WEVE MN
 1340 KTOQ SD
 1350 KCHK MN
 1350 KDIO MN
 1390 KRFO MN
 1400 KEYL MN
 1400 KMHL MN
 1400 KQDJ ND
 1400 WBIZ WI
 1410 KRWB MN
 1420 KTOE MN
 1420 KGIM SD
 1430 KNXP MN
 1450 KBUN MN
 1450 WELY MN
 1460 KLTC ND
 1490 KNDC ND
 1490 KOVC ND
 1510 KIFG IA
 1570 KAKK MN
 1580 KDOM MN
 1590 KWLM MN
 1590 WIXK WI
 1600 KDAK ND
 1650 KCNZ IA

* Relays KTOE 1420
 ** Relays KRWB 1410
 *** Relays KGIM 1420

AMERICAN LEAGUE – EASTERN DIVISION

BALTIMORE ORIOLES Joe Angel, Fred Manfra
 Web: orioles.com

AM

560 WFRB Frostburg, MD
 570 WSPZ Bethesda, MD
 790 WSVG Mount Jackson, VA
 900 WKDW Staunton, VA
 910 WSBA York, PA
 930 WDLX Washington, NC
 980 WTEM Washington, DC
 1000 WIOO Carlisle, PA*
 1050 WBRG Lynchburg, VA
1090 WBAL Baltimore, MD
 1160 WODY Fieldale, VA
 1230 WAMM Woodstock, VA
 1250 WGHB Farmville, NC
 1280 WHVR Hanover, PA
 1290 WWTX Wilmington, DE
 1320 WICO Salisbury, MD
 1340 WHAP Hopewell, VA
 1340 WEPM Martinsburg, WV

* Holds CP to move to 1010 kHz
 ** Relays WEEO 1480/WIOO 1000
 ***Relays WBRG 1050
 # Relays WIJK 1590

BOSTON RED SOX English: Dave O'Brien, Joe Castiglione, Spanish: Uri Berenguer, Oscar Báez
 Web: redsox.com

1510 WUFC Boston, MA (Spanish)

No network information available

1430 WNAV Annapolis, MD
 1450 WTBO Cumberland, MD
 1450 WTHU Thurmont, MD
 1470 WTTR Westminster, MD
 1480 WEEO Shippensburg, PA
 1490 WARK Hagerstown, MD
 1530 WCTR Chestertown, MD
 1550 WMRE Charles Town, WV
 1590 WIJK Ocean City, MD

FM

92.5 WICO-FM Pocomoke City, MD
 92.7 WWXT Prince Frederick, MD
 93.9 W230AX Shippensburg, PA**
 94.1 WVSP Yorktown, VA
 94.3 WWXX Warrenton, VA
 97.9 W250AP Carlisle, PA**
 104.5 W283AZ Lynchburg, VA***
 105.1 W286BB Ocean Pines, MD#

93.7 WEEI-FM Lawrence, MA (English)

FM

92.1 WYRQ MN
 94.3 KDOM MN
 94.3 KKIN MN
 94.3 KULO MN
 94.5 WELY MN
 96.3 KTWN MN
 96.7 KKCC MN
 97.3 KRZY MN
100.3 KFAN MN
 100.9 WCMP MN
 102.7 K274AL MN*
 102.7 KYTC MN
 102.9 K275BB MN**
 103.5 KUAL MN
 104.1 KSDM MN
 104.5 WQXJ MN
 104.9 WLMX WI
 105.5 KMAV ND
 106.9 WMOZ MN
 107.1 KMGK MN
 107.1 K296FW SD***
 107.3 KNUJ MN

NEW YORK YANKEES

English: John Sterling, Suzyn Waldman
 Spanish: Beto Villa, Francisco Rivera, Felix DeJesus
 Web: (English) yankees.com (Spanish) yankeesbesibol.com

AM

570 WSYR NY
 600 WICC CT
 620 WHEN NY
 620 WVMT VT
 630 WMFD NC
 640 WMEN FL
 790 WPRV RI
 800 WLAD CT
880 WCBS NY
 920 KBAD NV
 980 WXML CT

1040 WHBO FL
 1050 WYBG NY
 1100 KWWN NY
 1150 KDEF NM
 1160 WPIE NY
 1180 WHAM NY
1190 WAMT FL
 1190 WSDE NY
 1230 WIXT NY
 1240 WJTN NY
1280 WADO NY

