From the Publisher ... As the weather cools down, the DX heats up ... time to break out the popcorn and apple cider and leftover Hallowe'en candy, throw another log on the fire (if you're lucky enough to have a fireplace, anyway, hi), and settle down to a cozy evening of DX'ing!

I apologize to anyone who was misled, inconvenienced, and generally torqued by my mistake in publishing wrong (old) addresses in recent (iss.), and somehow I managed to import the wrong address as the old template I've been using to lay out DXN, I'm finding that those who continue to use old headers. The ones in this issue should be correct dergone an address change-over to "911" ad-

And if you're experiencing REALLY slow delivery times for DXN, please let me know.

DXN Publishing Schedule, Volume 69

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DX Time Machine

From the pages of DX News:

50 years ago ... from the November 3, 1951 DXN: Bert Coyle, co-owner of KCRT, Trinidad, CO offered to sell the 250w. station for $20,000 cash. Earning about $1,800 net profit per month, he stated that "KCRT would pay for itself in a short time, and provide a lifetime income and secure investment."

25 years ago ... from the November 8, 1976 DXN: Applications were being accepted for a "graveyard DX" editor ... 1559-Cayman Islands was definitely on and reported first by Charles Ilfisse, Chapel Hill, NC, on 10-28, and the next day by Richard Eckman, Philadelphia, PA, and on 10-31 by IXDX editor Chuck Hutton, Atlanta, who commented that Ron Schatz, in Florida, could hear "nothing but the Ecuadorians" when called and asked to check the frequency.

10 years ago ... from the November 4, 1991 DXN: Hartford's WTCI morning man, Bob Steele, retired after a career with WTCI that began in 1936 ... John E. Bow published an article describing modifications for the NRD-525.
APPLICATIONS FOR NEW STATIONS

None

GRANTS FOR NEW STATIONS

1240 WIBU WI Poynette WHFA
1620 KAZP NE Bellevue KOZN
1660 WMIB FL Marco Island WODX

APPLICATIONS FOR EXISTING FACILITIES

1190 WIXE NC Monroe 2500 (2000 CH) D1

GRANTS TO EXISTING FACILITIES

550 WDDZ RI Pawtucket 4000/3400 U4, relocate transmitter
690 KVOI AZ Tucson 250/3 U1
1050 KGTO OK Tulsa 1000/22 U1
1250 WHNZ FL Tampa 2500/5900 U4
1360 WGBG VA Harrisonburg 5000/9 U1
1420 WLET GA Toccoa 5000/65 U1
1450 KCLX WA Collis 1000/4900 U1

OTHERNESS

580 KTHO CA South Lake Tahoe: silent station is ON THE AIR and relaying KLOC-920
850 KOME AK None: CP for 5000/1000 (50000CH) U10 is on
960 WHAK MI Rogers City: silent station is ON THE AIR
1000 WDJL AL Huntsville: station is SILENT
1100 KZKL NM Milan: CP for 5000/20 (2500 CH) U1 is on, ex-1130 kHz
1260 KSML TX Diboll: CP for 1800/72 U1 is on
1260 KLDU FL Tallahassee: station is SILENT
1370 WBVE AL Calera: silent station is ON THE AIR
1560 WGBB WI Eau Claire: CP for 165/250 U4 is on, ex-Port Washington, WI
1590 WOKX NC High Point: CP for 1400/14 U1 is on
1590 WMIM PA Mount Carmel: station is SILENT (again)
1600 WWRL NY New York: CP for 25000/3000 U4 is on

THANKS: Bill Hale, Ed Kroiny, Wayne Heinen, Les Johnson, and MSJ. After a week off to do our NASCAR thing (plus visits with NRC'ers Al Merriman and Dave Marthouse) we are back, and you are now caught up on everything. 73 and Good DX, Jerry Starr & Buffalo K. Fooman

NRC Publications Guide

Available online at <http://nrcdas.org/articles/Publicguide/index.html>, the Guide is a must-study for editors or anyone wishing to publish an article in DX News or write a longer publication for sale via NRC Publications. Can't get online? Send an SASE (#10 envelope, please) to the Publisher (address on the back cover) and request the hard copy. Save yourself time and effort: study the Guide before submitting! We who publish will appreciate it.
KYY's TX San Antonio - 10/16 2115 - C&W oldies with call ID. Weak in phase null of KFEQ. (JTR-OK)

900 KSEV TX Tomball - 10/21 0800 - Poor, in WLW null, with a gardening show, ads, ID. NEW. 700 #7, and Texas #40. (JTR-WI)

