

DX News

Serving DXers since 1933



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AM Radio Log 38th Edition Now Available:

The National Radio Club is proud to announce the publication of the 38th edition of the *AM Radio Log*. The *AM Radio Log* is a source for information on AM Radio Stations in the United States and Canada. The 38th edition of the Log contains more than 300 pages of data and cross references and 12 pages of instructions in 8-1/2" x 11" size, 3-hole punched, U.S. loose leaf format. This publication fits nicely into a 1" three-ring binder. 9,000+ updates since last year's 37th Edition of the log! Cross references include by State/ Provinces in frequency order. This list is ideal for targeting needed areas. Additional reference lists include call letters of FM simulcasts with the AM Stations listing, listings of regional groups of stations in the groups section (separate section of the log book) and a cross reference of those stations that are licensed to use IBOC (In Band On Channel) digital audio and a comprehensive list of FM translators that are now simulcasting with AM broadcasters.

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Convention: This year's joint IRCA/NRC convention in Reno is now complete. Hopefully we'll be getting a report from the scene for publication in *DX News*. On page 33, you can read the report that NRC Board Chair Wayne Heinen sent to be read at the NRC business meeting during the convention.

In the meantime, it's never too soon to think about next year's convention. If you are thinking about making a bid to host the convention next year, please contact Ernie Wesolowski at NEErnieW@yahoo.com or 13312 Westwood Lane, Omaha, NE 68144-3543.

Confirmed DXer: Phil Bytheway received no contributions for the bimonthly Confirmed DXer

column. His next deadline will probably be right before the October 20 publisher's deadline – reach him at phil_tekno@yahoo.com or 9705 Mary NW, Seattle WA 98117-2334,

Weekly Interim AM Switch Updates on e-DXN.com: My apologies to those who have been looking for the weekly "Interim AM Switch" updates on e-DXN.com. My work schedule has been very hectic of late and I haven't been able to keep up with the weekly schedule over the summer. But things should be returning to normal over the next few weeks, so the Interim AM Switch should be back on e-DXN.com every weekend that *DX News* is not published.

Volume 85: We have one more issue in the current volume and then Volume 85 of *DX News* will be here! Below is the tentative schedule, with the publisher's deadline always on a Friday (at 2400 ELT), and the formal print date (i.e., the target date for arrival of the print version by mail) the Monday 10 days later.

Volume 84 and Tentative Volume 85 DX News Schedule

No	D'dline	Print	No	D'dline	Print
20	Sept. 8	Sept. 18	10	Jan. 26	Feb. 5
	Vol. 85		11	Feb. 9	Feb. 19
1	Sept. 22	Oct. 2	12	Feb. 23	Mar. 5
2	Oct. 6	Oct. 16	13	Mar. 16	Mar. 26
3	Oct. 20	Oct. 30	14	Apr. 6	Apr. 16
4	Nov. 3	Nov. 13	15	Apr. 27	May 7
5	Nov. 17	Nov. 27	16	May 25	June 4
6	Dec. 1	Dec. 11	17	June 22	July 2
7	Dec. 15	Dec. 25	18	July 20	July 30
8	Dec. 29	Jan. 8	19	Aug. 17	Aug. 27
9	Jan. 12	Jan. 22	20	Sept. 7	Sept. 17

Membership Report

New Members: Welcome to Robert Bell, Toronto ON.

Renewing Members: Thanks for the ongoing support of Francesco Clemente; Michael J. De Roo; Mark Durenberger; Bill Dvorak; Eugene Hinton; Lee Reynolds; Anthony Rogers; Andy Ross; Terry Sparks; John Tow; Raymond Vallee; James J. Wallace; Frank Welch; Thomas H. White; and Philip Zmenkowski.

AM Switch

David Yocis, 9412 Ferry Landing Ct., Alexandria VA 22309, NRCDXNews@gmail.com
Canadian info – Compiled by Shawn Axelrod and Dan Sys
NRC AM Log updates from Wayne Heinen, amradiolog@nrcdxas.org

Official updates from the FCC and the CRTC

CALL CHANGES

- 1000 KXRB SD **Sioux Falls** – Call change to KSOO (Aug. 7).
1050 WSEN NY **Baldwinsville** – Call change to WBVG (Aug. 14).
1140 KSOO SD **Sioux Falls** – Call change to KXRB (Aug. 7).
1310 WRSB NY **Canandaigua** – Call change to WOKR (Aug. 1).
1450 KLZS OR **Eugene** – Call change to KEED (Aug. 1).
1590 WOKR NY **Brockport** – Call change to WRSB (Aug. 1).
WGYA PR **Guayama** – Call change (back) to WXRF (Aug. 2).



STATIONS GOING DARK

- 1230 CFGN NL **Channel-Port aux Basques** – Has moved to 96.7 MHz FM; AM will be going silent soon.
1240 CJCS ON **Stratford** – Has moved to 107.1 MHz FM; AM is silent and deleted.

NEW STATION WATCH

- 1340 WWNH NH **Madbury** – Longstanding unbuilt CP, reinstated last year, now dismissed. The station operated for several years in the 1990s on its license to cover; the licensee (Brian Dodge) settled an FCC investigation into his extensive FM translator network last year that allowed him to keep a few FM translators and build this CP subject to submitting documentation within 180 days, but nothing was ever submitted, so the FCC cancelled all the licenses and CPs.
1490 KHTC MT **Malmstrom AFB** – This “new” station has been on the air since 2011 but is still listed as a CP. It seems the original applicant got the CP for a site that was underwater most of the year and had no electrical power; when the current owners bought the as-yet-unbuilt CP in 2010 they applied to move the tower, and the FCC granted that amendment to the CP, but without getting any of the required permits (especially for archeological or Native American significance). The licensee filed a stack of letters with the FCC on August 16 attesting to the lack of any problems with the go-ahead for final licensing.
1580 KWLO UT **Springville** – Pending CP applies to amend to U1 10000/380, at a different site than specified in the CP (40-12-22/111-40-11, near KOVO-960 site).

CONSTRUCTION PERMITS (CPs) FOR EXISTING STATIONS

CPs fully licensed and on the air:

- 1180 WLDS IL **Jacksonville** – CP for U1 300/2 (not U1 1000/2 as granted) is on the air.
1380 KKOO OR **Ontario** – CP for U1 5000/25 is on the air.
1470 WMGG FL **Egypt Lake** – CP for U4 2800/800, ex-CoL Dunedin FL, and new site (28-00-42/82-29-53) is on the air.
1470 KYYW TX **Abilene** – CP for U1 5000/11 is on the air.
1560 WBYM PR **Bayamon** – CP for U1 4000/740 and new site (18-20-59/66-09-26) is on the air.
1700 KKLK TX **Richardson** – Checking some things for the new Log, we found that the CP to consolidate the separate day/night transmitter sites (at the same U1 10000/1000) was in fact finally licensed and on the air at U1 5000/1000. Seems the 10 kW day power was creating too much QRM for the neighbors.

CPs built and awaiting final licensing:


- 620 WDNC NC **Durham** – Applies for license to cover CP, U1 1500/41, new site.
900 WJWL DE **Georgetown** – Applies for license to cover CP, U1 1000/145.
920 WDMC FL **Melbourne** – Granted program test authority for CP, U4 8000/4000, new site.
980 WKLF AL **Clanton** – Applies for license to cover CP, D1 1100, new site.
1490 KTEL WA **Walla Walla** – Applies for license to cover CP, new site.



CPs granted:

- 540 CBMM QC Senneterre – LPRT granted CP to move to 101.7 MHz FM.
 650 CBF-3 QC Level-sur-Quevillon – LPRT granted CP to move to 94.9 MHz FM.
 710 KXMR ND Bismarck – Granted CP to U4 4000/4000, all from existing night site.
 CBF-1 QC Senneterre – LPRT granted CP to move to 95.9 MHz FM.
 860 WTZX TN Sparta – Granted CP to U1 950/10, new site (35-57-16/85-28-37).
 940 WIPR PR San Juan – Granted CP to U4 8000/7000, new site (18-25-36/66-08-09).
 1120 WUST DC Washington – Granted CP to U1 50000/50 (ch 3000), existing site.
 1230 CBMK QC Level-sur-Quevillon – LPRT granted CP to move to 92.7 MHz FM.
 1320 KSDT CA Hemet – Granted CP to U4 550/930, CoL Redlands CA, new site (33-58-02/117-11-16).
 1330 WENA PR Yauco – Granted CP to U4 1500/1500, new site (18-01-16/66-51-52).
 1350 WEGA PR Vega Baja – Granted CP to U4 360/2200, existing site.
 1390 WROA MS Gulfport – Granted CP to U1 900/35, new site (30-25-45/89-01-08).

Applications for CPs filed:

- 1030 WNVR IL Vernon Hills – Applies for U7 25000/150 (ch 8000), from existing transmitter site. Says CoL would change to Chicago IL but this looks like an error in filling out the form; the technical exhibits assume the CoL stays at Vernon Hills. 
 1110 WOMN LA Franklinton – Applies for D4 50000 (ch 14000) on 1100 kHz; has had previous CPs to move to 1100 kHz that expired unbuilt.
 1280 WMXB AL Tuscaloosa – Applies for U1 1000/35, new site (33-11-02/87-34-14); has had previous CP that expired unbuilt.
 1440 WCDL PA Carbondale – Applies to replace tower with a slightly smaller one.

Application for CP dismissed:

- 760 KFMB CA San Diego – Application for U2 5000/10000 withdrawn and dismissed.

SPECIAL TEMPORARY AUTHORITY (STA)

STAs granted:

- 550 WSVB VA Harrisonburg – Granted STA, U1 5000/250 during tower replacement.
 950 KFSA AR Fort Smith – Granted STA, U3 500/500 (night pattern 24 hours); pattern switching problems.
 970 KNIH NV Paradise – Granted STA, U1 1250/125; one tower (of five) has collapsed.
 KTTO WA Spokane – Granted STA, U1 5000/250 or parameters at variance during FM translator diplexing.
 1060 KGFX SD Pierre – Granted STA, parameters at variance, lightning damage.
 1070 KFTI KS Wichita – Granted STA, U1 10000/250; vandalism to lines to one tower.
 1200 WJUA FL Pine Island Center – Granted STA, U3 2200/2200, transmitter problems and Cuba QRM.
 1230 KYQT OR Burns – Granted STA, U1 60/60, temporary 100' longwire at studio site of 43-34-59/119-03-14.
 1360 WIBK IL Watseka – Granted STA, parameters at variance, FM translator diplexing.
 WHBG VA Harrisonburg – Granted STA, U1 500/9 from a different tower in the WSVB-550 than the one they are licensed to diplex from.
 1480 WLMV WI Madison – Granted STA, night parameters at variance during diplexing.
 1570 WQTW PA Latrobe – Granted STA, D1 220, transmission equipment problems.
 1590 WPUL FL South Daytona – Granted STA, U1 250/320, alternate site 29-12-07/81-01-29.
 1700 WRCR NY Ramapo – Granted STA, U1 2500/250 from cell phone tower at 41-06-46/74-05-35 (i.e. in Monsey NY); has lost licensed site.

Applications for STAs received:

- 560 WQAM FL Miami – Applies for STA, using CP power and site (U1 4100/1000).
 760 KCCV KS Overland Park – Applies for STA, parameters at variance during KMBZ-980 diplexing.
 920 KYFR IA Shenandoah – Applies for STA, U3 2500/2500 (night pattern 24 hours); cannot switch between day and night facilities.
 WNJE NJ Trenton – Applies for STA, U1 250/250, pattern problems due to nearby tower.
 980 KMBZ MO Kansas City – Applies for STA, using CP power and site (U2 9000/5000).
 1140 WQBA FL Miami – Applies for STA, U1 12500/2500; repairs to phasing equipment.
 1240 WULA AL Eufaula – Applies for STA, U1 250/250, transmitter problems.

1540 WNWR PA Philadelphia – Applies for STA, operation without antenna monitor.

Application for STA denied:



1010 KXEN MO St. Louis – Application to operate with reduced day power (10 kW) to test its effects on listeners denied; FCC rules do not allow a station to operate temporarily with reduced power (providing less than licensed service, but enjoying protection from QRM to its full licensed facility) for nontechnical, economic reasons.

Extensions to existing STAs granted:

570 WTBN FL Pinellas Park – Granted STA extension, U4 5000/10000, Cuba QRM.
 WSYR NY Syracuse – Granted STA extension, parameters at variance.
 600 WREC TN Memphis – Granted STA extension, parameters at variance.
 750 KOAL UT Price – Granted STA extension, parameters at variance.
 790 WMC TN Memphis – Granted STA extension, parameters at variance or U1 5000/1250.
 860 KTRB CA San Francisco – Granted STA extension, U1 50000/5000 from day site.
 920 KKLS SD Rapid City – Granted STA extension, reduced power (unspecified).
 970 KSYL LA Alexandria – Granted STA extension, night parameters at variance.
 1070 WBKW WV Beckley – Granted STA extension, reduced power (unspecified).
 1160 WVNJ NJ Oakland – Granted STA extension, parameters at variance.
 1190 WPSP FL Royal Palm Beach – Granted STA extension, U4 690/2200, Cuba QRM.
 1230 WDWR FL Pensacola – Granted STA extension, U1 250/250, temporary longwire.
 1260 WSHU CT Westport – Granted STA extension, U1 250/2, temporary longwire.
 1300 WIBR LA Baton Rouge – Granted STA extension, U1 300/11 as in CP.
 1360 WPPA PA Pottsville – Granted STA extension, parameters at variance.
 KWWJ TX Baytown – Granted STA extension, parameters at variance.
 1370 WLLN NC Lillington – Granted STA extension, reduced day power (unspecified).
 1420 KSTN CA Stockton – Granted STA extension, parameters at variance or U1 1250/250.
 1470 KAIR KS Atchison – Granted STA extension, U1 250/250.
 1520 KOKC OK Oklahoma City – Granted STA extension, U1 10000/10000, temporary site.
 1530 WJDM NJ Elizabeth – Granted STA extension, D1 250 from WPAT/WNSW tower.
 1560 KGOW TX Bellaire – Granted STA extension, U3 15000/15000 from night site.
 1590 WFTH VA Richmond – Granted STA extension, reduced tower height.

Applications to extend existing STAs received:

580 WKAQ PR San Juan – Applies to extend STA, U1 4500/4500.
 630 KIDD CA Monterey – Applies to extend STA, U1 300/250, temporary site.
 790 WNIS VA Norfolk – Applies to extend STA, minor parameters at variance.
 WAYY WI Eau Claire – Applies to extend STA, U1 5000/1250.
 910 KECR CA El Cajon – Applies to extend STA, U3 5000/5000, night pattern 24 hours.
 WLTP OH Marietta – Applies to extend STA, U1 5000/9 from day site.
 920 KDHL MN Faribault – Applies to extend STA, reduced power (unspecified).
 940 WINE CT Brookfield – Applies to extend STA, parameters at variance.
 WIPR PR San Juan – Applies to extend STA, temporary site.
 1080 WUFO NY Amherst – Applies to extend STA, D1 1000, WECK-1230 tower.
 1110 WOMN LA Franklinton – Applies to extend STA, D1 170, temporary antenna.
 1120 KLIM CO Limon – Applies to extend STA, D1 10, temporary antenna.
 1130 KSDO CA San Diego – Applies to extend STA, U1 2500/2500, temporary site.
 1160 WOBM NJ Lakewood Township – Applies to extend STA, parameters at variance.
 1170 WQHC AL Hanceville – Applies to extend STA, D10, temporary antenna.
 1250 KKDZ WA Seattle – Applies to extend STA, U1 5000/1250 from day site (day power starts at 0300 ELT after KWSU sign-off).
 1310 WADB NJ Asbury Park – Applies to extend STA, U1 625/250.
 KTCK TX Dallas – Applies to extend STA, parameters at variance.
 1330 WHGM MD Havre de Grace – Applies to extend STA, U1 5000/125.
 WENA PR Yauco – Applies to extend STA, temporary longwire
 1360 WHNR FL Cypress Gardens – Applies to extend STA, U1 1250/625.
 WHCG GA Metter – Applies to extend STA, U1 59/59, temporary longwire.
 1380 WBEL IL South Beloit – Applies to extend STA, U1 5000/1250.
 1410 KMYC CA Marysville – Applies to extend STA, U1 1250/250.
 WPOP CT Hartford – Applies to extend STA, U1 1250/1250.
 WDOV DE Dover – Applies to extend STA, parameters at variance.

1430	WENE	NY	Endicott	– Applies to extend STA, U1 5000/1250.
1450	KIKR	TX	Beaumont	– Applies to extend STA, reduced power (using U1 500/500).
1480	KYOS	CA	Merced	– Applies to extend STA, U1 5000/1250, temporary tower.
	KNTB	WA	Lakewood	– Applies to extend STA, temporary longwire antenna.
1490	WSVM	NC	Valdese	– Applies to extend STA, temporary longwire antenna.
1520	KKZZ	CA	Port Hueneme	– Applies to extend STA, parameters at variance.
	WTRI	MD	Brunswick	– Applies to extend STA, reduced power (1000 to 17000).
1530	KZNX	TX	Creedmoor	– Applies to extend STA, U3 220/220 from night site.
1570	KVAM	CO	Loveland	– Applies to extend STA, D1 90, temporary tower.
1580	KQFN	AZ	Tempe	– Applies to extend STA, D1 10000.
1590	KVTA	CA	Ventura	– Applies to extend STA, parameters at variance.
	WFBR	MD	Glen Burnie	– Applies to extend STA, minor parameters at variance.

SILENT STATIONS

Formerly silent stations informing the FCC that they are back on the air:

1230	KYQT	OR	Burns	– Silent Nov. 15 (2016) (as KBNH), on the air with STA Aug. 7.
1240	KVRC	AR	Arkadelphia	– Silent July 25 (2016), on the air July 25.
1400	WJZN	ME	Augusta	– Silent July 2, on the air July 27.
1450	KEED	OR	Eugene	– Silent June 14 (as KLZS), on the air with new calls Aug. 1.
1460	WATD	MA	Brockton	– Silent Aug. 6 (2016), on the air with STA Aug. 1.
1570	WVOJ	FL	Fernandina Beach	– Silent Jan. 11, on the air with 25% power July 27.
	WLEE	MS	Winona	– Silent Aug. 25 (2016), on the air July 23.
1590	WPUL	FL	South Daytona	– Silent Aug. 22 (2016), on the air with STA Aug. 15.
1600	WMCR	NY	Oneida	– Silent Sept. 2 (2016), on the air July 20.

Stations informing the FCC that they are silent:

1050	WBVG	NY	Baldwinsville	– Silent Aug. 3; technical problems.
1200	WCHB	MI	Taylor	– Silent Aug. 3; new owners doing studio work.
1350	KUSG	GU	Agaña	– Silent July 1; has lost licensed site and will look for a new one.
1380	KDXE	AR	North Little Rock	– Silent July 19; tower repairs.
1450	WCLM	VA	Highland Springs	– Silent July 29; tower repairs.
1500	WQMS	MS	Quitman	– Silent July 19; tower problems.
1530	KVOG	GU	Agaña	– Silent July 1; has lost licensed site and will look for a new one.