1310 WTLB NY
 1340 WBRK MA
 1340 WENT NY
 1340 WIRY NY
 1350 WRNY NY
 1380 WABH NY
 1410 WPOP CT
 1410 WELM NY
 1420 WACK NY
 1430 WENE NY
 1450 WHLL CT
1450 WOCN FL
 1450 WTSA VT

1460 KENO NV
 1590 WGGO NY

FM
 94.3 WKXP NY
 97.7 WZAD NY
 103.5 WUUF NY
 104.5 WTMM NY
 106.1 WPDA NY
 107.1 WWYY NY

TAMPA BAY RAYS

English: Andy Freed, Dave Wills, Neil Solondz, Spanish: Enrique Oliu, Ricardo Taveras
 Web: raysbaseball.com

AM

620 WDAE St. Petersburg, FL
 660 WORL Altamonte Springs, FL
680 WGES St. Petersburg, FL
 1200 WINK Pine Island Center, FL
 1220 WSRQ Sarasota, FL
 1230 WONN Lakeland, FL
 1270 WNLS Tallahassee, FL
 1300 WMEL Cocoa Beach/Melbourne, FL
 1350 WDCF Dade City, FL
 1390 WFHT Avon Park, FL
 1400 WZHR Zephyrhills, FL
 1430 WLTV Panama City, FL
 1450 WWJB Brooksville, FL

* Relays WMEL 1300
 ** Relays WSRQ 1220
 *** Relays WENG 1530

TORONTO BLUE JAYS Jerry Howarth, Jack Morris, Mike Wilner
 Web: bluejays.com

AM

570 CKGL Kitchener, ON
590 CJCL Toronto, ON
 600 CKAT North Bay, ON
 690 CKGM Montreal, QC
 920 CNXW Wingham, ON
 960 CFAC Calgary, AB
 1070 CHOK Sarnia, ON
 1190 CFSL Weyburn, SK
 1210 CFYM Kindersley, SK
 1240 CJCS Stratford, ON
 1280 CJSL Estevan, SK

1490 WAZL Hazleton, PA
 1520 WBZW Apopka, FL
 1530 WENG Englewood, FL
1550 WAMA Tampa, FL
 1580 WCCF Port Charlotte, FL

FM

99.9 WXJB Homosassa, FL
 103.3 W277AN Cape Canaveral, FL*
 104.3 WYKE Inglis/Crystal River, FL
 104.9 WYGC High Springs, FL
 106.9 W295BH Sarasota, FL**
 107.5 W298AV Englewood, FL***

1290 CJBK London, ON
 1310 CIWW Ottawa, ON
 1330 CJYM Rosetown, SK
 1410 CFTE Vancouver, BC
 1570 CKMW Winkler, MB

FM

88.1 CKMW-FM Winkler, MB
 88.9 CHNI St. John, NB
 90.5 CJMB Peterborough, ON
 91.9 CKNI Moncton, NB
 95.7 CJNI Halifax, NS

AMERICAN LEAGUE – WESTERN DIVISION

HOUSTON ASTROS English: Robert Ford, Steve Sparks, Spanish: Francisco Romero, Alex Treviño
 Web: astros.com

AM

760 KTKR San Antonio, TX
790 KBME Houston, TX
 1010 KBBW Waco, TX
1010 KLAT Houston, TX

1150 KZNE College Station, TX
 1220 KMYL Madisonville, TX
 1230 KSIX Corpus Christi, TX
 1260 KSML Diboll, TX
 1280 KWHI Brenham, TX

1290 KIVY Crockett, TX
 1300 KSYB Shreveport, LA
 1300 KVET Austin, TX
 1310 KEZM Sulphur, LA
 1400 KBYG Big Spring, TX
 1400 KTEM Temple, TX
 1440 KETX Livingston, TX
 1440 KPUR Amarillo, TX
 1450 KMHT Marshall, TX

LOS ANGELES ANGELS OF ANAHEIM

English: Terry Smith, José Mota
 Spanish: Amaury Pi-González
 Web: angels.com

710 KSPN Los Angeles, CA
830 KLAA Orange, CA
 910 KRAK Hesperia, CA
 970 KHXY Bakersfield, CA
 1010 KXPS Thousand Palms, CA
 1100 KWWN Las Vegas, NV
 1220 KWKU Pomona, CA