910 WFNRA VA Blacksburg - 10/21 0600 - Fair, with station promo, Sporting News. (JTR-WI)

930 WCCO MN Minneapolis - 10/17 1435 - Very weak; daytime DX reception. Only heard on loop antenna. (JTR-OK)

880 CKLQ MB Brandon - 10/20 0747 - Fair, with WCBS nullled, with weather, Country mentions. C&W. (JJR-WI)

900 KFAL MO Fulton - 10/18 2130 - Call ID and C&W music. Heard during fade-in. Big 900 Classic Country, then faded out. (JTR-OK)

940 WMAC GA Macon - 10/20 2034 - Fair, but steady, with many Macon ads. Seldom heard at right. (JTR-WI)

940 KVSH NE Valentine - 10/17 2252 - On top, with C&W music, fading into presumed XEQ at 2254, then mentions of Valentine in weather. 2258 into sign-off announcement. 2290, Heart City Radio logo, to Star Spangled Banner. Must have been using 5 kW power. I can't recall the last time I've heard a sign-off announcement, much less the anthem! (BW-OK)

940 KXTK IA Des Moines - 10/16 0853 - The Big Ticket KXTK slogan into sports talk. (BW-OK)

940 KTON TX Belton - 10/16 0830 - In KVSH phase null mixing with KTEP. You're source of news from a Christian perspective to CL ID. Another new one here. (BW-OK)

940 KTFX TX Texarkana - 10/16 0819 - In KVSH phase null w/CL ID to ads, many mentions of Arkansas and Texarkana Radio. News Talk 940 KTFX semi-ID 0832. New one here. (BW-OK)

960 CFAC AB Calgary - 10/15 2200 - Booming in with sports results on Team Canada Sports Network, and The Team. No top-'o'-hour ID given. (JW-CO)

990 CBWp MN Winnipeg - 10/19 0002 - Presumed, with CBC News, weather for southern Manitoba, classical music program Northern Lights. 0006 mixing w/XET. Do the Canadians ever ID with call letters? (BW-OK)

1000 WPGW NC Black Mountain - 10/21 0732 - Poor, with weather, a dedication and southern gospel music. In, with two to three others including an ID with SS. (JJR-WI)

1030 WSQE TN White Bluff - 10/21 0638 - Fair, no WBZ. Christian Radio Waverly-White Bluff. (JTR-WI)

1030 KTWO WY Casper - 10/20 0245 - Call ID and baseball game. Fair, in loop null of QRM. (JTR-OK)

1050 WTKA MI Ann Arbor - 10/21 0600 - Fair, with ID and sports format in WLIP null. (JTR-WI)

1060 KDUS AZ Tempe - 10/20 2100 - Sports news, call ID, then went to evening weather and signal disappeared. New here. (JTR-OK)

1070 KNX CA Los Angeles - 10/20 2110 - Call ID, traffic reports and political ads. Good signal in phase null of KFDI. (JTR-OK)
This is my last column as DDXD-East editor. Many thanks are due to all of you who read the column and to all who have submitted loggings, address updates, UNID help and station news. When I accepted the editorship I told Paul Sweeney that there were many NRC members who knew a heck of a lot more about DXing than I. But through editing the column and reading your many great letters and e-mails I have learned much. So thanks for the education as well.

1 will remain active in the hobby. I appreciate it, and your loggings appear in this column. If your loggings aren't here, then you missed my announcement on the NRC listserve about the crash and you'll need to send them on to Ginnie.

Ginnie Lupti's e-mail address is <ginnie@nrdxas.org>, or you can send your loggings and other news to Ginnie at 605 Walnut Drive, Clifton Park, N.Y. 12065. Remember—your submissions should be sent to her now; any that I receive will be forwarded to her. Good luck, Ginnie. Now on with the show! (And good luck to you, Michael, and thanks for your...)

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**DDXD-East**

**STATION NEWS**

860 WWDB PA Philadelphia - 10/15-16: Has left OC on past 2000 both evenings of 10/15 and 10/16. Not present before sunrise on 10/16, so at some point they eventually shut it down. (RJE-PA)

730 UNID NC --- 10/16 1910 - Either WFMC or WOH5 running Charlotte Hornets basketball, with ad for Blue Cross/Blue Shield of NC. Both unneeded, but sounded strong enough for day facilities. (RJE*PA)

860 WTLKp NC Taylorsville - 10/19 0635 - Atop CJBC with GOS music program with very rural, older male DJ/preacher, which is standard fare for this one at this time. (RJE*PA)

900 WAYNp NC Rockingham - 10/19 1853 - Heard partial ID along with what I would call MOR music. Closest other similar call would be WAMM, which is REL, so probably this. Wouldn't be new at this location - last heard 1972 in North Jersey. (RJE*PA)