COORDINATE CORRECTION

980	KOKA	LA	Shreveport	– CP to correct coordinates to 32-31-34/93-49-19 is on the air.
1230	WSOO	MI	Sault Ste. Marie	– CP to correct coordinates to 46-26-25/84-22-37 is on the air.

NRC AM Log updates

Here are the first updates to your 38th Edition of the *NRC AM Log*. Reflecting a change in this edition of the *Log*, station groups are now denoted as Grp=<name>. We hope this eliminates any confusion that was caused by using the // symbol both for single parallel stations and groups.

590	WAFC	FL	Clewiston	– Slogan to “Classic Hits.”
770	WAIS	OH	Buchtel	– Networks to SRN.
790	WBLO	NC	Thomasville	– Slogan to “Latina 106.9,” drop Group.
820	WWBA	FL	Largo	– Slogan to “NewsTalk.”
830	WEEU	PA	Reading	– Slogan to “The Voice”
890	WAMG	MA	Dedham	– Slogan & Group to Grp=La Mega.
	WKNV	VA	Fairlawn	– Group to Grp=Joy FM Real Music Real Life (ex Grp=Joy 890).
900	WJWL	DE	Georgetown	– Adds // W262BF-100.3. (FCC)
960	WSVU	FL	North Palm Beach	– Format to OLD (ex-AC/EZL) Group to Grp=True Oldies Channel 95.9 & 106.9 (ex: Grp=95.9 The Palm).
970	WRHA	TN	Spring City	– Format to OLD (ex-CLR); slogan to “Cruisin’ Oldies.”
980	WAKV	MI	Otsego	– Networks to USA/LCL.
1000	KSOO	SD	Sioux Falls	– Format to NWS/TLK (ex-C&W); slogans to “K Sioux,” “Information 1000”; networks to A/P/JBo/DR/WW1/RER.
1040	WURN	FL	Boynton Beach	– Slogan to “Actualidad 1040.”
1060	WIXC	FL	Titusville	– Slogans to “The Talk to Me Station,” “AM 1060 News.”
1070	WFLI	TN	Lookout Mountain	– Slogan to “The Legend.”

- 1090 WCAR MI Livonia – Drop networks.
 1120 KTXW TX Manor – Slogans to “The Bridge 101.1 FM & 1120 AM,” adds // K254BL-101.1.
 1130 KXET OR Mount Angel – Slogan to “Slavic Family Radio.”
 1140 KXRB SD Sioux Falls – Format to C&W (ex-NWS/TLK); slogan to “Classic Country 1140,” “Country Leader”; networks to MRN; adds // KXRB-FM-100.1.
 1150 KGDD OR Portland – Slogan to “La Gran D 1150 & 93.5.”
 1230 WSAL IN Logansport – Adds // W235CU-94.9. (FCC)
 KSFX NM Roswell – Format to CLR (ex-OLD); slogan to “The X.”
 1260 WGVM MS Greenville – Format to OLD (ex-CLR); slogan to “Good Time Oldies.”
 1300 WSSG NC Goldsboro – Format to UC:HipHop (ex-NOS); slogan to “92.7 Jamz.”
 1310 WORC MA Worcester – Slogan & Group to Grp=La Mega.
 WDXI TN Jackson – Format to TLK/OLD (ex-BIZ/TLK).
 1320 WENN AL Birmingham – Format to UC:AC (ex-AC/OLD); slogan to “Kiss FM,” adds // WBHK-98.7.
 1330 KVOL LA Lafayette – Slogan to “The Rewind.”
 1340 WHAT PA Philadelphia – Slogan to “El Zol 1340 & 99.9,” adds // W260CZ-99.9, drops // W246AQ-97.1.
 WWPA PA Williamsport – Format to SPT (ex-NOS); networks to ESPN.
 1350 KCAR TX Clarksville – Adds // K257GD-99.3. (FCC)
 1380 WBEL IL South Beloit – Format to OLD (ex-TLK/OLD).
 KUVR NE Holdrege – Slogan to “Continuous Favorites 1380 & 96.9.”
 1390 KHOB NM Hobbs – Format to NOS (ex-SPT); slogan to “Legends 1390,” drop networks.
 WFBL NY Syracuse – Format to OLD (was Silent); drop networks. ([NRC-AM])
 KZGD OR Salem – Slogan to “La Gran D 1390 & 93.5”; adds // K228FN-93.5, delete Group Grp=La Zeta Network.
 1400 WHGB PA Harrisburg – Format to SPT (ex-C&W); slogan to “Sports Radio,” nets to CS/Jr.
 1420 WBEC MA Pittsfield – Adds // W230CP-93.9. (FCC)
 1430 WHAN VA Ashland – Format to AOR (ex-TLK/VAR); slogan to “The Mator,” adds // W275BQ-102.9, drop Grp=WTJU FM
 1440 KELG TX Manor – Adds // K284CQ-104.7. (FCC)
 1470 WMGG FL Egypt Lake – Slogan to “Radio Romantica.”
 1480 WERM AL Mobile – Format to NOS/OLD (ex-NOS).
 1490 KJNT WY Jackson – Adds // K259CP-99.7. (FCC)
 1500 WSMX NC Winston-Salem – Format to GOS (ex-SS:REL); delete slogan; networks to SRN; adds // WSTS-100.9.
 1540 WBNL IN Boonville – Slogan to “Your Hometown Station.”
 1580 KGAF TX Gainesville – Format to AC (ex-OLD).

Group Name Changes

Grp=95.9 The Palm changes to Grp=True Oldies Channel 95.9 & 106.9 – WSVU-960, W295BJ-106.9, W240CI-95.9

Grp=Joy AM changes to Grp=Joy FM Real Music Real Life – WKNV-890, W232CS-94.3, W246CR-97.1

Group Update

Grp=Family Life Radio – Adds W284BQ-104.7 Detroit

Grp=I Am Country – Drops WDVH-101.7 and adds WPLL-106.9 Cross City

Grp=La Zeta Network – Drops KZGD-1390 & K228FN-93.5 Salem

Grp=Pepe – Adds W298CF-107.5 Charlotte

New Groups

Grp=La Mega – WAMG-890, WORC-1310, W235CS-94.9

Grp=Latina Tu Musica – WGSP-FM-102.3, WBLO-790, W295CE-106.9

Deleted Groups

Grp=Pepe

Grp=WTJU FM

Thanks to Shawn Axelrod, Bill Hale, FCC Database. (FCC)

Domestic DX Digest – West

Jim Tedford, 20310 Bothell-Everett Hwy. B4, Bothell WA 98012-8133, Radio_Enthusiast@hotmail.com

For loggings of U.S. and Canadian stations by DXers in Central/Mountain/Pacific time zones

All times are Eastern Local Time (ELT)

REPORTERS

- GH-OK** **Glenn Hauser, Enid, OK.** Mostly DX-398 with internal antenna only; NRD-545 with ALA-330S E-W inside or N/S random wire; IC-R75 with E-W longwire; also available: PL-880 with internal or random wire; Nissan stock car radio when specified. Glenn's complete reports, with extensive commentary, are originally published in *DX Listening Digest*. <http://www.worldofradio.com/dxldmid.html>
- JR-OK** **John Reed, Shawnee, OK.** NRD-525, Brigantina+AR7030 Homebrew tuned ferrite loop, Clifton Labs active whip, Quantum phaser.
- JW-CO** **John Wilkins, Wheat Ridge, CO.** Drake R-8, 4-foot box loop.
- NJ-AZ** **Nancy Johnson, Mesa, AZ** Drake R8B, Wellbrook ALA1530LNP
- RD-NE** **Rick Dau, South Omaha, NE.** Kenwood R-5000 + Grundig AN-200
- SMA-MB** **Shawn M. Axelrod, VE4DX1SMA, VEPC4SWL, Winnipeg, MB.** Icom ICR70 / Drake R8; 3' un-amplified box loop / Quantum QX LOOP v2.0 / 155' U-shaped outdoor wire / 100' indoor wire run around the basement walls / MFJ 1026 phasing unit.

STATION NEWS

- 1140 KXRB SD** **Sioux Falls** – 8/7 0833 – Travis Tritt's C&W song "Country Club," then a "KXRB" ID. Learned that the frequency swap with KSOO took place at 0700 ELT that morning, with KSOO's CLs and format moving down to 1000. Big gain for KXRB's longtime listeners, but big loss for those of KSOO, since the 1140 signal gets out much better than does the one on 1000. **(RD-NE)** 8/8 2228 – Fair signals with classic country music and several KXRB ID's. Now on this frequency from old 1000. Swap frequency and format with KSOO. **NEW! (SMA-MB)**
- 1150 KCKY AZ** **Coolidge** – 8/13 – We noted that they were off the air. Apparently their license was cancelled 6/29 for not paying debts. They are definitely off! **(NJ-AZ)**

DX LOGS

- 790 KFPT CA** **Clovis** – 8/15 0659 – Man with legal ID at 0659:54: "Your home of Fresno State ..??. 790 ESPN The Deuce KFPT Clovis" and into ESPN program at ToH. Fair at best, barely above the others. **(JW-CO)**
- 790 KABC CA** **Los Angeles** – 7/27 0745 – Viagra ad, followed by a program note (...on Talk Radio 790 KABC"); 0747 back to "NBC4 Today in LA," a morning wakeup show originating on KNBC Channel 4. Generally fair and actually on top for a few minutes. **(JW-CO)**
- 790 KSPD ID** **Boise** – 7/27 0729 – Program note ("...right here on Solid Talk 790 KSPD"); into program "Family Talk" at 0730. Fair but soon faded. **(JW-CO)**
- 790 KXXX KS** **Colby** – 8/14 0859 – Ad for Farmers & Merchants Bank (in business for 130 years); guy with LID at 0859:55: "Bringing you the Country - 790 K-Triple X is KXXX Colby, Kansas, USA"; Fox news was up next. Fair signal and alone on the frequency. **(JW-CO)**
- 790 KGHL MT** **Billings** – 8/8 0844 – C&W music, "The Mighty 7-90" slogans. Fair/good but fadey and competing with others. **(JW-CO)**
- 790 KBET NV** **Winchester** – 8/16 0759 – Call letter ID only punching thru the QRM; nothing else distinguishable (a reversal of Murphy's Law). A new one here, NV #26. **(JW-CO)**
- 790 KBME TX** **Houston** – 7/31 0158 – "Sports Talk 790" slogans and local promos ("Home of the Rockets and Astros," "iHeart Radio," etc.); went into Fox Sports at ToH with no ID heard other than "Sports Talk 790." **(JW-CO)**
- 870 KFJZ TX** **Fort Worth** – 7/26 1510 – Hindi and English language talk with news. **(JR-OK)**
- 880 KRVN NE** **Lexington** – 8/3 0713 – Woman with news about infrastructure funding, on the "Rural Radio Network," 0715 website ruralradio.com and discuss Nebraska corn crop, on "Nebraska Rural Radio." I thought they were saying "world" but website reminds me it's really "Rural"! And any qualified Nebraskan may join the NRRA for \$25 and get a certificate. Other stations in the group are

KNEB-960 and KTIC-840. Anyhow, the world beyond its daytime coverage area will be trying to hear KRVN around 1400 August 21. **(GH-OK)**

- 930 KAPR AZ **Douglas** – 7/18 0859 – I heard Spanish talk, ID at 0900 by very Spanish accented man with quick “KAPR, Do-glas Arizona.” No sign of KAFF which is usually quite strong on 930. I was surprised to hear KAPR call as I thought they had a talk format, not Spanish. New for me. **(NJ-AZ)**
- 950 KJRG KS **Newton** – 8/16 1400 – Religious talk, call ID. Weak daytime station, only heard with the loop antenna, not with whip. **(JR-OK)**
- 960 KOVO UT **Provo** – 7/20 0759 – Legal ID at 0759:48 by man: “This is your home of Cougar Sports weekdays from 3 to 7, you're listening to KOVO Provo, Utah County's Sports Station, ESPN 960”; Mike and Mike followed. Fair signal and alone on the frequency. **(JW-CO)**
- 980 KSVC UT **Richfield** – 7/27 0907 – Call letter ID and a mention of 100.5 FM; detailed state and local news followed. Generally fair and on top at times. **(JW-CO)**
- 1030 KBUF KS **Holcomb** – 8/3 2200 – Call ID, news. Weak with thunderstorm static noise. **(JR-OK)**
- 1050 KSIS MO **Sedalia** – 7/16 2141 – Start of interview in English with author of a book about guns, no sign of XEG yet but CCI from another; 2142 cut to ad for MO State Fair in Sedalia, and 2143 signal drops off. Official FCC sunset time for KSIS is in fact 2145 in June and July. KSIS online schedule confirms 8 p.m. CT Sundays is “Armed America Radio.” **(GH-OK)**
- 1150 KNED OK **McAlester** – 8/13 1400 – Sunday programming with preaching, then into Motor Racing Network with the Michigan 400 race. **(JR-OK)**
- 1150 KHRO TX **El Paso** – 8/14 0859 – Strong signal ending EWTN programming. 0900 ID “This is KHRO AM El Paso live from the Catholic Diocese of El Paso. This is The Bridge 11-50 AM.” Very strong and dominating 1150. New station for me. **(NJ-AZ)**
- 1180 KLPF TX **Midland** – 7/24 0759 – Last minute of a religious program which was parallel to local KRCN-1060; legal ID voiced by a local bishop at 0759:50: “...KLPF Midland-Odessa”; 0800 into daily Mass, no longer parallel to KRCN but was parallel to EWTN-TV. Fair signal. **(JW-CO)**
- 1220 KTLV OK **Midwest City** – 7/31 1755 – UC gospel preaching. Call ID and “Road to Victory.” Although close, first time to hear this one. **(JR-OK)**
- 1270 KFLC TX **Benbrook** – 7/16 2139 – IBOC noise is very evident QRMing 1260 and 1280 stations, therefore emanating from something on 1270. No doubt KFLC, as still listed only IBOC active on 1270, and on 1270 itself Spanish is atop sports in English from OK. **(GH-OK)**
- 1390 KHOB NM **Hobbs** – 7/30 0029 – Loud with oldies until 0036 I when finally heard ID “So many nostalgic classics, KHOB 1390 AM Hobbs” into Beatles song. No KENN, KHOB must have been on daytime power since the signal was so strong. John heard many “Legends 1390 KHOB” slogans before he called me into our DX room. New catch for me. **(NJ-AZ)**
- 1460 KBRZ TX **Missouri City** – 7/23 2132 – Woman speaking calmly in Asian language really stands out – not Mandarin, but seems tonal, maybe Cantonese, Vietnamese, Cambodian or even Myanmari. At the moment atop some CCI in Spanish, maybe still KZUE in OK. Loops about 170/350 degrees on the DX-398, so I bet it is something from the multi-ethnic Houston market. At 2140, language disappears, replaced by Home Depot, Lowe’s ads in English, then “Sunday Night Baseball on ESPN-Radio at Wrigley Field” (likely KXPN Kearney NE). Sunset for KBRZ is 2130 in July, so a little late. It seems I had not logged KBRZ since August and February 2012, also a bit iffy. Missouri City is on the SW corner of Houston beyond Loop 8. **(GH-OK)**
- 1480 KHQN UT **Spanish Fork** – 7/17 0858 – Heard with Hari Krishna format, ID at 0900 “KHQN Spanish Fork” and then back to Hari Krishna. Very strong with KHPX off the air. New logging. **(NJ-AZ)**
- 1520 KYND TX **Cypress** – 7/21 0820 – An hour after LSR here, I start some MW bandscanning, where skywave has not quite faded out yet on the top end. KOKC talk from OKC has almost equal signal making slow SAH of 24/minute = 0.4 Hz, and inseparable by DF, so obviously KYND. It’s playing hymns in English, with a brief unID announcement between them. **(GH-OK)**



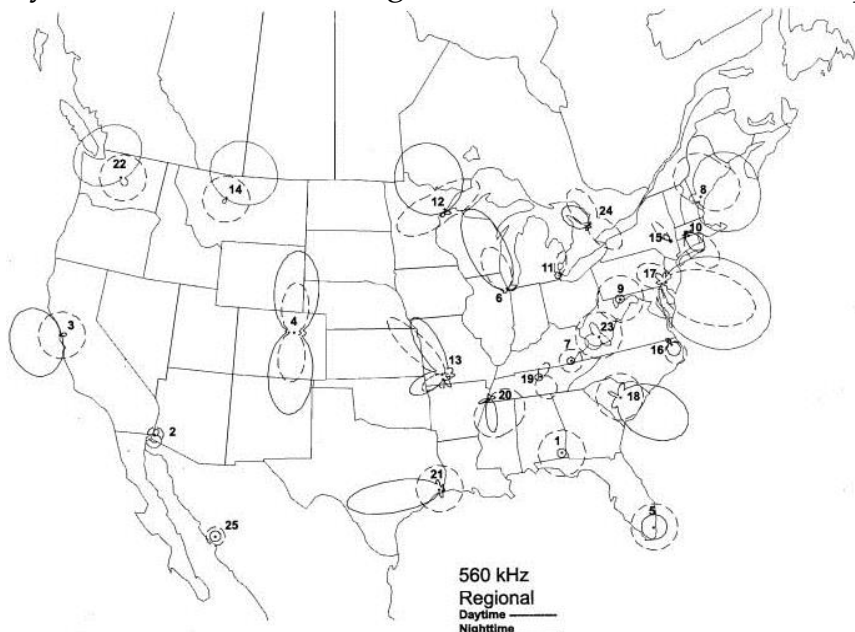
KHQN 1480 AM
SOUNDS OF TRANSCENDENTS

- 1540 KGBC TX Galveston** – 7/212 0823 – Since I've just heard KYND 1520, time to look for KGBC in Galveston, and there it is with a live time check between songs for "23 past the hour on Galveston's own KGBC." How nice that it is once again Galveston's rather than China's own (KGBC and KYND both used to relay China Radio International). This has a 72/minute SAH = 1.2 Hz, perhaps with remnant of KXEL if not something closer, and obviously is back almost on-frequency (last year it was way off plus making an audible tell-tale het). At 0827: a string of about a dozen people getting happy-birthday wishes; and one may apply to be included via <http://www.kgbcradio.com> -- do you have to prove you're local? Celebrating un-birthdays would be less risky for identity theft. By now some SS CCI is growing; at first I thought I heard San Antonio mentioned, which would be KEDA, but then definitely ESPN-Deportes Radio, i.e. KZMP. Due to directionality, it's not unusual for 2.5 kW KGBC to overcome twice-as-close 32 kW KZMP in The MetroPlex (**GH-OK**)
- 1550 KUAZ AZ Tucson** – 8/3 0941 – "It's 6:41, you're listening to Morning Edition on NPR 89.1," a local version of the program with traffic reports, MST time checks, etc.; legal ID at 0959:50: "This is 1550 KUAZ 89.1 KUAZ Tucson, a broadcast service of the University of Arizona," then back to Morning Edition. Good peaks and on top with local KKCL off the air. (**JW-CO**)
- 1550 KDCC KS Dodge City** – 8/6 0158 – Ads, Fox Sports program notes; gal with LID at 0159:54: "Hey guys, you're listening to The Sports Hound 1550 AM KDCC Dodge City, Kansas," with barking dog in background (the Sports Hound himself, no doubt); Fox News ensued at 0200. Fair peaks with fading and light QRM with local KKCL off the air. (**JW-CO**)
- 1550 KQNM NM Albuquerque** – 8/5 0755 – EWTN and Immaculate Heart Radio programming notes and promos; simple "KQNM Albuquerque" legal ID at ToH and into daily Mass and First Saturday Devotion. Good peaks, as might be expected - 7 from a Daytimer running full 10 kW power way before local sunrise. (**JW-CO**)
- 1550 KMRI UT West Valley City** – 8/3 0900 – Out of a Mexican tune with a partially readable non-ID: "Esto es el unico...joven de la radio...La Raza 107.1" and back to music. Fair/good in KUAZ null with local KKCL off the air. (**JW-CO**)
- 1690 KDMT CO Arvada** – 7/21 0830 – "Money Talk 1690" and moneytalk1690.com ID from KDMT. Note the word Denver is not included in the URL. Remnant skywave yet from the NW more than an hour after SR here. KDMT should have been bumped up from 1 kW night to day power 10 kW from its FCC-official July sunrise of 0745. (**GH-OK**)

Thanks for all your contributions. See you next time. (**JDT-WA**)

NRC Antenna Pattern Book, 7th Edition

The 7th Edition of the *NRC Antenna Pattern Book* is now available. This all new edition prepared by NRC'er Paul Swearingen is an all-inclusive book of patterns for both Day and Night operation of stations in the USA, Canada and selected foreign stations. The data for the book comes from the 34th Edition of the *AM Radio Log* and NRC'er John Callerman's comprehensive Mexican station listing.