OAKLAND ATHLETICS

English: Ken Korach, Vince Controneo, Ray Fosse
 Spanish: Amaury Pi-González, Manolo Hernández-Douen
 Web: oaklandathletics.com

AM

790 KEJY Eureka, CA*
 790 KFPT Fresno, CA
 950 KAHJ Auburn, CA
 970 KESP Modesto, CA
 990 KATD Pittsburg, CA*
1010 KIQI San Francisco, CA*
 1140 KHTK Sacramento, CA
 1240 KPOD Crescent City, CA
 1270 KXBX Lakeport, CA

* Nights/Weekends Only
 ** Relays KRKC 1490

SEATTLE MARINERS English: Rick Rizzos, Dave Sims, Spanish: Alex Rivera
 Web: mariners.com

AM

550 KTZN AK
710 KIRO WA
 800 KINY AK
 900 KKRT WA
 910 KKSJ WA
 920 KXLY WA
 930 KTKN AK
 990 KTHH OR
 1020 KWIQ WA
 1030 KMAS WA

* Relays KNTB 1480

TEXAS RANGERS English: Eric Nadel, Matt Hicks, Spanish: Eleno Ornelas, Benji Gil
 Web: texasrangers.com

AM

600 KTBB TX
 670 KHGZ AR
 690 KPET TX
 710 KGNC TX

1470 KWRD Henderson, TX
 1560 WSLA Slidell, LA
 1590 KGAS Carthage, TX
 1600 KOGT Orange, TX

FM

98.3 KULM Columbus, TX
 103.9 KMHT-FM Marshall, TX
 105.3 KTWL Hempstead, TX

1240 KLOA Ridgecrest, CA
 1240 WSNJ Millville, NJ
 1280 KZNS Salt Lake City, UT
 1330 KWKW Los Angeles, CA
 1400 KKZZ Santa Paula, CA
 1490 KMET Banning, CA
 1520 KVTA Port Hueneme, CA

1300 KWRU Fresno, CA*

1340 KATA Eureka, CA
 1410 KMYC Marysville, CA
 1440 KVON Napa, CA
 1490 KRKC King City, CA
 1670 KNRO Redding, CA

FM

95.7 KGMZ San Francisco, CA
 104.9 K285FW King City, CA**

1240 KVLF TX*
 1250 KZDC TX
 1260 KBHC AR
 1260 KWNX TX
 1280 KPTQ WA
 1300 KSYB LA
 1340 KGHM OK
 1350 KCAR TX
 1380 KBWD TX
 1380 KHEY TX
 1390 KDQN AR
 1400 KKTK TX
 1450 KQYX KS
 1460 KCLE TX
 1470 KGND OK
 1480 KTHS AR
 1480 KBXD TX
 1490 KRUI NM

* KALP broadcasts weekday games, while KVLF broadcasts weekend games.
 ** Non-commercial educational; live ads in PBP replaced with local PSAs.

FM TRANSLATORS

98.9 K255BH Glenwood, AR (KHGZ 670) 101.3 K267AI Moody, TX (KRZI 1660)
 100.9 K265DV Temple, TX (KRZI 1660)

HD CHANNELS

95.1 KNDE College Station, TX (HD3 – KZNE 1150)

This is the biggest SportChannels column I've ever done...perhaps the biggest in IRCA history! Did you know that the Texas Rangers takes its name from a special unit of the Texas Department of Public Safety? This unit was made famous through the radio and TV series "Tales of the Texas Rangers". The team took its present name when the franchise relocated from Washington, DC (where it had been the second Washington Senators) prior to the 1972 season. The Rangers still own the rights to the Washington Senators name, so the present Washington team in the National League took the Nationals name when they moved from Montreal (where they had been the Expos) prior to the 2005 season.

Did you also know that Chicago is the only city to have its two original baseball teams? The Cubs and White Sox have been in Chicago from the beginning of modern Major League Baseball. Two teams have moved twice in their history: the Braves left Boston for Milwaukee after the 1952 season, and moved to Atlanta after the 1965 season. The Athletics left Philadelphia after the 1954 season for Kansas City; the A's have been in Oakland since 1968.