1200 WMIRp SC Atlantic Beach - 10/12 0635-45 - Heard strong Gospel music program here well over WAVE-VA. This is most likely, and a close fit with what they reportedly program style. (RJE*PA)

1570 UNID --- 10/16 1900+ - Station // Southern Gospel format here, mixing it up with the usual group. Not sure who this might be... (RJE-PA)

1660 KXTRp KS Kansas City - 10/19 0300 - Has to be the one with soft classical music, sometimes topping WQON and WMBB. The music spans the top of the hour, so my 09:50 to 00:30 timer tapes haven't caught any IDs yet. (ISP-TN) (They often ID at odd times, after music selections, and not at the top of the hour.)

1180 WJNT MS Pearl - 10/06 0100 - Poor signal in R. Marti null. Morse code ID at 0107. (TFG-FL)

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**DX AND EQUIPMENT TESTS**

Lynn Hollerman writes, "For anyone interested, here's a reminder of upcoming DX tests; if anyone has any additions or corrections, please contact me. (be sure to note the time of the test). Please remember, what's listed as being on, say, Monday may be what you think of as Sunday Night! If you try for (or hear) any of these tests, PLEASE post a message letting me know, and please, drop the station personnel a note, via e-mail or snail mail, thanking them for running the test! Also, for brevity's sake, I didn't post the QSL addresses; if you need these, let me know! Lynn". (tcmember@tcc.com)

1220 WODI VA Brookneal - 11/4 0100-?. (NRC/DXAS). E-mail: wodi@lynchburg.net

1660 WPR1268 MA Leominster - 12/2 0000-0100 - (NRC). E-mail: WPR1268@al.com

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**STATION LOGGINGS**

540 WDMV MD Pocomoke - 9/26 1639 - "Here In My Heart" followed by ID ". . . this is Delmarva's original hits station, WDMV", "Volare" and "Goodnight. My Love" followed by another ID "Playing Nat King Cole, the Kingston Trio and the Fleetwoods, this is Delmarva's original Hits Station, WDMV". (MC*NJ) 680 WCBM MD Baltimore - 9/26 1650 - ID "Don't miss Michael Reagan, weekdays 10 PM to 1 AM—WCBM". Caller complaining about President Bush misspeaking again. Host says he is not articulate. (MC*NJ)

690 WJOX AL Birmingham - 10/19 1908 - Alone atop channel with ID and jingle in sports talk. Usually, takes a good aura to bring this in. (RJE*PA)

WZAP VA Bristol - 10/17 1835 - With C&W and station main-in promo, including ID. (RJE*PA)

730 WPMC NC Goldsboro - 10/15 2110 - Atop, strong with Gospel music, local ads; very strong and likely on day facilities. Some story again 10/16 0635-40, so was probably atop all night. (RJE*PA)

WSCC SC Charleston - 10/19 0630 - Overriding CKAC with BoH announcement as "730, WSC", then into newcast. (RJE*PA)

WPIT PA Pittsburgh - 10/20 1830 - With talk program, then ID as "WPIT Talk Radio 730, Pittsburgh"; appears a format change. (RJE*PA)

740WLTL TN Lenoir City - 10/8 08235 - Fair signal with old C&W format ID at 2240. (TFG-FL)

760 WELFL FL Palm Coast - 10/12 1222 - Fair signal with WLCX nudged. Talk show in progress. This station was previously silent. (TFG-FL)

810 WQIZ SC St. George - 10/8 2300 - Strong signal with partial ID and GOS format. (TFG-FL)

980 WMAC GA Macon - 10/19 0645 - With a roundtable discussion show with callers and guests, male and female hosts, full ID and all sorts of call in numbers; email addresses, fax numbers etc. First time heard here, and with very strong signal. (RJE*PA)

970 WAMD MD Aberdeen - 9/26 1809 - Sang ID "WAMD" followed by "Pied Piper". Another ID "Oldies 97—WAMD" followed by "Venus in Blue Jeans". Another ID "Connie Frances, Ronnie Dove...others sometimes...Oldies 97?" Signal low. (MC*NJ)

1060 WIXC FL Titusville - 10/10 2352 - Strong signal over KKY with OLD format from 60's and 70's. (TFG-FL)

1080 KGIL TX Humble - 10/6 2250 - Strong signal in R. Marti null. Local high school football game. (TFG-FL)

1110 WBCA AL Bay Minette - 10/3 2115 - Strong over WBT with C&W format. Also mention of WYOH 1059. (TFG-FL)

1200 CFGO ON Ottawa - 10/2 0640 - With Sports call-in; ID. (RJE*PA)

1260 WWJQ MT Zeeland - 10/18 0800 - Fair with "Alternative talk radio "1260 WWJQ-AM Zeeland, Holland, Grand Rapids", into SNR news. Must have just powered up to the daytime 10 kilowatts. 1260 1050. (ISP-TN)