The book comes shrink wrapped in 8½ by 11 three hole punch format for placement in your own three ring binder. There are 240 pages and the book has maps covering 530 through 1700 kHz depicting the lower USA, Canada and Mexico. Hawaii and Alaska are shown on separate maps at the of the book.

Price/ordering info: Same as for the *NRC AM Log* (see page 1). Colorado residents, please add 3.5% sales tax.

Domestic DX Digest – East

Mike Brooker, 99 Wychrest Avenue, Toronto ON M6G 3X8 (Canada), patria1818@yahoo.com

For loggings of U.S. and Canadian stations by DXers in Eastern/Atlantic time zones

All times are Eastern Local Time (ELT)

REPORTERS

- AC-NY** **Anthony Capobianco, Sea Cliff** – R390A, Kiwa loop.
BC-NH **Bruce Conti, Nashua** – Excalibur SDR, MWDX-5, variable termination SuperLoop antennas 50 x 60-ft at 60° northeast and 50 x 75-ft at 180° south.
KK-VA **Kraig Krist, Manassas** – Winradio G33DDC SDR, Wellbrook ALA-1530S+ Imperium Loop
TLK-FL **Terry Krueger, Clearwater** – NRD-535, IC-R75, roof dipole, active loop
PS-ON **Paul Snider, Welland** – ICOM R75, Pixel RF Pro-1B loop, MFJ-1020C tuner, Elad FDM-S2, Pixel Pro 1B loop.
JW-PA **Jim Weber, Lancaster/Oyster Point** – Grundig S350
MKB-ON **Mike Brooker, Toronto** – Grundig YB-400PE, Sony SRF-39FP, C Crane CC Skywave, Panasonic RF-2200.

Follow me on Twitter! @patria1818 DX-related tweets will be hash-tagged #MWDX.

Friend me on Facebook! www.facebook.com/keval.mike


UNID

- 910 unID** -- – 7/30 0550 – Someone up for a few seconds, going out of Red Eye Radio into network spots. Maybe WJCW, Johnson City, TN? Pointed N/S. Tight WTWD null, and Radio Metropolitana co-channel. **(TLK-FL)**
1050 unID -- – 7/28 0649 – Someone with Christian quack male talk, mentioned "... Airport Road... 32..." at the end, for money I suppose, and signal lost in all the co-channel. Presumed either WFAM, Augusta, GA (listed with block programming "Love On the Cross" 6:30-7:00) or WROS, Jacksonville, FL. **(TLK-FL)**

LOGGINGS

- 560 KLVI TX** **Beaumont** – 7/28 0540 – "America in the Morning" feed into commercials, parallel way delayed station stream. Some WQAM co-channel. **(TLK-FL)**
710 WDSM WI **Superior** – 8/16 2328 – Savage Nation, national ads, ID at 2333 as "710 AM, 98.1 FM WDSM." Fair at times to very poor with WOR and Radio Rebelde. **(PS-ON)**
720 WGN IL **Chicago** – 8/6 0458 – Good; "Chicago's memorable music is back on the radio, at 87.7 FM... First on your dial at 87.7 FM, MeTV FM." This is WRME-LP, a low power TV station broadcasting oldies music on 87.75 MHz, the carrier frequency for analog TV channel 6 audio. **(BC-NH)** *Is this FM operation legal, or is a Chicago-area pirate station brazen enough to advertise on WGN? Mike.*
910 WALT MS **Meridian** – 7/30 0630 – Up for a few seconds with male "... online... and 102 point 1..." and pointing NNW, and they show as simulcasting the WALT-FM, so a tentative. WALT calls were used for many years in Tampa until 1970, then assigned to the current 1010 kHz WHFS. Tight WTWD null, and Radio Metropolitana co-channel. **(TLK-FL)**
WBZU PA **Scranton** – 8/8 2110 – Dave Ramsay Show, heard clear "...WILK" ID at 2218. Poor to very poor in station mix with in-state rival WSBA. **(PS-ON)**
920 WDMC FL **Melbourne** – 7/30 0658 – Female with "Thank you for listening to EWTN Radio..." into song by Run-D.M.C! **(TLK-FL)**
930 WDLX NC **Washington** – 7/30 0423 – Slogans "Sports Authority for Eastern Carolina" and "Pirate Radio on 1250 and 930." Also noted promo for Baltimore Orioles radio network. **(JW-PA)** *"Pirate Radio" slogan refers to East Carolina University Pirates, not an unlicensed operation. Mike*
WSEV TN **Sevierville** – 7/23 0448 – Still with the non-stop eclectic music format (as confirmed the one I'd been hearing from Florida, when vacationing in NC/TN at the end of May). Presumably continues with no commercials or announcements save for the canned top of hour ID. "Sister Golden Hair" by America, "Do You Really Want To Hurt Me" by Culture Club, "Secret

Garden" by Bruce Springsteen and "Tom" by Natalie Imbruglia. Too weak on a fade around 0500 for any ID to make it. **(TLK-FL)**

- WLLL VA **Lynchburg** – 7/25 0425 – Suddenly blasting in with tire company ad and "WLLL AM 930" ID. Quickly faded into the mix but doubt power was 42 watts. **(JW-PA)**
- 1010 WTZA GA **Atlanta** – 7/28 0638 – Spanish Christian vocal, male "Vida 1010 AM" slogan into another vocal. Tight WHFS semi-null. **(TLK-FL)**
- 1070 WAPI AL **Birmingham** – 7/29 0522 – National weather on Red Eye Radio. Co-channel Radio Guamá and a religious talker, probably WNVY. **(TLK-FL)**
- 1090 KMXA CO **Aurora** – 8/2 2253 – Noted Spanish language music under WBAL, no ToH ID heard, "Super Estrella" slogan at 2315, talk by female in SS, another "Estrella" mention at 2321, "Cruz De Navajas" by Mecano (thanks Shazam app), "La Super Estrella" slogan at 2326. Poor to very poor, sometimes over WBAL. Must be on day power. // to Tune In stream. **(PS-ON)**
- WCAR MI **Livonia** – 8/7 2225 – Sports talk under WBAL and at times WHGG, heard Yahoo Sports mention at TOH (although WCAR switched to SB Nation), possible ads, SB Sports Nation Radio mention at 2313. Poor at times to very, very poor. **(PS-ON)**
- 1150 WCRK TN **Morristown** – 7/13 0512 – In multi-station mix (WNLN, WBAG and several UNIDs: Fox Sports, C&W, songs from the 80's and Spanish singing) with male "You're listening to the greatest hits of all time... 105.7 WCRK FM" ID. **(KK-VA)**
- 1160 WWQT NC **Tryon** – 7/13 0500 – In multi-station mix (WYDU, WODY, WOBN, WMET, UNID ESPN and SS stations) with "Living life together. We are the 'Life FM'" station promo. Nice surprise and new station for me. **(KK-VA)**
- 1210 KGYN OK **Guymon** – 8/12 0201 – Presumed under WPHT; news from Townhall dot com. Initially made a leap of faith toward KPRZ San Diego, a Salem station. Per tip from Wayne Heinen, KGYN has been heard with SRN and Townhall hourly news, often starting late, minutes past the hour. Listening to KPRZ "K-Praise" online, apparently KPRZ doesn't run network news on the hour, instead filling time with short programs such as Breakpoint and Focus on the Family Minute. With no other known Salem affiliated stations on 1210, KGYN is the logical conclusion. **(BC-NH)**
- 
- 1220 WOTS FL **Kissimmee** – 7/23 0435 – Poor with Haitian kreyol religious talk, parallel station stream. This is otherwise Spanish, branded "La Fantástica" slogan, 1000/110 watts. **(TLK-FL)**
- WGNV NY **Newburgh** – 7/21 0458 – In WHKW/WFAX/WDYT mix with "24 7 365 the best country, 'Fox Country' 1220 and 105.3 3 WGNV" ID and another "Fox Country" station promo at 0503. Nice surprise and new station for me as 1220 kHz is always difficult here due to either WHKW or WFAX. **(KK-VA)**
- WDYT NC **Kings Mountain** – 7/21 0459 – In WHKW/WFAX/WGNV mix with female in Spanish "Esta es," then female "WDYT 12-20 AM... Charlotte" ID. Nice surprise and new station for me. **(KK-VA)**
- 1230 WFAY NC **Fayetteville** – 7/21 0458 – In multi-station mix (WJOI, WCBT, WFBA and UNID gospel) with male "ESPN Fayetteville" slogan. **(KK-VA)**
- 1240 WGVA NY **Geneva** – 7/21 0538 – In WDNE/WTPS mix with "WGVA weather /now" local weather. **(KK-VA)**
- WDNE WV **Elkins** – 8/7 0029 – Cover version of "Feelings" song followed by "12-40 WDNE" ID into violin instrumental. **(AC-NY)**
- 1250 WGAM NH **Manchester** – 7/23 2254 – "Crying In The Rain" by Carole King, "WGAM..." jingle at 2257, "A Natural Woman (You Make Me Feel Like)" by Aretha Franklin, possible ToH ID, "Rocket Man" by Elton John. Very poor under CJYE in station mix with probably WPGP and Fox Sports station, which could be WGL in Fort Wayne, IN. **(PS-ON)**
- WPGP PA **Pittsburgh** – 7/26 0516 – In WDVA/WTMA/WGHB mix with "AM 12-50 'The Answer'" slogan. At this point I'm unsure if I'm hearing WPGP or WRCW. However, I then hear an auto dealer ad with a 412 Pittsburgh area code, so this is WPGP. Nice surprise and new station for me as I've heard "AM 12-50 The Answer" in the past on 1250 kHz, but I was unable to determine and ID. **(KK-VA)**

- 1270 WQTT OH **Marysville** – 7/26 0500 – In multi-station mix (WTJZ, WCBC, WMPM and UNID CBS Sports) with “The true oldies station 96.7 and 12-70 WQTT Marysville” ToH ID. **(KK-VA)**
- 1300 WOOD MI **Grand Rapids** – 8/5 0700 – Over all comers with “the home of Detroit Tigers baseball, news radio 1300 WOOD” into local news. Calls said as “wood,” not spelled out. **(MKB-ON)**
- 1350 WHWH NJ **Princeton** – 8/3 2342 – Slower vocal and jazz instrumental music including version of “When Christ Was Born,” “Sweet Love” by Anita Baker, very fast but clear ToH ID: “WHWH Princeton, New Jersey.” Was not expecting that ID as it doesn't fit the Spanish/Mexican format listed in the NRC AM Radio Log. Fair at times over WARF to very poor. **(PS-ON)**
- 1490 WCDO NY **Sidney** – 7/31 2344 – Barely caught the end of a song and “...Tri County Heartbeat WCDO” ID before losing to the mess. Very poor in station mix. **(PS-ON)**
- WNDA PA **Wellsboro** – 8/10 2320 – Rock oldies heard in the jumble, clear ID for their FM // at 2324: “WOGA in Tioga,” “Turn Me Loose” by Loverboy, “You're whooping it up with WOGA” at 2329 into “My Girl” by The Temptations. Fair occasionally to very poor in station mix. **(PS-ON)**
- 1600 WAAM MI **Ann Arbor** – 7/24 0606 – Over WWRL's Bollywood songs with local news, “Traffic on WAAM Talk 1600” into local traffic. Call letters were said as a word (i.e. “waam”) rather than spelled out. **(MKB-ON)**
- 1630 KKGM TX **Fort Worth** – 7/29 0543 – God praise vocals, female canned “kkgmam.com (then male) KKGM 1630 AM” ID. **(TLK-FL)**
- 1700 WEUP AL **Huntsville** – 7/28 0536 – Urban Gospel vocals. Fair under WJCC. **(TLK-FL)**

Unreported Domestic Stations

One new station – WOTS-1220 – was reported to DDXD this issue for the first time since at least 1999-2000 (Volume 67). So now there are only 413 currently licensed stations in the United States and Canada that haven't been reported in DDXD during this period. If you can report one next issue, let's get the number down even further before Volume 84 comes to a close.

From the *DX News* archives

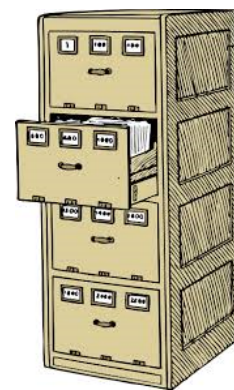
Compiled by Ron Schiller.

75 Years Ago – From the August 22, 1942 issue of *DX News*: Lefty Cooper (NY), Musings Editor for 25+ years (Musings often ran a dozen or more pages), vacationed near Kingston, NY & logged CMCH-1490 & CMKW-1000 new Cubans, on his 6-tube Zenith portable. Indiana's Bob Brown promised to bring a 'suitcase full' of book-mounted veries to the NRC Convention. Frank Coryell (OH) lamented how “positively disgusting” summer reception was – he could only now hear KFI-640 CA after 3 AM!

50 Years Ago – From the July 15, 1967 issue of *DX News*: Convention to be held in Eugene, OR hosted by Bart Cronin. A Musings Column reminder said to cut out sending any info on SW, TV or FM! At various times, all 3 had columns in *DX News*! Jerry Starr (OH) reported a nice verie letter from super catch KTKN-930 AK. Sweden's Lars Ryden reports no DX because of the Midnight Sun! Robert Feulner (IL) cited the NAB Engineering Handbook's claim that CBK-540 (SK) has the largest ground wave coverage in NA! Highest ground conductivity in NDak & the Canadian Prairie Provinces; lowest on New York's Long Island per NAB.

25 Years Ago – From the August 31, 1992 issue of *DX News*: Jim Renfrew's (NYS) IDXD listed Mark Connelly (MA) logs of Vatican-1530/1611 & St Pierre-1375, among sparse summer DX. Ben Dangerfield (PA) traveled to Morocco & southern Spain, hearing Gibraltar-1458 & 1566-Malta. Tony Fitzherbert (CT) was the “Formats” editor. Jack Woods (OR) penned “For Beginners” deciphering ‘the decibel’ & ‘logarithms.’ (Wonder what the Advanced Course offered?). Dallas Lankford dissected the NDR-525 AGC Receiver in depth.

10 Years Ago – From the August 13, 2007 issue of *DX News*: IBOC dominated the DX chatter with pests from coast-to-coast employing it. Dale Park (HI) heard 4QR, Queensland, AU on his Honda Car Radio! Frank Aden to host the 2007 Convention in Boise, ID. Andy Ooms reviewed a new book about radio persona in dictionary form, from the 20s to the 80s, titled “Narrators, News Junkies.....in the Jargon of the Aural Ether....”.