KMQX 88.5, KSQX 89.1 and KQXS 91.1 are the first non-commercial educational stations I know of to carry the games of a Major League Baseball team KMQX is licensed to Mesquite, TX; the high school station was featured on one of the national newscasts. KSQX is licensed to Springtown, while KQXS is licensed to Eastland. This has been tried in the NFL and the NHL. A few years ago, KHOY 88.1 was the Laredo affiliate for the Dallas Cowboys football network. From 2001 to 2006, WSIE 88.7 Edwardsville, IL was the Metro East affiliate for the St. Louis Blues hockey network; the aim was to fill in gaps in KTRS 550's coverage in the same area. I was the coverage coordinator for WSIE's Blues coverage from 2003 to 2006. WSIE lost its Blues affiliation prior to the 2006-07 season.

I promise the column will be smaller next time, when SportChannels presents the network lists for the National Football Conference of the National Football League. 73.

GEOMAGNETIC INDICES

Compiled by: Phil Bytheway
 E-mail: phil_tekno@yahoo.com

Geomagnetic Summary July 1 2013 through July 31 2013

Tabulated from email status daily (K @ 0000 UTC.)

Date	Flux	A	K	Space Wx					
7/ 1	108	8	1	no storms	5	141	9	2	no storms
2	114	4	1	no storms	6	134	21	4	no storms
3	125	4	2	minor, R1	7	126	8	1	no storms
4	138	5	2	no storms	8	119	6	1	no storms

9	120	9	4	no storms	21	109	5	2	no storms
10	118	25	3	minor, G1	22	110	6	3	no storms
11	113	18	2	minor, G1	23	107	5	2	no storms
12	118	9	3	no storms	24	108	5	1	no storms
13	114	10	2	no storms	25	107	11	4	no storms
14	113	20	4	no storms	26	110	14	2	no storms
15	114	25	2	minor, G1	27	108	11	2	no storms
7/16	114	5	1	no storms	28	109	7	3	no storms
7/17	111	5	2	no storms	29	112	6	1	no storms
18	115	15	3	no storms	30	113	6	2	no storms
19	114	14	3	no storms	7/31	109	5	1	no storms
20	113	6	1	no storms					

Sx – Solar Radiation Storm Level
Gx – Geomagnetic Storm Level
Rx – Radio Blackouts Level

Antenna Reference Manual, Volume 1 8th Printing, Digitally Enhanced and Updated

This completely-revised book features the plans for the original NRC 4' FET Altazimuth loop antenna. Completely revamped with digitally enhanced drawings and updated material sources, it also contains other articles on the subject of antennas for medium wave DX'ers, most originally published between 1969 and 1974 in DX News. It includes articles on air-core and ferrite core loops, antenna tuners for longwire antennas, and antenna couplers. This is the original book which has been available for over 20 years. \$8.95 to IRCA/NRC members (\$11.95, non-members). 8 1/2" X 11" bound book format. Order from: NRC Publications – PO Box 473251 – Aurora CO 80047-3251 (CO residents, please add 3.5% sales tax). Please state your IRCA membership affiliation when you order.

Antenna Reference Manual, Volume 2 8th Printing Digitally Enhanced and Updated

This book is a compilation of numerous articles on the subject of antennas for medium wave DX'ers, originally published between 1974 and 1981 in DX News. Some articles were formerly available as reprints. Includes articles on air-core and ferrite core loops, antenna tuners for longwire and Beverage antennas, and phasing units for use with Beverage antennas and longwires. 8 1/2" X 11" bound book format. Price: \$8.95 to IRCA/NRC members; \$11.95 to non-members. Order from: NRC Publications – PO Box 473251 – Aurora CO 80047-3251 (CO residents, please add 3.5% sales tax). Please state your IRCA membership affiliation when you order.

Antenna Reference Manual, Volume 3

A compilation of 17 articles on antennas, phasing impedance matching, and RF amplification for medium wave DX'ers, some of the articles were published in DX News between 1999 and 2004. 8 1/2" X 11" bound book format. IRCA/NRC member price: \$11.95; non-member price \$16.95; overseas customers, please contact us for exact price. Order from: NRC Publications – PO Box 473251 – Aurora CO 80047-3251 (CO residents, please add 3.5% sales tax). Please state your IRCA membership affiliation when you order.