1350 WOYK PA York - 10/5 2135 - High school football (West York Bulldogs vs. York Catholic Fighting Irish). Bulldogs bite Irish 10-0; stay undefeated at 6-0. Signal poor. (MC-NJ)

1440 WZFY TN Cowan - 10/12 2230 - Strong signal with local high school football game and local ads for car dealerships and funeral home. Mention of Cowan and Tullahoma. (TFG-FL)

1470 WJDKY MD Salisbury - 9/26 1727 - ID "AM 1470, Radio Disney at 1756, bunch of ads including "Kid of the Month" (Anthony) and Toys 'R Us, then ID "AM 1470 WJDKY Salisbury". (MC*NJ)

1570 WNST MD Towson - 10/11 1920 - Mixing with WISP-PA; WPGM-PA, both with REL, format.
The days are getting shorter, spoons of wire are rattling ominously in my closet, and I have visions of large antlered quadrupeds staring at me in my dreams...must be time to go to Newfoundland! The last deadline before my one week break from IDXD will be Nov 6th, but it would be much better to get your stuff to me sooner...otherwise it will be held until I return.

Another stumper: "It happens once in Rome, twice in a moment, but never in a thousand years". What is it?

**TRAN-S-ATLANTIC DX**

162 FRANCE Radio France Home svc. (p), OCT 13 2338 - Man only in FF. I think this is my 1st ever log of 162 that isn’t “Man and woman talk in & w tx in FF”. Poor. Gone @ 0118 recheck. [Frodge-MI]

198 ICELAND Rikisutvarpid, Iceland (p), OCT 13 2333 - Piano jazz with man and woman announcers. Poor. Gone @ 0118 recheck. [Frodge-MI]

**PAN-AMERICAN DX**

640 MEXICO XEHII Hidalgo del Parral, CHIH, OCT 21 0455 - Spanish, fair signal at times with musical tropical and Radio Uno slogan. QRM from another station in Spanish. KFI nulled. [Knight-CO]

660 MEXICO XEACB Ciudad Delicias, CHIH, OCT 21 0509 - Poor signal with local KLTT-670 spatl., “La Tremenda” slogan, ranchera music. KTNN nulled. [Knight-CO]

666 MEXICO XEYJ Aquascalientes JAL, OCT 20 0451 - Good at times in partial WFAN null with music, “La Cantindita” mentions in highly produced promos. 660 Mexico #3 for me! [Larry-IL]

198 UNID - “660 La Consentida” and “Amor al Mundo” slogans, lots of accordion music. Eric. I’ll one you up this...it is 660 Mexico #4 for me (and I even got KSKY-660 this week for the first time)! [Renfrew-NC]

680 MEXICO UNID, OCT 23 0337 - light music with SS alternating announcers with religious-themed sound. Cite “OK” heard, but nothing else to ID. [Loy-IL]

750 MEXICO XEHI Camargo, OCT 23 0044 (07:50 O-T) ID, poor but clearly readable in mud; in WSB null. [Stewart-MO]

760 MEXICO XEABC Mexico City, OCT 23 0036 - stop frequency with program “A-B-C En La Noche” and frequent “A-B-C Radio” IDs. [Stewart-MO]

770 MEXICO XEBH San Francisco del Oro, CHIH, OCT 22 0414 - Spanish, poor signal, “La Rancherita” slogan, ranchera music. Seem to be on frequency this season (was on 760 last April). No HET noted, anyway. [Knight-CO]

813a CUBA R. Reloj, OCT 22 0425 - Low, but fairly clear audio with news by alternating man/ woman, “Radio Reloj” ID’s every minute, time checks heard, but did not hear the beeps and “RR’s” in codes. This has been reported lately on the East coast. New. [Knight-CO]

820 ST. KITTS & NEVIS - Radio Paradise/Trinity Broadcasting, Charlestown, OCT 13 2326 - no ID, but very likely this is Nevis on a new frequency with US-accented religion. SIO 333. 830 had R. Sensation from Caracas. [Burnell-NF]

VENEZUELA. R. Fe y Alegria, Maracaibo, OCT 3 0700 - Totally in clear with mentions of Maracaibo, then incredibly clear ID by woman, time check, then back to the music. New. [Kenneally-CT]