International DX Digest

Bruce Conti, 46 Ridgefield Drive, Nashua NH 03062-1174, contiba@gmail.com

For loggings of outside the U.S. and Canada

All times are Universal Coordinated Time (UTC)

TRANS-ATLANTIC DX

- 549 **ALGERIA** *Jil FM*, Les Trembles AUG 15 0400 – Good; nice ID/promo string beginning with *Jil FM* ID, time marker with more *Jil FM* ID's, then a montage with yet more *Jil FM* ID's into contemporary music. [Conti-NH]
- 774.16 **EGYPT** *ERTU Abis* AUG 8 0100 – Poor; chronic high drifter observed at 774.162 kHz above the cluster of 774 signals, also observed by Mauno Ritola in the mwoffsets group. [Conti-NH]
- 917 **NIGERIA** *R.Gotel*, Yola AUG 12 0400 – Solid s5 signal, enough to observe over the noise floor on the SDR spectrum analyzer but not enough for audio. [Conti-NH]
- 1044 **SPAIN** *SER San Sebastian//Valladolid* AUG 15 0300 – Good; discussion continuing through time pips marking the hour, parallel a weak 1116 kHz. [Conti-NH]
- 1089 **UNITED KINGDOM** *TalkSport* synchros AUG 14 0258 – Fair; presenter mentions "extra time" into *TalkSport* promo. [Conti-NH]
- 1152 **ROMANIA** *R.România Actualitati*, Cluj AUG 14 0300 – Fair; time marker and news intro music, parallel 1422 kHz. [Conti-NH]
- 1152 **SPAIN** *RNE5* synchros AUG 15 0300 – Fair; "Radio Nacional de España, servicios informativos," and news parallel 855 and 1107 kHz. [Conti-NH]
- 1215 **UNITED KINGDOM** *Absolute Radio* synchros AUG 13 0358 – Fair; news by a British-accented woman up to the hour, items including demonstrations in Charlottesville and World Athletics Championship in London. Surprised to hear news instead of the usual ad string and music on the hour. AUG 14 0301 – Fair; end of news update, "From Sky News..." AUG 15 0400 – Good; "Online, on mobile, and on digital radio, where real music matters, this is Absolute Radio," into news, "The main stories this hour..." [Conti-NH]
- 1287 **SPAIN** *SER Burgos//Lleida//Lugo* AUG 6 0500 – Poor; time marker, *SER* fanfare, news by woman in Spanish, parallel 1602 kHz. [Conti-NH]
- 1305 **SPAIN** *RNE5* synchros AUG 6 0500 – Poor; time marker and checks, *RNE* fanfare, "Radio Nacional de España..." into news, parallel 1503 kHz. [Conti-NH]
- 1386 **LITHUANIA** *R.Baltic Waves*, Viesintos AUG 13 0158 – Briefly good signal at tune-in, then faded out; woman in Russian. [Conti-NH]
- 1413 **MOLDOVA** *Vesti FM*, Grigoriopol AUG 6 0159 – Fair; man in Russian mentions programa, then time pips into news/talk. [Conti-NH]
- 1422 **ROMANIA** *R.Romania Actualitati*, Olanesti AUG 14 0300 – Poor through Algeria; familiar distinctive news intro music parallel 1152 kHz. Strangely no sign of 855 and 1179 kHz. [Conti-NH]
- 1503 **IRAN** *IRIB R.Iran*, Bushehr AUG 14 0300 – Good; presumed Iran with Koran through the hour. [Conti-NH]
- 1503 **SPAIN** *RNE5* La Línea de Concepción//Piñeira AUG 6 0500 – Fair; double time pips into echoey news indicating reception of both la Línea de Concepción and Piñeira. [Conti-NH]
- 1512 **SAUDI ARABIA** *SBC R.Quran*, Jeddah AUG 6 0200 – Good; Koran through the hour. [Conti-NH]
- 1530 **SAO TOME E PRINCIPE** *VOA Pinheira* JUL 30 0258 – Under WCKY and WVBF; Yankee Doodle sign on. AUG 14 0258 – Over/under WCKY; "This is the Voice of America, Washington DC, signing on," and Yankee Doodle. [Conti-NH]
- 1602 **SPAIN** *SER* synchros AUG 18 0500 – Poor with synchro echo; time marker and theme music into news in Spanish. [Conti-NH]



PAN-AMERICAN DX

- 530 **CUBA** *R.Rebelde*, Caribe//Guantánamo-Antiguo JUL 26 0900 – Rebelde ID; well over *R.Enciclopedia*. [Connelly-MA]
- 540 **CUBA** *R.Rebelde*, Maisí-Santa Rita//Sancti Spíritus JUL 26 0900 – "Rebelde, la Habana" net ID; just a bit under WFLF. [Connelly-MA]
- 540 **DOMINICAN REPUBLIC** *HICM Radio ABC*, Santo Domingo AUG 2 0059 – *Radio ABC* ID; slightly over jumble with Rebelde, WFLF. [Connelly-MA]
- 540 **MEXICO** *XETX La Ranchera de Paquimé*, Nuevo Casas Grandes, Chih. JUL 24 1118 – Choral anthem at this odd time, followed by full ID at 1122, giving AM and FM frequencies

- (540 and 90.5) and mentioning 25000 watts (presumably for the FM); also gave usual address of Jesus Urueta 502 in Zona Centro, this was followed by a long poetic sort of prayer; finally back to music at 1128, interspersed with the usual "La Ranchera de Paquimé" slogans. [Wilkins-CO] AUG 3 1055 – Choral national anthem already playing from west/southwest, then at 1058 as expected XETX *La Ranchera de Paquimé* sign-on full ID along with 90.5 FM, street address, Grupo BM Radio. [Hauser-OK]
- 540 **MEXICO** XEWA *Los 40*, San Luis Potosí, SLP AUG 3 1058 – Having just heard XETX sign on, now there is another Mexican national anthem in its null toward the south/southeast, and 1100 ID as Los Cuarenta. At this angle I am also getting a low het, but no time to pin it down, suspected Nicaragua where Managua sunrise is not until 1132 vs 1140 here. [Hauser-OK]
- 550 **PUERTO RICO** WPAB Ponce AUG 1 0300 – Ponce mentions in talk; through jumble. [Connelly-MA]
- 560 **CUBA** *R.Rebelde*, Ciego de Avila JUL 22 0400 – Vocal parallel 600; mixed with WGAN. Cuban anthem atop at 0401 UTC. [Connelly-MA]
- 580 **PUERTO RICO** WKAQ San Juan JUL 22 0401 – ID, "WKAQ cinco ochenta San Juan" and affiliates list; over WTAG. [Connelly-MA]
- 600 **PUERTO RICO** WYEL Mayagüez AUG 2 0100 – Affiliates list parallel 580 WKAQ; over Cuba, WICC, others. [Connelly-MA]
- 610 **MEXICO** unID AUG 12 1129 – Choral national anthem, loops about southwest, fade for ID at 1130 UTC. More and more XE's are playing anthem at hour bottoms for some reason. Most likely XEBX Sabinas, Coahuila, but would welcome further XESAC Saltillo, or XEEL Zacatecas. Also often heard is XEGS Guasave, Sinaloa, which is partly parallel 650 XETNT. [Hauser-OK]
- 630 **PUERTO RICO** WUNO San Juan JUL 27 0030 – ID, "Radio Uno Seis Treinte"; under WPRO. [Connelly-MA]
- 650 **MEXICO** XETNT *Radio 65*, Los Mochis, Sin. JUL 23 1120 – Mexican music, the major lowband signal holding up as Enid sunrise 1131 is nigh. 1128 full ID as Radio 65, Radio Viva, noticias Altavoz.com, and into choral national anthem at this odd time. AUG 12 1131 – Full ID's, maybe sign-ons for *Radio 65*, XETNT, and XHTNT, 106.5, Los Mochis, Sinaloa; 1133 into 'Rincón Norteña' music. [Hauser-OK]
- 660 **MEXICO** XEEY *La Kaliente*, Aguascalientes, Ags. JUL 28 0954 – Male canned ID with mention of 102.9 FM (simulcast), into Mexi tune. No XECPR yet. [Krueger-FL] AUG 3 1103 – Choral national anthem from south/southwest, 1105 into music but interjecting "La Kaliente 102.9." [Hauser-OK]
- 660 **MEXICO** XEDTL *R.Ciudadana*, México, DF AUG 12 1105 – After choral national anthem, XEDTL sign-on, Radio Ciudadana of IMER, Ciudad de México, also on an HD2 of some FM frequency. XEEY was already on and interfering. [Hauser-OK]
- 700 **COLOMBIA** HJCX, *W Radio*, Cali JUL 26 0901 – *W Radio* net ID; mixed with WLW. [Connelly-MA]
- 710 **MEXICO** XEDP *La Ranchera de Cuauhtémoc*, Cd. Cuauhtémoc, Chih. AUG 3 1106 – Bit of "Ode to Joy" theme, or rather whatever hymn has stolen its tune, and sermon in Spanish about el muro de Jerusalén. Voice sounds like same guy I frequently hear a few minutes later in bajoalemán. Not on the off-frequency transmitter at the moment. Maybe he appreciates Beethoven. [Hauser-OK]
- 720 **COLOMBIA** HJAN *Emisoras Unidas*, Barranquilla JUL 29 0059 – Fair; carrier off in the middle of the national anthem. [Conti-NH]
- 720 **DOMINICAN REPUBLIC** *R.Norte*, Santiago de los Caballeros AUG 2 0100 – *R.Norte* ID at 0100:45; in jumble. [Connelly-MA]
- 740 **CUBA** *R.Angulo*, Sagua de Tánamo JUL 22 0200 – Man, "Radio Angulo, transmitiendo desde Holguín, Cuba," 6 chimes; good over WSBR. [Connelly-MA]
- 750 **VENEZUELA** YVKS, RCR, Caracas JUL 22 0200 – "RCR, siete cincuenta AM" ID; good over Cuban *R.Progreso*. [Connelly-MA] JUL 29 0158 – Fair; "RCR 750 AM porque lo bueno une," into promo string. AUG 6 0359 – Fair; extended rendition vocal national anthem. [Conti-NH]
- 760 **BRAZIL** ZYH588 *R.Uirapuru*, Fortaleza AUG 2 0000 – Man in Portuguese; slightly over mess. [Connelly-MA]
- 760 **COLOMBIA** HJAJ, RCN, Barranquilla JUL 22 0201 – Banco Popular advert, net ID "RCN radio, nuestra radio"; loud. [Connelly-MA]
- 780 **VENEZUELA** YVMN *R.Coro*, Coro JUL 22 0402 – Venezuelan anthem; slightly over pile. AUG 2 0101 – *R.Coro* ID; fair/dominant. [Connelly-MA]

- 790 **CUBA** *R.Reloj*, Pinar del Río//Holguín JUL 30 0605 – "RR" code ID's heard punching through the noise, with nothing else heard. One "RR" per minute, at about :20. [Wilkins-CO]
- 800 **BONAIRE** *PJB TransWorld Radio*, Kralendijk AUG 2 0100 – Woman, "En Bonaire... Caribe Holandesa"; good. [Connelly-MA]
- 810 **BAHAMAS** *ZNS3 Freeport* JUL 22 0359 – Commonwealth of the Bahamas mention, anthem; good. [Connelly-MA]
- 810 **COLOMBIA** *HJCY Caracol Radio*, Bogotá JUL 27 0030 – CARACOL Radio ID; dominant. [Connelly-MA]
- 840 **CUBA** *CMHW Dobleve*, Santa Clara JUL 26 0900 – *Dobleve* ID; over pile. [Connelly-MA]
- 840 **HAITI** *Radio-Télé 4VEH*, Cap Haitien-Petite Anse AUG 2 0001 – "Dashing Through the Snow" interval signal at 0001:21, man in French and soft music; over Brazil, Cuba. [Connelly-MA]
- 860 **BRAZIL** *ZYJ459 Radio CBN*, Rio de Janeiro JUL 22 0200 – Woman in Portuguese, fanfare, man with "CBN" mention; over others. JUL 27 0030 – Lengthy "gol!" screaming in reverberated Portuguese talk by man; atop right after WWDB signed off. [Connelly-MA]
- 860 **VENEZUELA** *YVYE R.Enlace 860*, Valle de la Pascua AUG 2 0000 – Talk, "Música y mas música, Enlace 860, tu alternativa"; dominant. Thanks to Henrik Klemetz on RealDX for ID analysis. [Connelly-MA]
- 940 **BRAZIL** *ZYJ453* Rio de Janeiro JUL 22 0201 – Man in Portuguese (possibly religious); in jumble with Colombia, others. [Connelly-MA]
- 940 **COLOMBIA** *HJTL, RCN*, Cucuta JUL 22 0201 – Banco Popular advert parallel 760; mixed with Brazil. [Connelly-MA]
- 980 **CUBA** *R.Reloj*, Moa-Rolo Monterrey AUG 12 1002 – The little 1000 watter ticking and beeping away in the co-channel of mostly KQUE impersonating a Mexican with Mexi tunes, Spanish Christian words just before the hour and male canned ID. [Krueger-FL]
- 990 **CUBA** *R.Guamá*, Pinar del Río-Politécnico JUL 27 0400 – Xylophone attention signal, Cuban anthem; over domestic jumble. [Connelly-MA]
- 1000 **COLOMBIA** *HJAQ, RCN*, Cartagena JUL 22 0201 – Banco Popular advert parallel 760; just a bit over Cuban wobbler and huge IBOC blob. [Connelly-MA]
- 1050 **CUBA** *R.Victoria*, Las Tunas JUL 23 0948 – Cuban ballads, female announcer with brief José Martí factoid, ID 1004, "emisora... Radio Victoria..." and male and female talk, another ID by the man. Good at times, with XEG nulled. [Krueger-FL]
- 1050 **MEXICO** *XEBCS La Radio de Sur California*, La Paz, BCS AUG 11 1158 – Music leading up to 1200 ID by man: "Estas escuchando La Radio de Sur California en la 1050 de amplitud modulada y el red estatal en la 99.1 FM, emisoras pertenecientes al Instituto Estatal de Radio y Televisión del gobierno del estado de Baja California Sur, con estudios y oficinas y estudios en Legaspy y Altamirano, Colonia Centro, La Paz, Baja California Sur..."; back to music after this long ID. Fair for a few minutes before losing out to XED and KTBL. Have heard this often but never with any call letters given. [Wilkins-CO]
- 1060 **MEXICO** *XERDO La Raza 1060*, Reynosa, Tamps. JUL 28 1100 – Anthem in progress way under XEEP, and the only other 1060 is XERDO, so (new term branded) fake ID. XEEP hit the anthem from 1100:59 UTC. AUG 12 1101 – Following up on my fake ID log (second anthem following XEEP anthem), dominating today with anthem in progress followed by male "XERDO, La Raza 1060" into Mexi tunes, with canned "La Raza 1060" between songs. Very weak anthem underneath from 1102, which would be a reverse fake ID for XEEP since there's only two Mexicans on 1060 kHz. [Krueger-FL]
- 1100 **CUBA** *R.Angulo*, Mayarí AUG 13 0955 – "One Love" by Bob Marley & the Wailers segued to "Alouette" by Paul Mauriat. Station gong/chimes theme, ID into "Letra de Te Doy Una Canción" by Silvio Rodríguez. [Krueger-FL]
- 1110 **CUBA** *R.Angulo*, Holguín JUL 22 0400 – Cuban anthem parallel 740; under WBT. [Connelly-MA]
- 1140 **CUBA** *R.Surco*, Morón JUL 26 0300 – Distorted audio fanfare music, man with *R.Surco* ID at 0300:45, woman in Spanish; mixed with WRVA. [Connelly-MA]
- 1140 **MEXICO** *XEMR* Monterrey, NL JUL 21 1101 – National anthem in progress; ID at 1103:30: "XEMR Once Cuarenta de amplitud modulada, transmitiendo las 24 horas del día con cincuenta mil wats de potencia..." and also gave address, which I did not copy; a bit of music followed before going into what sounded like news at 1108 UTC. Rough copy in the mix. [Wilkins-CO]
- 1150 **CUBA** *R.Bayamo*, Bueycito AUG 13 0359 – Under WWDJ; choral national anthem, then doorbell chimes parallel 1620 kHz. [Conti-NH]

- 1170 **COLOMBIA** HJNW *Caracol Radio*, Cartagena JUL 27 0159 – Several CARACOL Radio ID's; over WWVA. [Connelly-MA]
- 1210 **CUBA** *R.Sancti Spiritus*, Sancti Spiritus AUG 13 0501 – Under WPHT; instrumental segment of "Winchester Cathedral" into canned ID with fanfare, "En el centro de Cuba... CMGL Radio Sancti Spiritus..." [Conti-NH]
- 1560 **MEXICO** XEJPV *R.Deportiva 1560 AM*, Cd. Juarez, Chih. AUG 9 1200 – XE anthem, followed by ID at 1201:30: "Escucha XEJPV, Radio Deportiva 1560 AM, transmitiendo con mil wats de potencia desde Chapultepec 316, Colonia Cuauhtémoc, Edificio Megaradio, con lo mejor...? información deportiva de la frontera, México, y el mundo..."; this was followed by what sounded like a health talk show, hosted by a soft-spoken gal who was hard to understand; many mentions of "alimentos," "alimentación," etc. This 1000-watt station was losing steam and I lost it at 1210 UTC. Also heard the day before at the same time with the same sequence, following a Billy Joel song, at the same times but with poorer copy and not much readable except the new slogan. This may have been the first day of broadcasting with the new slogan and format (*ex-R.Viva*). According to an article I saw online, AUG 8 was the formal inauguration of *R.Deportiva 1560*, with the mayor and numerous local sporting officials in attendance. The new format will air sports and related programs such as fitness and health. [Wilkins-CO]

TRANS-PACIFIC DX

- 774 **AUSTRALIA** 3LO Melbourne AUG 3 1047 – A quick check for TP carriers, on 9 kHz steps via the handheld DX-398: Yes, JBA detected from the west/southwest. AUG 12 1109 – JBA carrier looping west/southwest, likely 3LO Melbourne. This so weak that I don't bother with a complete 9-kHz bandscan, but instead search for 10-kHz Mexicans at SRS. [Hauser-OK]
- 882 unID AUG 11 1053 – From west/southwest, presumably Australia/New Zealand. Another on 1098 has no null, so likely local birdie rather than Marshalls. [Hauser-OK]
- 1098 **MARSHALL ISLANDS** V7AB Majuro AUG 3 1049 – JBA detected on the DX-398 from the west. Sunrise here 1140 UTC. [Hauser-OK]

CONTRIBUTORS

Mark Connelly WA1ION, South Yarmouth MA; Microtelecom Perseus, cardioid-pattern SuperLoop 10m vert. by 11m horiz. (peak 165°, null 345°).

Bruce Conti WPC1CAT, Nashua NH; WinRADiO Excalibur, MWDX-5, variable termination Super/Ewe 15 x 23-m 60° northeast, variable termination SuperLoop 15 x 23-m 180° south.

Glenn Hauser, Enid OK; NRD-545 with ALA-330S or north/south not very long wire, DX-398 or PL-880 with internal antenna only, sometimes IC-R75 with ~100-ft east/west longwire.

Terry L. Krueger, Clearwater FL; NRD-535, IC-R75, longwires, active loop.

John Wilkins, Wheat Ridge CO; Drake R8, 4-foot box loop.

73 and Good DX!

Musings of the Members

Dave Schmidt, 49 N. Sumner Street, York PA 17404, NRCMusings@aol.com

Denny Lee Adkins – Huntington WV (dxdenny0948@yahoo.com)

To be sure, summer DX is a big loser. Breaks my heart to see the glorious, crisp reception of the night season deteriorate into the hum and static of the summer months. We'll just have to make the best of it, I guess. Sunrise, sunset remain fertile ground for MW DXers. I reeled in coveted KFI-640 one summer morning long ago. Can be had. Master the null is the thing. The winter wasn't much for me, DXwise, having bigger fish to fry. But the winter did, however, have one outstanding highlight. 1550 WIGN Bristol, Va., a sunset regular with a lot of snappy gospel bluegrass. Also, 590 WMBS Uniontown, Pa., found its way down here one snowy evening. I shall be relentless in the praise of my CCraneSW Radio. A little feller with big rig performance. I glued it onto a turntable and added a beautiful Grundig loop. and wow it really cooks! It's the real deal! Looking forward to the fall.

Bill Riches (WA2DVU) – Cape May C.H. NJ (bill.riches@verizon.net)

Any suggestions for a logging program for medium wave broadcast stations? I use WWSU for beacons and it is a cool program.

DX Toolbox

Shawn Axelrod, 30 Becontree Bay, Winnipeg R2N 2X9 (Canada) amandx@mymts.net

Greetings once again from the Heart of the Continent and welcome to the DX Tool Box Column number 95.

The Way Back Machine Videos:

A trip to the mall and he finds radio heaven: <https://www.youtube.com/watch?v=EgA0mWuWLI>

Need parts? He might have it for you: <https://www.youtube.com/watch?v=KfJtj9ivY0s>

The radio repair guy: <https://www.youtube.com/watch?v=7vtlh-SbuTg>

Last stop Michigan: <https://www.youtube.com/watch?v=Acx3-nYczHY>

More on Radio "Shrinkage"

I read your report about AM 'shrinkage' in the Toolbox column of the latest DX News. I've been documenting the disappearance of AM radio countries worldwide at <http://www.bamlog.com/darkcountries.htm> 73 Bruce Conti

Off Topic – Numbers Stations

Here is a link to a great article that is about Shortwave and not BCB but makes for a great read:

<http://www.bbc.com/future/story/20170801-the-ghostly-radio-station-that-no-one-claims-to-run>

It is all about the numbers stations that are and were on Shortwave over the years. It tries to clear up some mysteries or at least give some possible meaning to these stations. I have heard "The Buzzer" myself.