IRCA Mexican Log, 17th Edition (Winter 2012)

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 – \$9.50 (US/Canada/sea mail), \$11.50 (México), \$12.50 (rest of the world). Non-IRCA/NRC members – add \$2.00.

To order from the IRCA Bookstore, send the correct amount to: IRCA BOOKSTORE, 9705 MARY NW, SEATTLE WA 98117-2334 (PayPal [add \$1.00] email: phil_tekno@yahoo.com). Please state club affiliation when ordering.

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 members – \$2.25 (US/Canada/Mexico/sea mail), \$3.00 (rest of the Americas/Europe airmail), \$4.00 (Australia/New Zealand airmail). Non-IRCA members – add \$1.00.

An Introduction to Broadcast Band DXing

This tri-folded brochure is ideal for explaining the Broadcast Band DXing hobby and the IRCA. It can be included with reception reports and given to other interested folks. Sub topics include: What is DXing?, Broadcasting's early years, The first DXers, Clubs helped listeners share, Our hobby today

and DX clubs still unite listeners. It is two color printed on heavy stock. Price is \$0.35/brochure (US and Canada), \$1.00 (rest of the world). Minimum order is 10.

To order any of the above items from the **IRCA Bookstore**, send the correct amount (in US funds payable to **Phil Bytheway** – which will be returned if not made out to **Phil Bytheway**) to: **IRCA BOOKSTORE, 9705 MARY NW, SEATTLE WA 98117-2334** (email: phil_tekno@yahoo.com).

ARRL Hamfest Calendar

As you may know (and I can say this from experience-EIC), a Hamfest is a great place to find good deals on new and used receivers, wires and cables for antenna projects, and other hobby-related needs. The American Radio Relay League has a Web page to help you find a Hamfest near your home QTH or while you're traveling to other parts of the country. You can search by Zip Code, select from Hamfests within 25, 50, 100 and 250 miles of your home QTH, as well as city and state. (Searching by ARRL division and section is only for the Ham-savvy, hi.) To find a Hamfest in near your home QTH, visit <http://www.arrl.org/hamfests-and-conventions-calendar> and plug in your location or Zip Code. You'll be able to find upcoming Hamfests in your local area.

IRCA Facebook Page

The IRCA's Facebook page is now online! This is a new feature of IRCA, featuring photos of transmitter sites (many of which provided by our Chairman, John C. Johnson), members' shacks (your Editor-in-Chief included) and plenty of information. If you have a Facebook page, enter "International Radio Club of America" into your Facebook search engine, then click the "Like" icon. Many thanks to Mike Sanburn (KG6LJU) and John C. Johnson for setting this page up.

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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MEMBERSHIP DUES (DXM=printed DX Monitor, SDXM=soft e-mailed version)

Destination	SDXM	DXM	DXM+SDXM
USA	\$10	\$31	\$36
Canada & Mexico (group 2)	\$10	\$40	\$45
Western Europe (group 3)	\$10	\$52	\$57
Australia/NZ/Japan (group 4)	\$10	\$52	\$57
Rest of world (group 5)	\$10	\$52	\$57

TRIAL MEMBERSHIP (10 issues) TO USA-CANADA-MEXICO only: \$10 DXM, \$12 DXM / SDXM Installment Rate: 2 payments a year of one-half dues plus \$1.

Make checks and Money Orders in US funds payable to IRCA.

All dues and address changes go to: **IRCA, PO Box 60241, Lafayette LA 70596**

Pay electronically with PayPal – add \$1 to all prices above. Go to www.paypal.com, then send your dues to ircamember@ircaonline.org – contact Lynn Hollerman for more information.

Sample copies of DX Monitor are available. Along with your request, please include first class postage of: **45c** for USA addresses, **79c** for Canada and Mexico or **2-International Reply Coupons** each, for other countries. Send to: **IRCA, 414 SE 3rd St, Ocala FL 34471**. (Maximum two samples per year.)

For information on **subscribing to the IRCA mailing list** at Hard-Core-DX, a group e-mail service, contact the moderator, Lynn Hollerman at lynnhollerman@yahoo.com.

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