870 CUBA; R. Reloj, OCT 17 0429 - Way under WHCU-NY and WLL-LA with the frequency uses that slogan. New log for me. [Stewart-MO]
time pits and scraps of audio. Easier to hear with 880 WCRS off. New. [Kennelly-CT]

880 MEXICO XEPNK, Los Mochis, SIN, OCT 24 0315-0405 -Spanish, poor to very good signal with

880 VENEZUELA, R. Paraguana,

900 BARBADOS CBC, Bridgetown,

910 ARGENTINA La Red

960 MEXICO XEK Nuevo

950 CUBA R. Reloj, OCT 22 0436

970 MEXICO XEJ Ciudad Juarez OCT 25 0438 Fair in WMAY null with music, full call ID between

990 MEXICO XEER, Cd.

1030 MEXICO XEYC Ciudad Juarez, CHIH, OCT 22 0345

English AC music, mostly from the mid

explained that “Una en

Superestación”.

mailing address, “Apartado 30-42, ciudad de la Habana,” and web address

www.radioprogreso.cu.

man, then into song that with a lead-in that sounded like a calliope. XEW in strong on 900 at

the same time. New. [Kenneally-CT]

910 ARGENTINA La Red (LS), Buenos Aires, OCT 13 2206 - sports talk, as always, many "en La

Red" mentions; SIO 332. [Burnell-NF]

CUBA R. Reloj, Oct 22 0436 - Woman in Spanish, beep on minute, then "RR" in morse code

which was plainly audible. Local KKPN nulled. [Knight-CO]

960 MEXICO XEK Nuevo Laredo, OCT 23 0436 - Fair but alone with music, "XEK" jingle between

songs. [Loy-IL]

960 MEXICO XEOM Matamoros, OCT 23 0444 - Fair in WMAY null with music, full "X-E-O Radio

Galitto" ID. [Loy-IL]

960 MEXICO XEJ Ciudad Juarez OCT 25 0438 Fair in WMAY null with music, full call ID between

songs, "Eh-kees eh hota." [Loy-IL]

960 MEXICO XETU Tampico, OCT 23 0116 - long spot block during a sports program, but a great

"Radio Tampico" singing ID at 0120. New log here. [Stewart-MO]

960 MEXICO XER, Cd. Cuauhtémoc, CHIH, OCT 24 0433 - Spanish, end of announcement. "Radio

Lobo" jingle by woman, into slow ranchera song, gave call letter ID @0050: "XER, Radio

Lobo... con 5 mil watts de potencia... transmite desde Cuauhtémoc, estado de Chihuahua." New! [Knight-CO]

1010 MEXICO XEVK, Gómez Palacio, DUR, OCT 24 0443 - Spanish, very good peaks with ballads,

ID: "10-10 AM, La Poderosa," ad for "pappas." HET from Amarillo. [Knight-CO]

1030 MEXICO XEYC Ciudad Juarez, CHIH, OCT 22 0345 - Excellent signal way over KTWO in

auroral conditions, choir and opera vocals in Spanish, man and woman talking about Egypt,

then "Radio Fórmula" jingle, mentioned "Primer Cadena Nacional," call letter ID: "XEYC, Ciudad

Juarez @0055. Another station in Spanish way underneath. Into "La Hora Nacional" program @0042. [Knight-CO]

1130 MEXICO XEMOS Hermosillo, SON, OCT 22 0324 - Good and alone with Spanish, lite vocals,

woman gave time check "8:25" over song, then song after song as "Radio Mía," mentioned "Cámara Nacional de la Industria (CIRT)." Gave call letters as "X-E-Mos" @0332. New. [Knight-CO]

1140 MEXICO XESOS Naco, SON, OCT 23 1238 - with nice, clear ID, following XE anthem at odd
time of 1238: "Desde Naco, Sonora, República de México, transmite Radio Uno, XESOS-AM, 1140 kHz, diez mil watts de potencia, cubriendo Agua Prieta, Douglas, Nacoam(?), Sierra Vista, Cananea y todo el norte de Sonora..." The CIRT website has just recently added this station to its
list, although it’s been on the air for a few months, and gives the call as XESOS in Agua Prieta, Sonora. “S” (“esay”) and “F” (“elay”) sound almost identical in S and there’s no way to tell the difference on a DX signal, so half the “XEFOI” reported last week is undoubtedly this station. However, the “Desde Naco, Sonora...” part indicates their City of License is Naco, although I don’t know what the rules are down there: legal ID’s. Naco and Agua Prieta are about only 25 miles apart. I’m going with Naco. [Wilkins-CO]