Bits and Bites from the NRC listserv:

From: Mark Durenberger

Re: Two DXers and the Eclipse

There's been a lot of chatter in the Ham newsletters and the scientific community about RF-signal measurements during the August 21 eclipse. But not much has appeared in the "DX" newsletters. In the hope of stimulating an exchange about proposed listening methodologies, we want to share the eclipse-monitoring plan of two DX'ers ... Nick Hall-Patch and myself.

We plan to take advantage of a technology that wasn't available during the last major eclipse: the Software-Defined Radio (SDR). To give all signals an equal chance, the Medium-Wave antennas used will be high-gain omni-directional. The SDR listening posts at Nick's Victoria British Columbia home and my cabin in North-Central Minnesota will be connected by a balanced wire-pair, with the separated antennas forming a Very-Long-Baseline Eclipse-Catcher Array ("VLBECA"). RF measurements will be taken from 9.01 kHz through 66.666 MHz in 1.1-Hz increments.

For connectivity between us to form the VLBECA, we will use pair 3 (green/white) of special Cat-5 cable with pink jacketing. (From our recent desert DX'pedition we found the pink outer jacket to be the best color for optimal velocity factor in the Cat-5, and we were already aware that an odd-numbered pair would maintain better polarity.)

The exact distance between our two locations is 1,359.37 miles (or 2187.69395328 kilometers if you're Canadian). Since there are a lot less miles than kilometers along the VLBECA, we chose to save money by buying the connecting cable by the mile rather than the kilometer, and that meant purchasing our Cat-5 in the United States.

Further input on velocity factor from the National Bureau of Standards (NBS) led us to choose stranded rather than solid wire for the Cat-5. This created some contention between Nick and myself, since stranded copper is more expensive. However, when we realized the Cat-5 route took us through the Bakken Oil Fields of North Dakota, we knew the superior mechanical performance of stranded wire would provide additional integrity against rough handling.

For Cat-5 pair 3 termination consistency on the two ends, we asked for bids for a pair of 2.2:1 matching transformers that would match the Cat-5's native 110-ohm impedance to the 50-ohm input of the 273 dB-gain RF amplifier. However, no one could meet our specifications. So we ended up using the Western Electric 111C "repeat coil" since this device is known to significantly reduce Group Delay. <https://www.jmu.edu/wmra-eng/archive/repeatcoil.pdf>

To guard against inaccuracies in the eclipse schedule, we agreed to begin recording at both monitoring stations at 0301 UTC July 27, and to conclude at 1921 UTC, September 31. For the SDRs, 5600 Terabyte storage devices were acquired from Best Buy.

Since we will be measuring signals expected to be at the very limits of receiver noise performance, we spent a good deal of time thinking about continuous battery power since, because

of possible eclipse-schedule inaccuracies, we don't want to stop the recordings during the above period, lest we miss something. Fortunately, we were able to negotiate access to the battery rooms of the phone companies at our respective locations. For Nick, that's BC Telus (formerly BC Tel; formerly the Victoria & Esquimalt Telephone Company and the New Westminster & Burrard Inlet Telephone Company) and, for me, the Upsala MN Telephone Company (formerly the Upsala MN Telephone Company). Connectivity to these battery rooms will use fabric-covered lamp cord acquired from Mark Connelly. We believe the color of the lamp cord fabric will not impact the Group Delay.

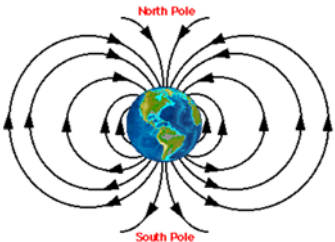
Once the recordings have been made (assuming there really *is* an eclipse) Nick and I will meet in Salt Lake City Saturday October 7 late afternoon to review all the recordings, and we plan to publish our results here and in QEX on Sunday October 8.

Please let us know if you think we've missed anything in our planning. Nick and I are both "elderly" and we want to get this eclipse right so we don't have to wait for the next one. Cheers!

Ed. Note – Sounds like you guys have really thought this through. I hope the copper thieves that keep going after AM radio stations don't find out about all that stranded copper wire – would be quite the bonanza if they find it. Perhaps it will be too dark for them to see it during the eclipse. – DY

73 for this time Shawn

Remember On A Clear Day You Can Hear Forever



Geomagnetic Indices

Geomagnetic Summary July 2017

Via Phil Bytheway – Tabulated from email status daily (K = 0000 UTC).

Date	Flux	A	K	Space Weather	16	87	41	5	moderate, G2
7/ 1	71	11	2	no storms	17	86	27	2	moderate, G2
2	71	18	4	minor, G1	18	78	7	1	no storms
3	72	5	1	minor, R1	19	73	4	1	no storms
4	72	4	2	no storms	20	70	7	3	no storms
5	73	3	1	no storms	21	69	14	3	no storms
6	76	7	3	no storms	22	70	16	3	minor, G1
7	80	5	2	no storms	23	71	14	4	no storms
8	87	3	1	no storms	24	70	12	4	no storms
9	91	28	4	minor, G1, R1	25	70	9	3	no storms
10	95	9	2	no storms	26	69	11	1	no storms
11	91	8	2	no storms	27	68	6	3	no storms
12	90	4	1	no storms	28	70	7	2	no storms
13	92	4	2	no storms	29	70	4	1	no storms
14	94	4	1	minor, R1, S1	30	70	4	0	no storms
15	92	4	1	minor, S1	7/31	72	3	1	no storms

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



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3.5 Inch (89mm) “Frequent Flyer” FSL Antenna Compact MW-DXing Gain at Home or on Long Range Vacations

By Gary DeBock, Puyallup WA, USA July 2017

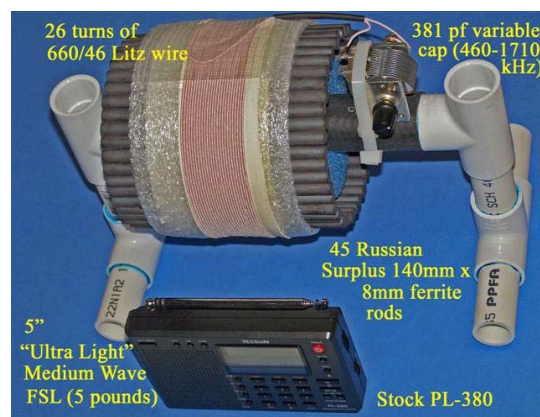
Introduction: Graham Maynard’s description of the “Ferrite Sleeve” antenna in early 2011 kicked off a torrent of experimentation among interested hobbyists, most of whom were searching for maximum DXing gain boosts. It was quickly discovered that this new type of antenna had a unique capability to provide exceptional gain from an extremely compact size – so long as the builder didn’t mind the “side effects” of concentrated weight and cost. Heavy and costly FSL antennas soon proved to be superior for high-gain DXing in extremely tight spaces, such as at narrow ocean cliff turnoff sites (where they managed to carve out a niche in the all-new sport of ocean cliff transoceanic DXing). But the vast majority of DXers have neither the interest nor the ability to construct and use such monster FSL antennas, let alone set up at a wild ocean cliff site. Given the fact that the antenna still had the unique ability to provide concentrated DXing gain, though, would a smaller model be able to provide a similar performance breakthrough in an all-new mission – as a DXing gain booster after long-range airline travel?

Strict Design Requirements: In order to succeed in this new mission a compact FSL would need to be both lightweight and high gain, and offer performance clearly superior to any antenna its size. It would not only need to have a non-subversive appearance (allowing it to routinely pass through airport TSA security checkpoints), but also need to fit easily within hand-carry luggage – after having been packed securely inside a matched-size plastic tote. All of the construction parts would need to be readily available for purchase. And finally, despite the FSL antenna’s reputation of “breaking the bank,” it would need to be of reasonable cost for most hobbyists to build, in a rugged, simple design offering both ease of construction and long-term DXing enjoyment. These were the guiding objectives in the “Frequent Flyer” FSL antenna project – the major experimental effort here this past winter.

Tweaking an Old Classic: In 2012 a full “Heathkit-like” construction article was published for a 5 inch “Ultra Light” FSL antenna – a simple but effective design using 45 of the 140mm x 8mm ferrite rods in a model designed to be built for under \$99 (see right). The weak-signal performance of that compact model was found to be roughly comparable to that of a 4 foot (1.2 meter) air core box loop, and quite a few of those FSL’s were built around the world (to the delight of the eBay ferrite sellers, who soon doubled their asking price for that particular size of ferrite rod).

The introduction of the higher sensitivity 1162/46 Litz wire in early 2014 opened up some new design possibilities in compact FSL antennas, however. It had already been proven that a smaller FSL using the higher sensitivity 1162/46 Litz wire could match the weak-signal performance of a somewhat larger model using the 660/46 Litz wire, as long as the other components were the same. Upon testing and tweaking, it was found that the original 5 inch FSL antenna introduced in the 2012 article could be shrunk down to a 3.5 inch diameter size with no performance loss (i.e. roughly equivalent to that of a 4’ air core box loop), so long as it used the upgraded 1162/46 Litz wire, and was augmented by slightly longer ferrite rods.

The compact 3.5 inch (89mm) diameter would presumably offer a non-subversive profile to airport security screening agents, and could fit very well inside hand-carry luggage when protected by a matched-size plastic tote (see left). All of the construction parts used in this new “Baby FSL” design were readily available, and although the 2012 model’s construction cost of \$99 couldn’t quite be matched, at around \$150 this new antenna was probably within financial reason for most DXers – especially for those looking for a simple, convenient way to enjoy high sensitivity MW-DXing during long range vacations. The advantage of packing away a compact, high gain antenna that can be immediately set up and used within a motel room (or out on its balcony) has the potential to add some serious hobby fun during exotic vacations – as Craig Barnes and I both found out in a major way during our April 2017 Hawaii DXpeditions to Princeville, Kauai and Kona on the Big Island.



Three “Frequent Flyer” FSL Designs: During winter experimentation three different airport-friendly models were developed, and this model (**at right**) was designed to be the intermediate “workhorse model” with a combination of high gain, readily available parts and reasonable cost. The Hawaii DXpeditions were conducted with airport-friendly 5 inch (127mm) FSL models using the Russian 100mm ferrite bars, which unfortunately are no longer available from any source. Only five of those models were made, but this model matches them in weak-signal DXing performance. An “economy model” using the commonly available Russian 62mm x 12mm x 4mm ferrite bars and 660/46 Litz wire was also developed, and depending upon demand, that model may also be the subject of a future construction article. Its weak signal performance is somewhat less favorable than this model’s, but it can be constructed for around \$65 US, using commonly available parts.



Project Overview: This construction article provides step-by-step information for assembly of a compact, high-performance Medium Wave FSL antenna suitable as a weak signal gain booster while DXing either at home locations or after long range air travel. The construction procedures are not particularly difficult, although strict attention to detail and the use of the recommended components is necessary to obtain the designed level of performance. Proper soldering of the 1162/46 Litz wire requires a 60 watt (or larger) soldering iron or gun, and careful attention to the assembly instructions. Proper soldering of the variable cap connections also requires skill, and should not be attempted by those lacking any experience. Use of the smaller and cheaper 660/46 Litz wire (or other smaller diameter Litz wire) will result in a reduced level of performance. Substitution of the ferrite rods and/or variable capacitor may also result in reduced performance, and is not recommended. Although this compact antenna is capable of performance roughly comparable to that of a 4’ (1.22m) air core box loop, the FSL antenna has much sharper tuning, and its optimal inductive coupling range to the radio also changes along with the frequency. Practice and skill in optimizing both of these adjustments are very important in getting the best DXing performance from any FSL antenna (some tips will be included in this article).

The PVC plastic frame has been carefully designed so that the model will fit within a matched-size plastic tote packed inside hand-carry luggage during air travel, and substitutions in the PVC frame components and/or dimensions will probably upset this design feature. The matched-size plastic tote (**pictured at left**) is a Sterilite 14 3/8” L x 8 1/4” W x 6” H (36.5 cm x 21cm x 15.2 cm) model. It is a tough, high quality but inexpensive container designed to provide maximum protection for the antenna during rough air travel. For those builders who plan to use the FSL for travel DXing, securing this particular plastic tote should be a high priority. In cases where a builder cannot find this item, the author has stockpiled many of them, and can provide one at cost to any builder who is unable to locate one.



As a final caution, although this antenna has a good track record of passing through TSA security checkpoints at local airports, it is impossible to guarantee that every security inspector will routinely allow the model to pass through every security checkpoint worldwide. Security levels and the quirks of individual inspectors may change without notice. Documentation such as an amateur radio license or a (well-worn) copy of these assembly instructions may well convince a suspicious inspector that this is indeed a radio antenna.

Construction Parts Required: The following components are necessary to assemble the antenna. Those items marked with an asterisk (*) have been stockpiled by the author, and WHILE SUPPLIES LAST are available at cost (including shipping) to those who cannot find them after a serious search. The 160mm ferrite rods are typically ordered from the Ukraine, and builders in North America can expect a significant delay in receiving them (from 20 to 30 days). Typically about 10% of these ferrite rods have obvious bends or twists which make them undesirable for a project like this. Ordering a few additional rods to compensate for this issue is recommended.



*A) 4 inch (102mm) long section of 2.25 inch diameter Funnoodle swimming floatation aid (available at Walmart Stores) <http://www.jakks.com/funnoodle-products.html>

*B) Fernco Part No. 1056-150, 1 ½ inch x 1 ½ inch (38mm x 38mm) plumbing coupler, available at Home Depot <https://www.fernco.com/dimensional-drawings/plumbing/flexible-couplings/stock-couplings-1056/1056-150>

C) 27 Russian surplus 160mm x 8mm ferrite rods, 400 permeability (available from eBay seller "Alexer1" at <http://www.ebay.com/itm/30-pcs-Vintage-Ferrite-Rod-8mm-x-160mm-For-Crystal-Radio-/192185405777?hash=item2cbf249151:g:DREAAOSwNuxXaCFE>

*D) Oatey 4 inch x 4 inch (102mm x 102mm) foam closet spacer (available at Home Depot) <https://www.oatey.com/2372333/Product/N/Oatey>

E) 35 feet (10.6m) of 1162/46 Litz wire (available from eBay seller Mkmak222 at <http://www.ebay.com/itm/Litz-wire-1162-46-for-Amateur-Crystal-Radio-coil-Single-layer-insulation-100-/151156887668?hash=item2331a71074:g:aT0AAOxyTjNSdFIQ>

*F) Rite Aid 1 inch x 10 yards (25mm x 9.1m) waterproof tape roll

*G) Scotch brand 1.88 inch x 21.8 yard (48mm x 20m) "Extreme" type strapping tape roll

*H) (Optional) Johnson & Johnson 3 inch x 10 yards (76mm x 9.1m) waterproof tape roll

*I) Radio Shack 1 inch (25mm) molded hexagonal control knob (with setscrew)

J) Midnight Science (Xtal Set Society) 365mm 8:1 drive variable capacitor <http://www.shopping-cart.midnightscience.net/products/365-8-1-variable-capacitor-632cf9a8-46ca-4d46-b15f-7aa9abd9bee8>

*K) 6-32 x 3/8" screw, two 6-38 nuts, and one #6 solder lug

*L) Three 14 inch (355mm) long 120 pound (54.5 kg) test plastic tie wraps

*M) Two ½ inch Schedule 40 PVC "Tee" fittings

*N) Two ½ inch Schedule 40 PVC "Elbow" fittings

*O) 8.5 inch (216mm) long section of ½ inch Schedule 40 PVC pipe

*P) Four 1.75 inch (44mm) long sections of ½ inch Schedule 40 PVC pipe

*Q) Two 1 inch (25mm) long sections of ½ inch Schedule 40 PVC pipe

*R) 2 inch (51mm) long section of 1/8 inch (3mm) diameter shrink tubing

*S) 8 inch (203mm) long section of 5/8 inch (15mm) inner diameter rubber heater hose

Miscellaneous: 60 watt (or larger) soldering iron or gun, 60/40 resin core solder, superglue, PVC glue, a 1" high circular spacer 2" in diameter (see Step #), screwdrivers, diagonal cutters and scissors. The Sterilite 7 quart (6.6 liter) plastic tote (pictured on page 20) and standard hand carry luggage will be necessary for those who plan to travel with the antenna by air.

STEP-BY-STEP CONSTRUCTION – FERRITE SLEEVE

1) **Refer to the photo at right.** Take the Fernco plumbing coupler (Part B) and remove the two metal hose clamps and paper label (they will not be used in this project). Using water, soap and rags, clean off any adhesive residue from the label still on the side of the plumbing coupler. With diagonal cutters, snip off any protruding rubber tabs on the ends of the coupler which might interfere with ferrite rod placement, or flat stacking of the coupler on a table. Finally, remove any label from the side of the Funnoodle (Part A) and insert it into the side of the plumbing coupler, as shown in the photo. Squeeze and push the Funnoodle until it is in the position shown in the photo.



2) **Refer to the photo at left.** Place the open end of the plumbing coupler flat on a table, and push the Funnoodle as far down as possible with flat hand pressure. Then work around the edge of the plumbing coupler, using firm downward thumb pressure on alternating sections of the Funnoodle, until it reaches the position shown in the photo. Check the other edge of the plumbing coupler to ensure that it has a similar appearance, and if not, use firm thumb pressure on either side of the Funnoodle until both of its sides have a similar flat appearance. Ensure that neither edge of the Funnoodle extends past the edge of the plumbing coupler.



Check the other edge of the plumbing coupler to ensure that it has a similar appearance, and if not, use firm thumb pressure on either side of the Funnoodle until both of its sides have a similar flat appearance. Ensure that neither edge of the Funnoodle extends past the edge of the plumbing coupler.

3) **Refer to the photo at right.** Place the plumbing coupler flat on a table, with the lettering side up (NOTE: This lettered side typically isn't completely flat, and should never be placed on a table or spacer during the ferrite sleeve construction). Tightly wrap two turns of the 1 inch (25mm) waterproof tape (Part F) evenly spaced in the positions shown, with the adhesive side out. Do not allow the turns to cross over each other, and ensure that the overlapping sections in the two turns are lined up with each other, as **shown in the photo** (NOTE: It is important that these turns be tightly wound, in order to securely hold the ferrite rods during the sleeve construction).

Place a 1 inch (25mm) high circular spacer of approximately 2 inch (51mm) diameter flat on a table, as **shown in the photo**. (NOTE: My own spacer for this step was a 5 yard roll of Rite Aid 1 inch wide waterproof tape, although you can also use any circular spacer of the same size, such as a cut up piece of wood, or the plastic top of a food container. Ensure that the spacer is completely flat, and that it is no larger than 2 inches (51mm) in diameter.)