1140 MEXICO XEMR Monterrey, NL, Oct 23 0830. Heard this throughout the wee hours during bouts of insomnia running REL programs. Don’t know if fulltime REL now or just during the night. Later, at 1200 UTC, heard with a REL program just ending, XF anthem, then full ID at 1202. Good signal but fading, leaving XESOS in auroral conditions. [Wilkins-CO] OCT 24 0430 -Spanish, very good signal with Christian programming, “La M-R, La Chiquita de Monterrey” mentioned, id for Mexican music, song was called “La Nueva Revolución”. [Burnell-NF]

1150 ARGENTINA R. Brigadier López (LT9), Santa Fé, OCT 13 2249 - ads fanfare, "197" ID; SIO 222. [Burnell-NF]

1170 MEXICO XEIX Cabo Rojo, SON, OCT 22 0310 - Fair to good in KVOO null with Spanish, Mexican pop and banda music, “Super Banda de Sonora” slogan. Another Spanish station heard under

the same conditions using “La Nueva Ley” and “La Superestación”. I went to the station web page (http://www.omricho8m.com.mx/cana88.htm) and found that they have a program called “Super Oldies” from 2000 to 2100 local time. Great format! [Knight-CO]

1250 MEXICO XEPL Leon, OCT 23 0255 - Mixing with KFCC (also SS and new music), and “La Poderosa” jingle. New. [Loy-IL]

1280 MEXICO XEW Monterrey OCT 25 0331 then later 0555 Good at times, earlier with “Macrostacion (sp)” slogan and later with call ID. (Loy-IL)

1440 BRAZIL R. Difusora (ZYP792), Maravilha, OCT 14 0151 - in a real mess, but clear ID noted at this time; SIO 222. [Burnell-NF]

1440 URUGUAY station?? OCT 14 0111-0206 - followed for almost an hour, three ID’s as “Montecarlo” and I think one muddy “Radio CORI”. CORI is a network with Montecarlo 930 kHz. (Montevideo) as the flagship. There are two Uruguays on 1440 kHz, R. Rivera and R. Chuy; both of which

max at 3 kW. (In Wirth Chuy is listed as 1440v, what I heard was right on-frequency.) A good friend in Montevideo, Horatio Negro, informed me that, unfortunately, both Rivera and Chuy are members of CORI. [Burnell-NF]

1450 BRAZIL R. Difusora Cristal (ZYH601), Quixerambom, OCT 13 2046 - clear ID (yeah, but then anguish ... something went wrong with the cassette recorder) then romantic music, lost to Ber-

maria for 5 minutes as darkness approached island. Island sound: SIO 333 at peak. [Burnell-NF]

1450 URUGUAY R. Maldonado (CW51), Maldonado, OCT 14 0032 - Clear ID, sports promo; SIO 232. [Burnell-NF]

Jaen speaks: “I also went back to Renewes accompanied by the 7- and 11-year old junior DX’ers (Emily and Christopher) who helped to haul out wire and locate the best blueberry patches. I think I know why I had lost the wire the week before... a large antlered quadruped seems to have walked through it. The wire was pulled some distance through the thick bush, but I did manage to recover it all. I re-erected the southern-pointing antenna. Conditions were very different from my previous visit. African signals were useless. The South Americans were weak and fady. Noth-

ing seemed to be there for long. I did tune initially to SW (7215 kHz) to log the 1

special event station UKE

in your “Beverage Boots”?

(Emily)

(Chris)

Randy speaks: “I also chased a bunch of Spanish signals in the 1400s, particularly on 1430, 1460 and 1470—some may have been Texans. Never got any definite IDs, slogans, city mentions etc.”

INTERNATIONAL NEWS

AFGHANISTAN (target): There is an extra medium wave transmitter on the Commando Solo aircraft, so VOA and Radio Free Europe/Radio Liberty accepted an opportunity to use it for clear recep-

tion in Afghanistan. The frequency is 980 kilohertz. The programming consists of VOA Dari and Pasa-

nese; RFE/RLs; Tajik and Persian. These are combined in two five-hour transmission streams at the same time as the other Commando Solo broadcasts: 030 to 130 and 1230 to 1730 UTC. On 980, no other programming is being mixed with VOA and RFE/RL content, and that channel does not transmit the messages or public service announcements heard on 864 and 1107 kilohertz. BBC Monitoring continues to follow broadcasts on the station UKED/800 in Tashkent, Afghanistan. As of Fri-

day, the Taleban’s Radio Voice of Shari’ah in the

city of Mazar e-Sharif, close to where Northern Alliance and Taleban forces are fighting, was still

on the air on 1584 kilohertz. The domestic and
Welcome to another edition of Target DX! This time, we have questions on a variety of topics, along with some websites to add to last time's list.

Q – What is this EWE antenna I keep reading about?
A – The EWE is named using the English word which reflects the letter whose shape the antenna takes – "U". The EWE antenna is directional off the end at the coax. The EWE that runs NE is directional to the SW. Basically the EWE is two phased verticals. That is, the two vertical elements with the lead across the top that connects them. The termination at the end is adjustable to get the directivity the way you want it.

With the EWE there is phasing going on, much like a broadcast station array. The far grounded end 20-foot vertical section is fed at the top, in a sense by the 100-foot horizontal wire. The near end vertical section, which is also 20 feet long, is fed at the bottom by coax. The 100 foot spacing between the two 20 foot vertical sections and top/bottom feedpoints create a 180 degree out of phase current lag which creates an endfire unidirectional receive pattern from the coax feed end, versus the resistor end on a terminated Beverage. Unlike the Beverage antenna, the EWE needs a good ground conductivity under it to work properly (gain and directionalität); and you can't really fix the problem with radials. It would play well on the Great Plains and near the ocean but lousy in the desert and mountains.

Q – What exactly is a 'sloper' and how does it work?
A – The conventional 1/4 wave sloper will have a sloping wire to ground with an approximated 45 degree angle drop down to near ground level. The center conductor of the coax goes to this sloping wire, the braid of the coax goes to a metal tower, therefore you have an elevated feedpoint. Unlike the Beverage antenna, the EWE needs a good ground conductivity under it to work properly (gain and directionalität). The antenna is kind of like a dipole but with the radiating elements to close together. What happens with this antenna is that the metal tower receives a vertical omnidirectional signal and the sloping wire a mix of vertical and horizontal radiation in the direction of the wire slope. Combine them and you get slightly off omnidirectional radiation/reception, with a 1-2 db gain in the direction of the slope of the wire. Modeling results predict 4-6 db gain in the direction of the sloping wire, but this is hard to attain, as this antenna is very sensitive to surrounding objects and poor rf ground connections in the tower sections. A sloper can be had without using a tower, or even a metal structure at all. If a tree of sufficient size is present, the coax can be run up the tree to the point where the diagonal elements meet down. Performance may suffer a little, but those DXers who use this kind of installation don't seem to complain much!

Q – I recently purchased a DX-398 from Radio Shack after seeing all of the positive discussion on it in DXN. The problem I have is that I seem to be replacing batteries very frequently. Any advice on how to increase battery life, or some other alternative to use for truly portable and/or remote use?
A – The DX-398 is a battery-killer! You can build a backup system using D-cells as follows. Parts are readily available at Radio Shack for a couple of dollars or so for each part.

Here's what you need:
- 1 p/p 270-1746 power cord $2.99
- 1 p/p 270-1739 4 D cell holder $1.79
- 1 p/p 273-1716 "M" adaptplug $1.99
[check to make sure this is the right one]
- 1 - 2 inch piece of solder
Electrical tape to wrap solder joints.

The power cord is cut. You can make it as long as you want. The thing has two adaptaplug ends. Fold the wire in half and strip it. Then strip and tin the ends of the wire. Take the end of the white stripe wire from the power cord and solder it to red [-] side of the battery holder. Then take the black wire from, the battery holder [-] and solder it to the black wire of the power cord. Then wrap the exposed wires with electrical tape. Put the tip as negative and plug it in. When the plug is in, the backlight on the LCD stays on and you can see the thing at night. The DX-398 shunts the battery off after about 2 minutes to save the precious power from the AAs.
Q – I’ve noted several occasions over the past few months where various sources cite recent solar activity and predict auroral conditions, but the result is either nothing out of the ordinary or minimal or short-lived or both. What gives here?

A – There are likely several factors. First, not every solar flare or other solar explosion is directed in the earth’s direction, and even though one is projected to affect us, not all do. Second, depending on how strong the forces are when they impact the earth’s magnetic field, there may not be a reaction or short-lived or both. What gives here is that even a relatively small or moderate size may not be enough. A further indicator is the Proton Flux value. A solar flare needs to send the proton flux at or above 10 mev’s for the D layer to absorb broadcast band signals at night.

Another indicator is the status of the earth’s geomagnetic field as per the WWV broadcasts or various government or hobby websites. If there is a major storm indicated as in progress and continuing over a period of 2-3 days, then auroral conditions are more likely to follow.