Finally, place the prepared plumbing coupler assembly centered on top of the spacer, as **shown in the photo**.

4) **Refer to the photo at left.** Select a perfectly straight ferrite rod (Part C) to start off the ferrite sleeve assembly. This rod will be used as a guide for all the following rods. Ensure that this rod is flat on the table in a straight up vertical position, then press it firmly against the two strips of adhesive tape.

(NOTE: Most of these ferrite rods have some minor imperfections, but you can compensate for routine minor bends by rotating the rods before placement on the tape so that all of the bends are pointing in the same direction (outward). The next step will instruct you how to accomplish this. The key point is to avoid large gaps between the ferrite rods.)

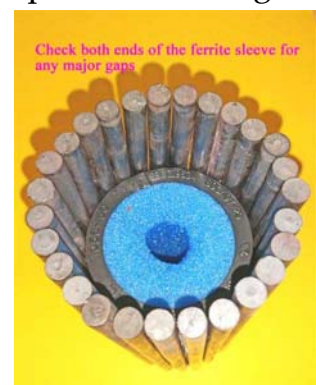
5) **Refer to the photo at right.** In order to compensate for minor bends in the rods, before placing another rod up against the tape, first place the lower end of the new rod next to the end of the adjacent rod, and check to see if there would be any major gap between the rods in that position. If not, go ahead and press the new rod firmly against the tape, flat on the table and as close as possible to the adjacent rod. If your first check reveals that there would be a serious gap, rotate the new rod until such a gap disappears, then press the rod firmly into place on the tape, as close as possible to the adjacent rod. If the new rod is so seriously bent that it can't be rotated into a good position adjacent to the previous rod then it should be rejected for this project (fortunately, these really nasty rods are pretty rare).



6) **Refer to the photo at left.** As the ferrite sleeve nears completion check to ensure that the remaining open gap has parallel sides. If not, check both the top and the bottom of the ferrite rod assembly for major gaps between rods which may be causing the problem. You can usually solve this issue by replacing any problem rods, and ensuring that each rod is placed tightly up against both adjacent rods throughout its length.

7) **Refer to the photo at right.** Place the final ferrite rods into place in the sleeve, ensuring that all of them will have firm contact with both of the tape strips. The antenna's design is for 27 of the ferrite rods to fit on the rubber plumbing coupler, and if your rods have been placed in straight positions without any major gaps you should be able to fit 27 of them within the sleeve while in contact with both strips of tape. If you have received a large number of bent rods but have done your best to follow directions you may possibly end up with only 26 rods in your ferrite sleeve, but this will not affect performance of the antenna. On the other hand, if you have been lucky enough to receive a large number of extremely straight rods you may even end up with a slight gap after installing 27 rods in the sleeve. In such a case simply rotate the rods to spread out the small gap evenly around the cylindrical assembly of rods (this situation will also not affect the performance of the antenna).

After the last ferrite rods have been installed make a final check of your sleeve assembly, ensuring that all of the lower ends of the rods were placed flat against the table (they should all be evenly lined up in a circle), and that there are no major gaps between any of the rods. During this final check hold the ferrite sleeve assembly as **shown in the photo at the top of the next page**, in order to avoid having individual rods fall off from the tape strips. As you lift the

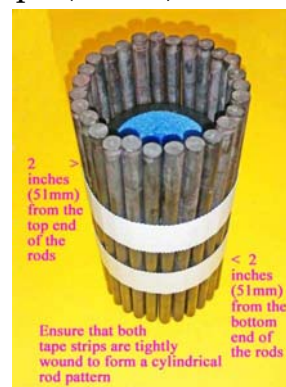


assembly off of the table the 1 inch (25mm) circular spacer should stay on the table, since it is of a smaller diameter than the ferrite sleeve.



8) Gently squeeze the ferrite sleeve assembly as **shown in the photo at left** (which will help to secure the individual rods to the two tape strips). Pick up the assembly as shown, and make a final check that the individual rods are all in contact with the edge of the plumbing coupler when the assembly is squeezed, and that none of them are being pushed up out of place (in such a case, remove the “floating” rod and rotate the remaining rods to even out the open space among the rods). Make a final check, ensuring that the bottom end of the rods (which were on the table during assembly) are all lined up with each other. This will be the edge of the ferrite sleeve facing the DXer during the antenna’s operation, so it is important that the rods on this side have a straight and tidy appearance.

9) **Refer to the photo at right.** Place the ferrite sleeve back down on the table, with the lined-up rod ends downward (as they were during its construction). After ensuring that the top rods are all still in a cylindrical pattern wrap a new, tight turn of the 1 inch (25mm) waterproof tape (Part F) around the sleeve assembly, adhesive side out, in the top position shown. Then carefully wrap another evenly-spaced turn of the 1 inch (25mm) waterproof tape tightly around the ferrite sleeve assembly in the lower position shown, also with the adhesive side out. The outer edge of each of the tape strips should be about 2 inches (51mm) from the edge of the rods. Do not allow the turns to cross over each other, and ensure that the overlapping sections in the two turns are lined up with each other, as **shown in the photo**. (NOTE: It is important that these turns be tightly wound, in order to securely hold the ferrite rods in their cylindrical pattern until the Litz wire coil is wound around them).



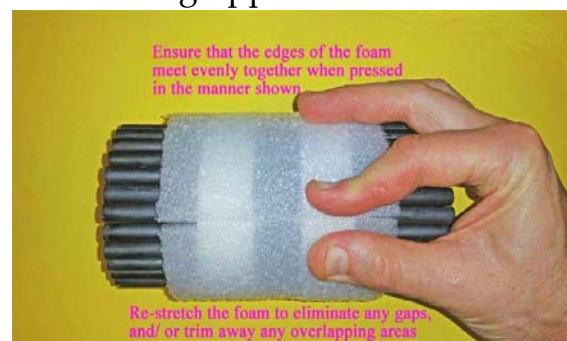
10) **Refer to the photo below.** Take the Oatey 4 inch x 4 inch (102mm x 102mm) foam closet spacer pack (Part D) and remove the label and internal staple. Unroll the foam,



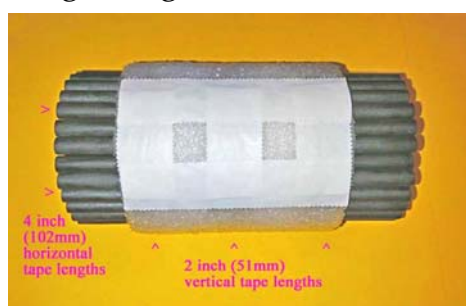
and cut a straight 4 inch (102mm) horizontal edge in the foam at a position where there is at least 10 more inches of undamaged (i.e. no staple holes or other imperfections) foam following, in order to wrap an undamaged layer of foam around the ferrite rod assembly. Place the ferrite sleeve assembly down on the Oatey foam in the position shown, so that the pre-cut horizontal edge of the foam is lined up with the edge of one of the ferrite rods. Pull the Oatey foam strip tightly around the ferrite sleeve assembly centered on the ferrite rods, so that there is equal space

between each side of the foam strip and the ends of the ferrite rods. Finally, after one complete, tightly wound wrap of the foam has been completed, press the foam down tightly against the two tape strips, and cut another horizontal edge in the foam to match up with the original horizontal edge at the exact point where the foam starts to cross over. The resulting appearance of the foam strip will resemble **the photo at the right**.

11) **Refer to the photo at right.** Ensure that the two horizontal edges of the foam meet evenly together, without any gaps or overlaps. If necessary, re-stretch the foam (to eliminate any slight gaps) or trim away any overlapping areas so that the foam edges meet neatly together when they are pressed as **shown in the photo**.



12) **Refer to the photo at left.** While pressing the foam edges together as shown in the **previous photo**, lock the



edges in place with three short (2 inches, or 51mm) vertical lengths of 1" (25mm) waterproof tape as **shown in the photo**. Place these three vertical lengths on the left edge, center and right edge of the foam strip, centered on the line where the ends of the foam strip meet together. Then place two more 4 inch (102mm) lengths of the waterproof tape in a horizontal pattern as shown, over the ends of the three vertical tape lengths. (NOTE: If you have the 3 inch wide waterproof tape (Part H), instead of this process you can simply place

a 4 inch x 3 inch (102mm x 76mm) strip of this tape centered over the line where the two foam edges meet up. This will securely lock the foam strip in place). This completes the assembly of the ferrite sleeve – place it in a secure location until it is installed in the PVC frame in Step 19.

PVC FRAME CONSTRUCTION

The following steps will instruct you in building the antenna's 1/2 inch Schedule 40 PVC frame. Along with the PVC fittings specified in the Parts List you will need to purchase PVC glue to construct this frame (an item which cannot be shipped through the mail), and also cut the pipe to the dimensions specified in the Parts List. For those who have never worked with PVC glue, here are a few general guidelines.

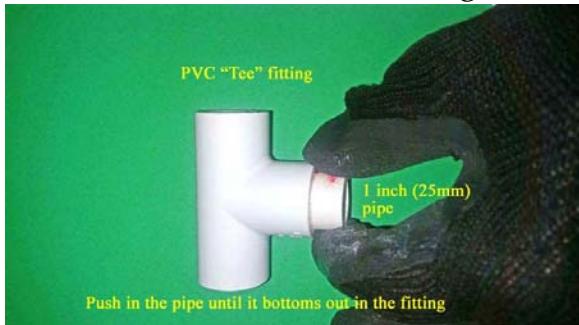
Ensure that your PVC glue container comes with a brush that will fit inside the 1/2" PVC fittings. If your glue can is 8 fluid ounces (237ml) or smaller, it almost certainly will have the suitable size of brush for this job. On the other hand, if your glue can is larger than 8 fluid ounces it probably has too large of a brush.

There are many different types of PVC glue, but my own recommendation is for the type **shown in the photo at right** (Oatey All-Purpose Cement, 8 fluid ounce size, available at Home Depot stores). This type of glue gives you a few extra seconds of set-up time before it starts to grip, providing a chance to correct any initial problems in pipe positions if you work quickly. It also has a whitish color like PVC itself, so it doesn't look messy in a project like this.



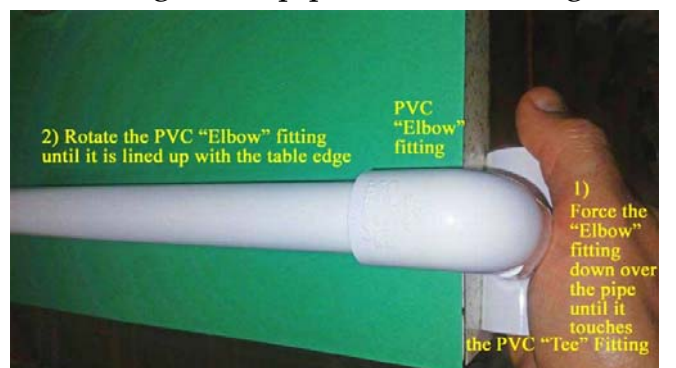
Because PVC glue has very strong fumes you should either work outdoors or in a well ventilated area. Before gluing a piece of PVC pipe into a fitting you should always do a "dry run" (without glue) to ensure that the pipe will insert smoothly into the fitting. If not, sand the edge of the pipe until it does insert smoothly. The time to discover that your pipe has a rough edge is not when you are trying to glue it into a fitting! In addition, each fitting has openings with slots designed to securely hold the ends of pipes when glue is used. Although most of the photos below show only one hand, after applying glue always use both hands to force the ends of pipes into these fitting openings until the pipes "bottom out" in the slots.

13) (NOTE: When working with the short lengths of PVC pipe (1.75 inch and 1 inch, or 44mm and 25mm) always wear a glove on the hand that is inserting the pipe into a fitting, to protect your skin from the pipe edge as you twist the fitting in place.) **Refer to the photo at left.** Take a 1 inch (25mm) long pipe (Part Q) and apply glue to one of its edges, and also apply glue to the inside of a PVC "Tee" center opening. Using a twisting motion, force the pipe into the fitting until it bottoms out. Wipe away any excess PVC glue (and also do this after each of the following frame assembly steps).



14) Repeat the previous step for the other 1 inch (25mm) PVC pipe and the other PVC "Tee" fitting.

15) Read through this entire step before performing any action. **Refer to the photo at right.** Temporarily insert the 8.5 inch (216mm) long length of pipe (Part O) into one of the openings in an "Elbow" fitting (Part N) as **shown in the photo**, to use as a guide for alignment in this step (but do not apply glue). In this step you will glue a PVC "Elbow" fitting to the pipe stub extending from one of the previously glued "Tee" fittings, and ensure that these two fittings are at an exact perpendicular angle with each other. You will need to use a table (or countertop) with a right angle as a guide for this step. After glue is applied the flat edge of the "Tee" fitting will be held against the side of the table (or countertop) **as shown in the photo**, while the "Elbow" fitting will be rotated to an exact perpendicular angle with it, based on the perpendicular edge of the table (or countertop). The first step after glue is applied will be to "bottom out" the pipe stub from the "Tee" fitting up into the "Elbow" fitting (which will make the two fittings touch together, since the stub is too short to fill the open space), and the second step will be to rotate the "Elbow" fitting to an exact perpendicular angle with the "Tee" fitting.



The first step after glue is applied will be to "bottom out" the pipe stub from the "Tee" fitting up into the "Elbow" fitting (which will make the two fittings touch together, since the stub is too short to fill the open space), and the second step will be to rotate the "Elbow" fitting to an exact perpendicular angle with the "Tee" fitting.

Set up the following items on your table or countertop, in the positions **shown in the photo at the left**. Apply PVC glue to the bottom opening of the "Elbow" fitting, and also to the short stub extending up from the "Tee" fitting. Perform the following steps within 7 seconds: Force the "Elbow" fitting down over the stub from the "Tee" fitting until it bottoms out, and then (while holding the side of the "Tee" fitting

firmly against the side of the table or countertop) rotate the pipe extending from the “Elbow” fitting until it is parallel with the edge of the table. After removal of the long pipe section from the “Elbow” fitting, the final appearance of the assembly should resemble **the photo on the previous page**.

16) Repeat the preceding step with the other set of PVC “Elbow” and “Tee” fittings (including the short stub). Once again insert the long pipe section into one of the openings in the “Elbow” fitting (without glue), and use the long pipe as a guide for proper perpendicular alignment of the fittings, as described in the previous step. Once again, the final appearance of the assembly should resemble **the photo on the previous page**.

17) **Refer to the photo at right.** Apply glue to the remaining “Elbow” opening in one of the previously prepared assemblies and also to one side of the 8.5 inch (216mm) long piece of pipe (Part O). Then, using a twisting motion, push the pipe section all the way into the “Elbow” opening until it bottoms out. The resulting appearance of the assembly should resemble **the photo at right**.



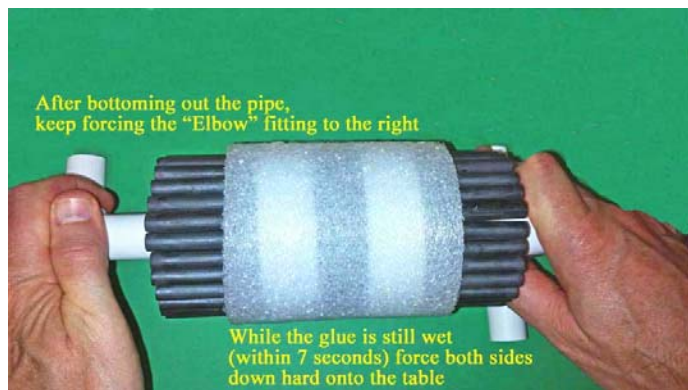
18) **Refer to the photo at left.** Take the four remaining 1.75 inch (47mm) short pipe sections (Part P) and glue them into the four remaining “Tee” openings in the previously prepared fitting assemblies, as shown. While wearing a glove to protect your skin from the short PVC pipe edges, apply glue to both the “Tee” opening and one side of the short piece of pipe, and push the pipe all the way into the opening (with a twisting motion) until it bottoms out. Repeat this process for the remaining three openings in the “Tee” fittings. When properly completed, all four of the extending short pipe stubs should be of equal length, **as shown in the photo**.

19) **Refer to the photo at right.** Take the previously prepared ferrite sleeve assembly, and using a twisting motion, carefully insert the unglued side of the 8.5 inch (216mm) long pipe section into the hole in the center of the Funnoodle in the ferrite sleeve assembly.

Continuing the twisting motion, slowly and carefully work the end of the pipe through the Funnoodle until it exits the other end of the ferrite sleeve assembly (this will be a fairly snug fit, and it is desirable to keep it that way). After the step has been completed, lay out the two sides of the PVC frame **as shown in the photo**.

20) Read through this entire step before performing any action. This final step of the PVC frame assembly will be to glue both sides of the frame together, and in order to ensure that both sides of the frame will be completely flat on the table, it will be necessary to use a completely flat table as a guide while the final glue bond sets. Ensure that your table is completely flat before using it as a gluing platform in this action.

The first part of this step will be to apply PVC glue to the two spots **shown in the photo above** (the remaining end of the 8.5 inch/216mm pipe, and the remaining “Elbow” opening in the left frame assembly). Then, all within 7 seconds, the long pipe will be pushed into the “Elbow” opening until it bottoms out, and both sides of the entire PVC frame assembly will be forced down onto the completely flat table so that both sides of the antenna’s frame end up completely flat, and aligned with each other (**as shown in the photo at left**). Ensure that your table is free of any debris before performing this step.



Finally, apply PVC glue to the two spots **shown in the photo above right**. Perform the following steps within 7 seconds: insert the end of the long pipe into the “Elbow” fitting until it bottoms out, and while continuing to force the “Elbow” fitting to the right, force both sides of the PVC frame assembly down hard onto the flat table. The left side of the frame will rotate until it is completely flat on the table (aligned with the right side), and the glue will set in this optimal position.

This completes the assembly of the PVC frame.



LITZ WIRE COIL AND VARIABLE CAP INSTALLATION

21) (Note: The following step may be performed with either the 1 inch (25mm) waterproof tape (Part F) or the 3 inch (76mm) waterproof tape (Part H). Use of the 3" tape will make the Litz wire coil installation much easier, but the 1 inch tape is perfectly acceptable as long as the instructions in this step are carefully followed.) If you are using the 1" tape, refer to the **photo at right**. Starting at the point on the ferrite sleeve where the foam is taped together, start a tight wrap of the 1" tape around the ferrite sleeve assembly, adhesive side out. Position this tape so that the outer edge is 1/2 inch (12 mm) from the edge of the Oatey foam (all around the ferrite sleeve).

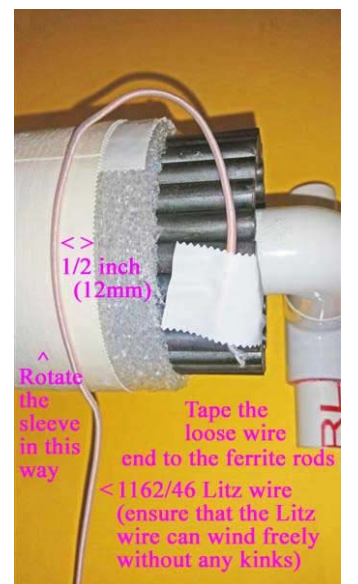


Continue this process until one entire tight turn is wrapped, then continue to wind a short (2 inches, or 51mm) overlapping section. Cut the tape on top of the previously taped portion of the Oatey foam. Begin a second tight wrap of the 1" tape adjacent to the first wrap, and continue this process until the entire second turn is also tightly wrapped and has a 2 inch (51mm) overlapping section, as described above. Then slide this wrap up against the first wrap with the zigzag edges interlocking, as **shown in the photo**. Ensure that there are no gaps or overlaps between the two tape wraps. Finally wrap a tight third turn (as shown in the photo), once again placing it up against the second wrap with the zigzag edges interlocking, without any gaps or overlaps. During the winding of the Litz wire coil, ensure that these three tape strips remain in these interlocking positions adjacent to each other, without any gaps or overlaps.



If you are using the 3" waterproof tape for this step, the process is much easier. As in the **photo shown at left**, simply wrap one turn tightly, adhesive side out, positioning it in the center of the Oatey foam wrap. After making one tight turn overlap a 2" section on top of the taped section of the Oatey foam, and then cut the tape with a straight horizontal edge.

22) Refer to the **photo at right**. Position the ferrite sleeve assembly so that the evenly lined up ferrite rods (which were flat on the table, during the sleeve assembly) are on the right side. Take your reel of 1162/46 Litz wire (Part E) and position it alongside the ferrite sleeve assembly as shown, so that the wire can be unwound freely as the sleeve is rotated upward (in the manner shown). After measuring off 7 inches (178mm) of Litz wire to use as a pigtail for the variable cap connection, start a tight turn of Litz wire running around the sleeve 1/2 inch (12mm) from the edge of the waterproof tape, as **shown in the photo**. After this one turn is securely on the tape (and evenly spaced all around, measuring from the waterproof tape border) tape the end of the Litz wire to the ferrite rods, as shown. The Litz wire point where the coil begins (and the pigtail veers off) should be near the bottom of the sleeve, where the Oatey foam strip ends are taped together.



23) (Note: During this step ensure that the left ends of the ferrite rods do not bump against the PVC frame as the sleeve is rotated. Keep about 1 inch (25mm) of space between the PVC frame and the rods.) Refer to the **photo at right below**. Continue rotating the ferrite sleeve assembly (as in the previous step) to wind another tight turn of 1162/46 Litz wire directly adjacent to the first turn. In the same manner, continue this process until a tight Litz wire



coil of 28 total turns is wound around the ferrite sleeve on top of your waterproof tape. These Litz wire turns should all be straight, kink-free and without any gaps or damage (such as frayed insulation). After 28 total turns have been wound around the ferrite sleeve, route the last turn's Litz wire back in a curve across the coil (as shown in the photo), starting the curve at the point where the Litz wire goes past the Oatey foam tape strip on the bottom of the sleeve (as shown). From the point where the last turn's Litz wire crosses over the edge of the Oatey foam strip, measure off 7

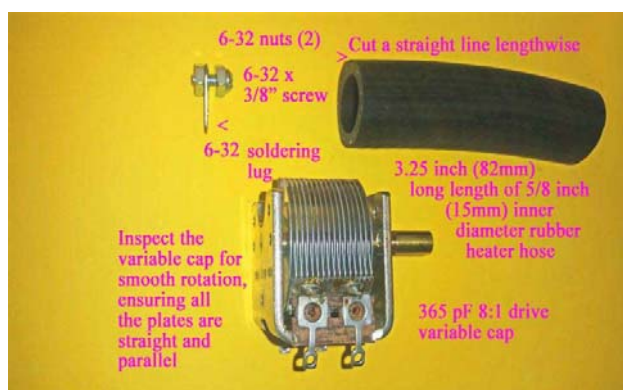
inches (178mm) of Litz wire to use as a pigtail for the variable cap connection. Cut the Litz wire at this point. In order to protect the end of this Litz wire from any damage in the following steps, use a short piece of waterproof tape to secure this end to the ferrite rods (like the first turn was secured).

24) **Refer to the photo at right.** Place a 4 inch (102mm) long strip of Scotch "Extreme" brand strapping tape (Part G) across the Litz wire curve made in the previous step, as **shown in the photo**. Position this strapping tape strip in the position shown, and then place a 4 inch (102mm) long strip of the 1 inch (25mm) waterproof tape along the lower border of the strapping tape to secure it to the coil (as shown). Ensure that these tape strips do not extend past either the left or right edges of the Oatey foam strip (trim their ends, if necessary).

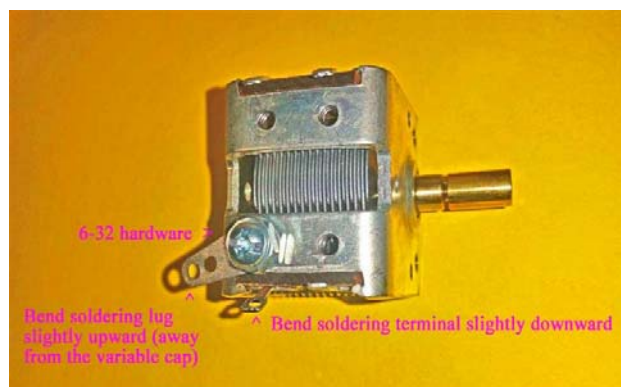
This completes the winding of the Litz wire coil. The two pigtails will be connected as part of the variable capacitor installation.



25) **Refer to the photo at left.** Take the 6-32 hardware parts (Part K) and pre-assemble them as **shown in the photo**. Thread one 6-32 nut all the way up to the head of the screw tightly, then place a 6-32 soldering lug next to it (on the screw). Finally, thread another 6-32 nut on the end of the screw for only a couple of turns, as shown (this assembly will be installed on the variable cap in the next step). Unwrap the variable capacitor (Part J) and give it a visual inspection, checking for smooth rotation throughout its tuning range, and ensuring that all of its plates are straight and parallel when rotated. Finally, cut a 3.25 inch (82mm) length of the 5/8 inch (15mm) inner diameter rubber heater hose (Part S), and cut a straight line in it lengthwise along the entire length.



26) **Refer to the photo at right.** Take the previously prepared 6-32 hardware and install it on the variable capacitor in the position shown. After tightly securing the screw, nuts and soldering lug to the variable cap chassis, grip the soldering lug with needle nose pliers and bend it slightly away from the variable cap chassis, as shown. In addition, slightly bend the indicated variable cap soldering terminal, as shown.

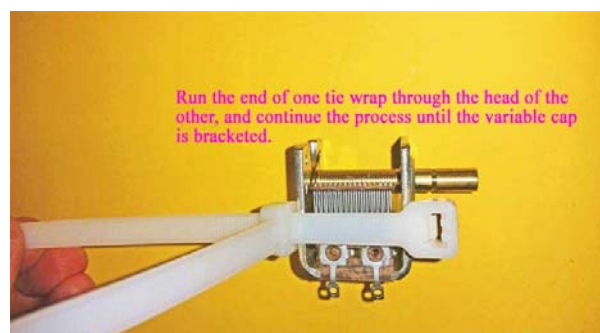


27) **Refer to the photo at left.** Take the 3.25 inch (82mm) length of the 5/8 inch (15mm) inner diameter rubber heater hose (Part S) and install it on the long pipe in the antenna's PVC frame, as shown. Note that the length of this rubber hose will be slightly longer than the length of open space on the PVC pipe, so that the rubber hose will compress the Fun noodle edge to reduce unwanted rotation of the ferrite sleeve. After placing the rubber hose in place on the pipe ensure that it is straight, with the gap pointing up (as shown). Finally, pull the upper edges back slightly to add a few drops of super glue to lock the rubber hose in place on the pipe.

28) **Refer to the photo at right.** Take two of the 14 inch (355mm) 120 pound (54.5 kg) test plastic tie wraps (Part L) and run the end of one tie wrap through the head of the other, as shown. Place this assembly on top of the variable cap in the position shown, and continue running the end of the tie wrap through

the head of the other until the two tie wraps bracket the variable cap in the position shown. After reaching this position, be careful not to change the relative position of the two tie wrap heads in the following steps.

29) Refer to the **photo at the top of the next page**. Using diagonal cutters carefully cut off the excess lengths in the two tie wraps, taking care not to change the position of the two tie wrap heads (which was adjusted to exactly bracket the width of the variable cap). This short piece will be used to lock the variable cap in place alongside the rubber hose.





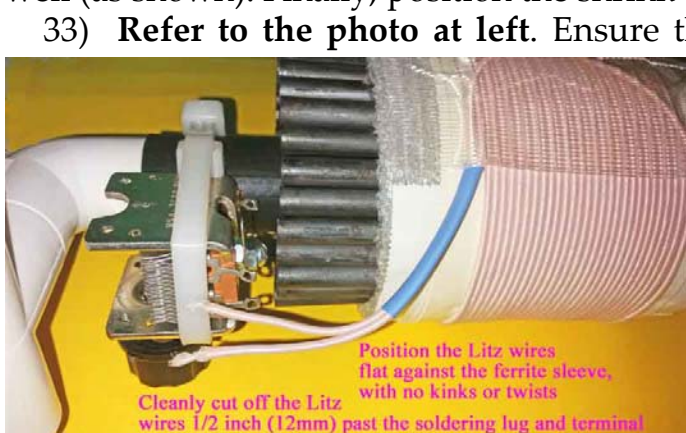
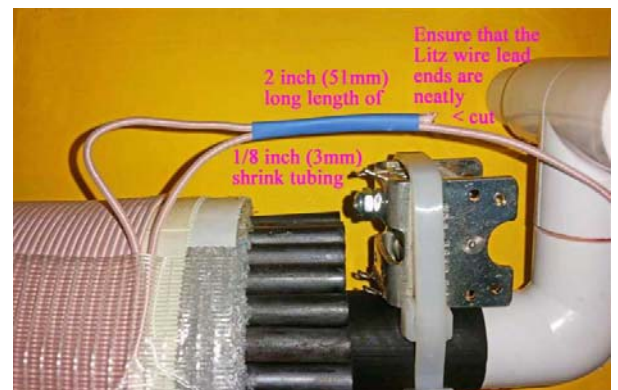
will be passed through the head of the same tie wrap (as shown), and finally pulled tight over the top of the PVC pipe and rubber hose to lock everything in place. The final tightening of this third tie wrap will be done gradually, to ensure that the variable cap has a perfectly straight vertical and horizontal alignment.

31) Read through this entire step before performing any action. Refer to the **photo at the bottom of this page** for most of the following steps. While holding the variable cap in your hand position the previously prepared short tie wrap assembly on top of the variable cap as **shown in the photos above and at right** (the bracket position). Move these parts under the PVC frame up against the rubber hose, and while holding these parts in this position, pass the end of the third tie wrap through the opening in the previously prepared short tie wrap assembly



vertically and horizontally in the position shown, and there should be at least 1/4 inch (6mm) of open space between the variable cap's rotating plates and the PVC frame when the plates are fully opened. When all of these positioning steps have been fully completed, tighten the third tie wrap securely.

32) **Refer to the photo at right.** Position the ferrite sleeve assembly as shown, and taking care not to unravel the Litz wire lead ends, remove the tape strips that are attaching the Litz wire leads to the ferrite rods. Using sharp scissors cut the two Litz wire lead ends neatly and evenly as **shown in the photo**, as close as possible to the original ends of the wires. Ensure that there are no frayed wires or insulation unraveling on the end of either lead (if so, cut off another short amount of wire until a clean cut is made). Take the 2 inch (51mm) length of 1/8 inch (3mm) shrink tubing (Part R) and pass the end of the longer Litz wire lead completely through it, as **shown in the photo**. Then take the end of the other Litz wire lead, and carefully pass it through the shrink tubing as well (as shown). Finally, position the shrink tubing as shown in the **next photo**.



33) **Refer to the photo at left.** Ensure that the shrink tubing has been moved to the position shown, and then press the two Litz wires flat against the bottom of the ferrite sleeve with the ends passing over the variable cap (as shown). Ensure that there are no twists, kinks or sharp bends in the Litz wires, then cut the Litz wires cleanly with sharp scissors (as in the previous step) 1/2 inch (12mm) past the soldering lug and variable cap terminal (that was bent outward in Step 26). As you cut the Litz wires take care to ensure that the individual wires and insulation do not unravel.

34) **Refer to the photo at right.** Place a rag or other cloth under your work area to protect the antenna from any excess solder during the next steps. Using your soldering iron, pre-tin (melt a small amount of solder) on the variable cap soldering lug and the variable cap terminal **shown in the photo**. While soldering ensure that no excess solder drips into other areas of the antenna.



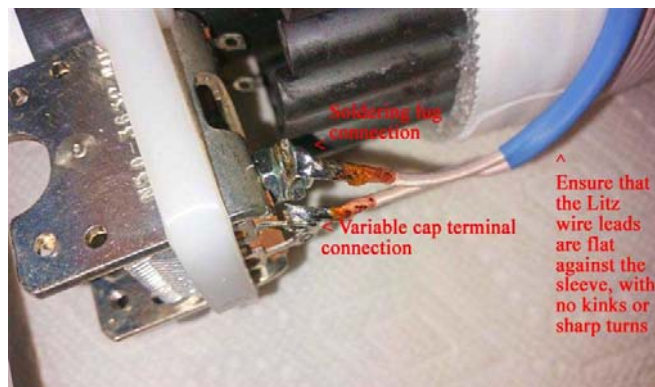
35) Read through this entire step before performing any action. (NOTE: It is essential to use a 60-watt (or larger) soldering iron or gun to provide enough heat to thoroughly melt solder around the individual leads in 1162/46 Litz wire. Attempts to use a smaller, pencil-type soldering iron to do this will invariably result in



substandard Litz wire connections, and greatly reduced performance. Properly soldering the 1162/46 Litz wire also causes a large amount of unhealthy smoke to be released, and this operation should always be performed outdoors if possible, with a fan blowing the smoke away from the worker.) Refer to the **photo at left**. Position the two Litz wire ends as shown, above the protective surface covering the other parts of the antenna. Using your 60 watt (or larger) soldering iron or gun and a wet sponge, carefully melt a decent amount of solder onto the clean end of your soldering

iron on gun, and then hold it in steady contact with the end of a Litz wire lead for about 20 seconds, after which the solder should begin to melt around the Litz wire leads in contact with the soldering iron. At this point add more solder and work the soldering iron around the circumference of the Litz wire end, observing the solder melt more of the individual leads, until finally the soldering iron has been in contact with all sides of the Litz wire end, and all of the individual leads are melted together with bright, shiny solder for a length of at least 1/2 inch (12mm). Using diagonal cutters, make a very short cut at the end of the lead to confirm that the solder has melted all the individual Litz wire leads together, and that a bright, shiny cylindrical pattern has been formed at the end of the Litz wire lead for a length of at least 1/3 inch (8mm), as **shown in the photo**. Repeat this process for the other lead, as **shown in the photo**.

36) **Refer to the photo at right.** Position the Litz wire leads as shown, flat against the ferrite sleeve assembly with no kinks, twists or sharp turns. Using the soldering iron (with a clean tip) and needle nose pliers (to protect your fingers from the heat), grip the Litz wire with the pliers and hold its end up against the pre-tinned soldering lug installed on the variable cap. Melt enough solder to make a strong electrical connection, then hold the Litz wire in place with the pliers as the solder cools (which will take about 10 seconds, depending on your air temperature). Repeat the above procedure to solder the other Litz wire lead to the variable cap terminal, as **shown in the photo**. Ensure that no solder drips onto other parts of the antenna, and that these two connections are well separated from each other, with both having bright, shiny solder joints, as **shown in the photo**.



37) **Refer to the photo at left.** Take the remaining length of 5/8 inch (15mm) inner diameter rubber heater hose (Part S), and while taking maximum care to cut perfectly straight edges, carefully prepare four 7/8 inch (21mm) long lengths of the rubber hose to be used as anti-slip grips on the antenna's "legs." After cutting these four short lengths cut a straight line lengthwise in each length as shown, and then wrap the four lengths of rubber hose around the short PVC stubs extending from the "Tee" fittings on the antenna's base. Ensure that all four rubber hose lengths are straight in position, and that their edges are flush with the edges of the PVC stubs (if not, prepare new rubber hose sections until you are satisfied). When satisfied that all four rubber hose lengths have acceptable appearance, apply a small amount of super glue to their inside edges to lock them in place. Only a couple of drops on each edge should be sufficient to provide a solid bond (do not allow any glue to



do not allow any glue to

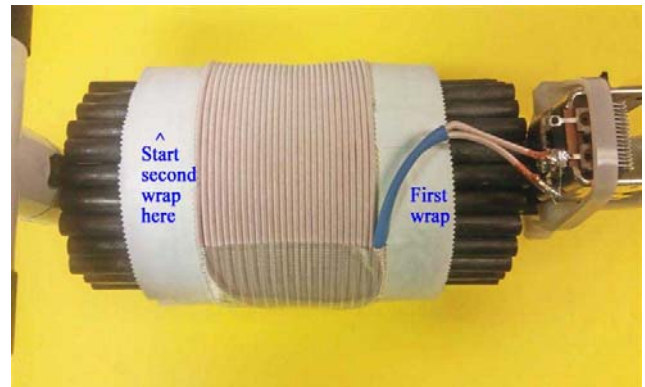
seep out of the edges). Finally, cut a 1/3 inch x 1/2 inch (8mm x 12mm) section of rubber hose as **shown in the lower right corner of the photo above**. Ensure that the inner line made by the curve is running lengthwise, as **shown in the photo**.

38) Note: Ensure that the taped section of the ferrite sleeve is still on the bottom of the antenna (as shown) before performing this step. Refer to the **photo at right**. Position the antenna as shown, then temporarily push the ferrite sleeve a short distance away from the left side of the antenna (this is the side with the uneven arrangement of ferrite rod ends). Take the previously prepared short section of rubber hose and apply a small amount of super glue to the inner (concave) section, as shown. While pushing the ferrite sleeve back from the PVC pipe insert the short length of rubber hose into the position shown, so that it is in the center of the pipe in between the pipe and one of the ferrite rods (rotate the sleeve slightly to position it against a single ferrite rod, if necessary). Press the rubber hose section firmly against the PVC fitting edge until the glue sets. (Note: This rubber hose section will prevent unwanted rotation of the ferrite sleeve, and provide some protection against accidental bumps during airline travel).



39) Refer to the **photo at left**. Position the antenna as shown. Take the 1 inch (25mm) roll of waterproof tape and start a single wrap at a position under the shrink tubing, as shown. This single wrap should be tightly wound with the adhesive side down, with the inner edge running alongside the outer edge of the first Litz wire turn (as shown). Continue this process until one complete turn has been wrapped, and then cut the tape after a short overlapping section has been formed under the shrink tubing.

40) Refer to the **photo at right**. In the same way, start a second wrap of the 1 inch (25mm) waterproof tape around the other side of the ferrite sleeve, starting on the bottom of the antenna at the position shown. Once again wind this turn tightly, adhesive side down, with the inner edge running alongside the outer edge of the last Litz wire turn. Once again, cut the tape after making a short overlapping section on the bottom of the antenna. If desired, trim the outer edge of this second wrap to be even with the edge of the Oatey foam wrap.



41) Refer to the **photo at left**. Position the antenna as shown, then take the Radio Shack 1 inch (25mm) molded hexagonal control knob (Part I) and loosen the setscrew until the variable cap tuning shaft can be inserted into the center slot of the control knob, as shown. Position the control knob so that it is in a straight position (completely vertical) at least 1/16 inch (2mm) away from the edge of the plastic tie wrap, then tighten the setscrew. Tune the variable cap throughout its range, and ensure that the control knob will not rub against the tie wrap edge at any variable cap setting. If necessary, loosen the setscrew and position the control knob outward a slight distance until you can be sure that it will never rub against the tie wrap. This completes the assembly of the antenna.

INITIAL TESTING

This antenna is a simple, High-Q tank circuit with the variable capacitor connected in parallel across the Litz wire coil. As long as the assembly instructions have been carefully followed and the recommended construction materials have been used, the chance of any problems is very remote. The compact performance advantage of this antenna is related to its High-Q tank circuit, which optimizes one selected frequency to an exceptional degree. Because of the High-Q tank circuit the tuning is extremely sharp, however, and this can require a few practice sessions to master. The variable capacitor has an 8:1 vernier drive system which assists somewhat in this effort, but careful tuning is still necessary to obtain the design level of inductive coupling performance (roughly equivalent to that of a 4 foot/1.22 meter air core box loop).

For the initial test the antenna should be placed outdoors on a non-conductive table, in an RF-noise-free environment during the hours of daylight (preferably around local noon). Ensure that your portable radio has fresh batteries, and that you go after extremely weak daytime DX signals on different frequencies across the band. Because of the sharp tuning system FSL operating experts usually pre-set the variable capacitor to the approximate desired frequency (based on the position of the variable cap plates) prior to fine tuning the antenna to match the radio's frequency. With operating practice, you will also gain skill using this method.

1) Place the FSL antenna in a secure position on a flat surface (an elevated wooden or plastic table), away from metal tables and other large electrical conductors.

2) Position your portable radio about 2" in front of the FSL coil for the initial test, as **shown in the photo above**.



3) Tune in a weak signal (the weaker the better) on the low end of the AM band on your portable radio. It is important that the signal is just above the noise level, to demonstrate the effectiveness of the antenna.

4) Make sure that the antenna's variable cap is set for the low band (plates fully meshed). SLOWLY tune the FSL antenna's variable cap knob clockwise until the antenna's resonant frequency matches that of the portable radio. When zeroed in on the weak station's frequency, the FSL should give a VERY great inductive coupling boost. Depending upon how far your weak low-band signal is from the low band start frequency (530 kHz), you may need to tune the variable cap clockwise for a short or longer time until you hear the powerful inductive coupling boost when the frequencies match up.

5) After the correct frequency is matched, slowly vary the portable radio's distance away from the FSL coil to determine the distance for the best inductive coupling boost (while keeping the radio parallel with the FSL antenna, as **shown in the previous photo**). This is also a fairly sharp adjustment, which will provide excellent results when optimized.

6) Repeat the above procedures for a very weak middle band DX station (800-1100 KHz). Remember to pre-set the variable cap plates about two thirds open before starting the SLOW clockwise tuning search for the powerful inductive coupling boost.

7) Looking at the variable cap plates can give you a rough idea of your FSL's tuned frequency, with its plates half open at 650 kHz, two thirds open at 800 kHz, and three fourths open at 1000 kHz. Memorizing a few of these settings will make it easy for you to pre-set your FSL's variable cap before the fine tuning.

8) On the high band, it is normal for the FSL to tune more sharply than on the low band. In addition, on the high band the optimal inductive coupling distance between the FSL coil and the portable radio is much shorter than on the low band (as little as 1-2 inches, or 25-50mm). Optimal inductive coupling distances on the low band (around 530 kHz) can be as great as 10 inches (25cm).

9) Ferrite rod FSL models (such as your antenna) can provide powerful inductive coupling boosts off the sides of the ferrite sleeve, as well as in the front and back. Often this off-the-side boost is superior to the front and back boost. Once the FSL is tuned and the optimal inductive coupling distance is known, move the radio the same distance off to the side of the antenna, with the radio's loopstick lined up with one of the ferrite rods in the FSL sleeve. You may enjoy a superior inductive coupling boost.

10) The FSL's tuning sharpness is much greater than that of a typical air-core loop, and best results are obtained only when the FSL's variable cap is carefully zeroed in on the correct frequency. When the best inductive coupling distance is also found, the resulting signal boost from your new FSL antenna is competitive with that of a much larger (4 foot, or 1.22 meter) air core box loop. Practice and skill in optimizing both of these adjustments will provide excellent DXing results with your new antenna.

11) When satisfied that your new FSL antenna is operating satisfactorily, read over the "Operating Tips" section below.



OPERATING TIPS

This antenna is designed to provide a high-gain inductive coupling boost to all portable radios having a loopstick, and unlike other similar-sized antennas, it will provide a very substantial signal

boost even to full-sized portables like the ICF-S5W and RF-2200. As designed, it will provide this inductive coupling boost on all frequencies from 515-1750 kHz, with signal gain approximately equal to that of a full-sized 4 foot (1.22 meter) air-core box loop. Because of the sharper tuning and lower noise pickup of the FSL antenna design, however, it will occasionally outperform the 4' box loop in the signal-to-noise ratio of weak DX signals – especially for weak DX stations adjacent to strong local transmitters received in outdoor environments (on a PVC base). Operator skill in optimizing both the sharp tuning and inductive coupling distances is essential in obtaining this level of performance.

An FSL antenna's DXing performance can be increased by placing the antenna on a non-conducting stand up off of a table, such as on a PVC-framed base for DXpedition or shack usage. Information on such PVC bases may be obtained from the author.



Although the design of this antenna (with the internal variable cap) can allow it to continue operating during periods of light rain, during such weather it is far preferable to place the antenna inside of its matched-size plastic tote, as **shown in the photo at left**. While protected in this way the antenna can operate in all but the most severe weather.

During DXpeditions when it is essential to have immediate, powerful inductive coupling boosts from an FSL antenna, a Sony ICF-2010 SSB spotting receiver can be used as an FSL tuning aide. After tuning in a weak DX station the ICF-2010's signal strength LED display can be viewed as the FSL is tuned, and the red LED lights will quickly light up when the frequencies are matched. This process can usually be done within a couple of seconds, no matter how far off the FSL was from the new frequency. The system is also effective in periods of total darkness. After the FSL is optimized for the new frequency an Ultralight radio may be tuned to receive the FSL's inductive coupling boost, if desired.

FSL antennas are curious items to the general public, and while operating in local parks or ocean cliff turnouts you may be approached by various visitors requesting an explanation of what the contraption is. Do your best to stay friendly and cooperative, even when they are interfering with once-in-a-lifetime transoceanic DX at an ocean cliff site (yes, this has actually happened). ☺

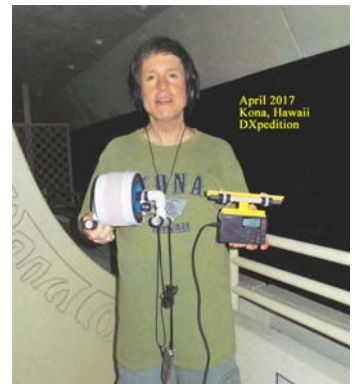
TRAVEL DXING

This antenna was primarily designed to provide the capability of high-gain MW-DXing after long range air travel, especially in environments where large external antennas are forbidden (such as exotic oceanfront motels). In such a mission the compact, rugged design should match the challenges of air travel very well. The variable cap is mounted in a secure inner location. The ferrite rods are cushioned by the rubber plumbing coupler and inner foam, as well as by the Oatey foam wrap and PVC frame. Since the design start frequency is 515 kHz, even in a worst-case scenario where a few rods are broken in a concrete fall the remaining sleeve inductance should be sufficient to keep the tuning range across the entire broadcast band, with little or no change in gain performance.

During air travel it is strongly recommended that the antenna be packed in the matched-size plastic tote, and carried in hand-carry luggage. So far, here (on the west coast of North America) these compact FSL antennas have quickly and easily passed through airport TSA checkpoints 7 times (with Craig Barnes and myself), with only one quick question having been asked about their function. As mentioned previously, a well-worn copy of these assembly instructions and/or an amateur radio license should be sufficient documentation to convince a puzzled inspector.

Finally, congratulations on the successful construction of your new FSL antenna, and best wishes in tracking down lots of exciting new DX in the coming years!

Sincerely, **Gary DeBock** (in Puyallup WA, USA)



MEMBERSHIP RENEWALS

Don't forget that your subscription expiration date is on the back cover. Renewals go to NRC Headquarters, P.O. Box 473251, Aurora CO 80047-3251. Rates are on the back page. Order publications at the same time – only one check is necessary.

National Radio Club Board of Directors Report to the Convention.

First off, thanks to Phil Bytheway for representing the NRC Board at the convention. As the Board Chairman and the Logbook publisher Wayne Heinen is unable to attend due to the printing and shipping schedule of the LOG.

The National Radio Club continues to be a very healthy and viable voice for the Broadcast Band DX community. Our membership remains above 400 subscribers to either our print *DX News* or electronic e-DXN.com.

The NRC AM Radio Logbook 38th edition began shipping on August 16 with more than 100 preorders. The NRC's other legacy publications continue to serve new and veteran DX'ers with a variety of antenna projects. We are still in the forefront of continuing to promote our hobby.

Our expenses have remained stable since moving our *DX News* printing to Peak Printing in Colorado. Our only immediate concern remains the rumors of Postal Service price increases.

The National Radio Club Treasury remains stable with reserves to cover and minor fluctuations in printing and postal expenses for the foreseeable future.

Our Internet presence is currently in the process of undergoing changes to facilitate less technical maintenance solutions in the future.

At this time, the Board of Directors is not anticipating any other changes to our current structure or the club's offerings to the BCB DX'ing community.

FCC Silent Station List

74 stations on the FCC web site as of August 18, 2017 – often less than 100% accurate.

580 KZMX-SD	1210 WLRO-LA	1360 WHCG-GA	WRCK-NY
630 KLEA-NM	1220 WSTL-RI	1370 KTPA-AR	WQTM-NC
790 KKON-HI	WLSA-VA	KFRO-TX	1490 KFKB-WA
820 WTNW-TN	1230 WLNK-NC	1380 KDXE-AR	1500 WQMS-MS
850 KHLO-HI	WAMM-VA	1390 WFBL-NY	1510 WMEX-MA
880 WAMI-AL	1240 WULA-AL	1400 WFLA-FL	KLLB-UT
910 KLCN-AR	WJLX-AL	1410 WIQR-AL	1530 KQSP-MN
KWDZ-UT	WNBZ-NY	1440 KPTO-ID	KVOG-Guam
940 KCOE-OR	1260 KBHC-AR	1450 WCOX-AL	1540 WJZI-IN
980 WWKY-KY	WCLC-TN	KQTE-CA	WONA-VA
1000 WJBW-FL	1270 WMDG-GA	WBVA-VA	1550 KRZD-MO
1020 WLWJ-FL	WMLC-MS	WCLM-VA	WUSP-NY
1050 WBVG-NY	1280 WCPM-KY	1460 KHRA-HI	1570 WFTU-NY
1060 WGSB-NC	1290 WJBI-MS	WPON-MI	1590 WGGO-NY
1080 WONS-KY	1300 KLLS-TX	1470 WPNS-AL	WABV-SC
1110 WTIS-FL	1310 WPBC-GA	KIID-CA	1600 WEJS-PA
WMUX-WV	1320 KFNZ-UT	1480 WVOV-AL	WXMY-VA
1140 WMMG-KY	1350 KLHC-CA	KPHX-AZ	
1200 WCHB-MI	KUSG-Guam	WVOI-FL	

If you see any errors here (either stations wrongly listed as silent, or silent stations missing from the list) – please let us know!

NOAA Space Weather Outlook

Issued August 14, 2017 – For the period August 14-September 9, 2017

Now at <http://www.swpc.noaa.gov/products/weekly-highlights-and-27-day-forecast>

Solar activity is expected to be at very low levels. A chance for C-class flare activity is possible from 14-28 Aug as a new active region rotates across the visible disk.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels from 14-16, 18-30 Aug and again from 01-07 Sep due to CH HSS influence. Normal to moderate levels are expected on 17, 31 Aug and again on 08-09 Sep.

Geomagnetic field activity is expected to be reach unsettled to active levels on 14, 16-22, 30-31 Aug and from 01-02 and 08-09 Sep with G1 (Minor) geomagnetic storm levels are likely on 17-18 and 31 Aug due to recurrent CH HSS activity.

Here's What to Watch for Next in AM Translator Process

Paul McLane – *Radio World* – August 16, 2017

<http://www.radioworld.com/news-and-business/0002/heres-what-to-watch-for-next-on-am-translator-process/340232>

What happens next in the area of FM translators for AM stations? We turn again to John Garziglia of law firm Womble Carlyle Sandridge & Rice, who keeps a close eye on this sector.

Radio World: What was your reaction to the outcome of more than 1,000 Class C and D AM stations applying in the most recent window?

John Garziglia: Surprised. The strong reaction tells me that AM station owners really do care about serving their listening audiences in the very best way possible.

RW: Why do you think interest was so strong?

Garziglia: In talking to broadcasters who have already paired an FM translator with an AM station, I have never heard an AM station owner lament that obtaining an FM translator was a bad idea. Rather, I repeatedly hear that even if the FM translator covers just a fraction of the AM coverage area, having the "FM" designation on sales materials alone brings in advertisers that otherwise would not buy. Too many merchants and business owners have the fallacious notion that no one listens to AM anymore. Rather than battling that fake fact, an AM station obtaining an FM translator picks up business that it would otherwise not enjoy.

RW: What further conclusions do you draw from these results or from what you're hearing from your own clients?

Garziglia: There are some forward-thinking AM broadcasters that view an FM translator as a bridge to an all-digital AM station. The FCC has yet to authorize all-digital AM, and there will be a substantial capital cost to implementing all-digital AM. For AM stations with consistent day/night coverage areas, and otherwise robust signals, all-digital may be the ultimate revitalization of the AM band as increasing numbers of radio receivers with HD capabilities proliferate. No AM station would likely do a hard-cut to all-digital. But, with an FM translator to serve the analog listening audience, all-digital operations to that portion of the listening audience with HD radios becomes attractive.

RW: Briefly describe the next steps in the FCC's process including MX and auction considerations.

Garziglia: The current 1,000+ applications will be sorted into two silos: "singletons," which are those that do not conflict with any other application filed in this window, and mutually-exclusive applications that do conflict.

The FCC is expected to soon publish a list of the singletons, and give each of those applicants a time period in which to file a complete application which, if grantable, will result in a construction permit that will be good for three years.

For the mutually-exclusive applicants, the FCC will likewise publish a listing, and give those applicants a time period to remove the conflicts, either through technical changes to the application or through agreed-upon dismissals of applications. If the conflict is removed, the applicant will be given the opportunity to file a complete application. If the conflict is not removed, then the mutually-exclusive application will go to an FCC auction.

The big question now on everyone's mind is timing. While there is no exact number of singletons, a good estimate is that 80% of the applications filed are singletons. These 800+ applicants, representing 800+ AM radio stations, are very anxious for the FCC processes to move forward. Sooner, rather than later, it can be expected that these 800+ AM station owners will start calling, emailing and visiting Chairman Pai and the Audio Division staff asking when the singleton list will be released and the opportunity to file complete applications commenced. For its own bureaucratic sanity, the FCC should expeditiously issue the singleton list and likewise move forward quickly on the settlement window for mutually-exclusive applications.

RW: Any opinion about when and how we might see action on other AM revitalization rule changes from the FCC soon? Chairman Pai seems to like using the fall Radio Show to announce such things.

Garziglia: While there are other items in AM revitalization still to be addressed by the FCC, none has benefits as wide-ranging as the FM translator windows for AM stations. The best news that Chairman Pai can bring to AM broadcasters at the Radio Show is an expedient schedule for processing the 1,000+ just-filed applications, and a scheduled date for the opening of the next AM-exclusive FM translator filing window for Class A and B AM stations.

RW: What else should we know or be watching for right now?

Garziglia: In the category of pending issues to watch, "any-channel" and "interference" are both salient topics.

The topic of “any-channel” concerns FM translator channel change applications, both as an amendment to existing ungranted application to enable the removal of mutual-exclusivity, and to remediate a claim of interference once an FM translator is on the air. The FCC now has a proposal filed by the NAB before it in RM-11787 to allow FM translators to modify to any commercial-band channel.

The topic of interference will impact some of the FM translators applied for by AM stations, either prior to a grant or after the FM translator goes on the air. The FCC has before it a proposal to amend the translator interference rules filed by Aztec Capital Partners, Inc. in RM-11786. Every FM station and existing FM translator owner should be working with its consulting engineer in the next several weeks to ascertain whether any FM translator applications filed in this window have a potential to create harmful interference to its established listening audience. The FCC’s application processing procedures for the long form FM translator applications will give only a short amount of time for filing objections. Therefore, it behooves existing stations to watch the changing FM spectrum landscape for the foreseeable future.

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ABBREVIATIONS USED IN DDXD

// – Parallel to. :00 – On the hour. AC – Adult contemporary. AP – Associated Press. BBD – Big band. C&W – Country and western. CCR – Contemporary Christian radio. CHR – Contemporary hit radio. CID – Code ID. CL – Call letters. COL – City of license. EE – English. EZL – Easy listening. FF – French. GOS – Gospel. Hi – A joke; the ham radio equivalent of :-). LID – Legal ID (i.e., CL and COL near the ToH). LSR – Local sunrise. LSS – Local sunset. NBA – National Basketball Association. NFL – National Football League. NHL – National Hockey League. NPR – National Public Radio. OC – Open carrier. OLD – Oldies. PSRA – Pre-sunrise authority. PSSA – Post-sunset authority. QRM – Man-made interference (power lines, other stations, etc.). QRN – Natural interference (lightning, etc.). QTH – Location. REL – Religious. ROK – Rock’n’roll. RS – Regular schedule. \$ – Stereo. SID – Singing ID/jingle. SRS – Sunrise skip. SS – Spanish. SSB – “The Star-Spangled Banner.” SSS – Sunset skip. TC – Time check. ToH – Top of the hour. TT – Test tones. UC – Urban contemporary. VID – Voice ID. WW1 – Westwood One.

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