Here are some additional websites which didn’t appear in the listing in the most recent column:

List of Cuban Stations: [http://davidtanny.8m.com/03facu.htm]
Charts of the last 20 solar cycles: [http://www.ddc.com/solar/cycl1_20.htm]
Great Circle Distance calculator: [http://jan.ucc.nau.edu/~craa/gatlongdist.html]
Propagation: [http://www.ddc.com/solar/]

The editor would like to thank the following members for their questions, comments, answers and discussion on the NRC/DXAS Email list which was used in the preparation of this column: EWE Antenna: Thomas Giella, Patrick Martin; Sloper: Thomas Giella, Bruce Conti; DX-398 mod: Kevin Redding; Propagation: Thomas Giella, Chuck Hutton.

Please remember to keep sending me your questions or your suggestions for future topic-oriented columns to me either via email, or by regular mail!

CPC DX Tests: An Historic Perspective
By Bruce Conti

Some might believe that the lack of CPC-arranged DX tests are a recent phenomenon. The current drought can be attributed to corporate ownership of multiple stations in each market resulting in contract engineering and 24/7 broadcasting.

I recently came across a column written by Carleton Lord in the May 1938 edition of Radex magazine in which he laments a decrease in the number of DX tests.

“It was not unusual for a club to boast of from five hundred to a thousand programs in a winter season,” wrote Carleton. One of his concerns was the negative impact of the competition between DX clubs to schedule the most tests, resulting in too many unneeded tests and lackluster interest from DXers. Quality versus quantity was the call; “Let the primary objective of a CPC be to provide programs which DXers needed for verification purposes, and go easy on the idea of repeated dedications from the same stations.”

In the following, Carleton refers to the criticism of the DX club competition for program sponsorship, but also mentions another issue that might seem too familiar. “More recently CPC activities have slackened off. Whether as the result of past criticism or for other reasons, the radio clubs are listing fewer dedicatory programs than at any time in the past six or seven years. The current season will probably hit a new low in the total number of broadcasts scheduled by the various organizations.

“Perhaps CPCers are finding it increasingly difficult to persuade stations to come back on the air after midnights for a special program. It is not unlikely that many broadcasters have become discouraged by the poor response to previous specials, while others glance at the line-up of all-nighters and decide that it is impossible to get out to an appreciable audience.” (Lord, Carleton. “The Monthly DX Forum.” Radex, May 1938. p. 7)

No doubt that the NRC and IRCA CPCs have their work cut out for them. While both clubs now try to make it a cooperative effort, it’s interesting to know that all-nighters were considered a problem in 1938 as well as today.

---

Polar Bear Expedition nets DX, too
By John Sampson

In early October, we traveled to Churchill, Manitoba, primarily to see polar bears. I took the radio along and was able to do a little listening. We took the train from Winnipeg to Churchill (two nights and a day), were in Churchill for three nights and four days, and then flew back to Winnipeg. We did see several polar bears along with quite a bit of other wildlife. Earlier this summer, a couple of people expressed interest on what could be heard in Churchill; here it is (and it’s rather long!)

Noted on train:
I did a little listening on the train; had to hold the ax up to the window to do so.

Near The Pas (Friday, Oct 5)
We reached the area of The Pas about 9 AM in the morning. At that time, CJAR (1240) noted in parallel with CFAR, 590 (Flin Flon). A while later, CJAR had separate programming. When the two were in parallel, the common ID was CFAR, 590 and CJ1240. When separate, CJAR used the CJ1240 ID (I never did hear a full call letter ID). CFAR was also quite strong in that area and it was actually audible for a longer time than CJAR (not surprising, given it’s dial position). All programming I heard seemed to be local.

Near Thompson (Friday, Oct 5):
In the afternoon, CHTM noted with rock music and full call letter IDs. Later that night, it seemed to be programming C&W. As with CFAR and CJAR, it all seemed to be local programming.

Churchill:
During the day, the only station audible was CHPC (1230). I never was able to hear a local ID; it seemed to relay CBW for the most part, used the CBC, Radio and had an extremely clean signal. The only local ID heard was a weather forecast for Northern Manitoba one morning, which got cut off to go back to CBC programming just as they were to announce the Churchill temperature.

On the night of Saturday, Oct 6 (and into Sunday, Oct 7), I was able to do a bit of late evening/early morning listening and heard the following. All of this is between 11 PM and midnight (times referenced are Eastern Daylight Time) Saturday evening unless otherwise noted:

540
CBK
SA
Watrous - not very strong but clearly audible

550
KEYR
ND
Bismarck - fairly strong

570
CKSW
SA
Swift Current - this is a tentative but heard several mentions of Saskatchewan and is in the arc of reception

580
CKY
MB
Winnipeg - probably the strongest non local station on the dial

600
CJWW
SA
Saskatoon - Again, a tentative; C&W programming but I don't think it was KJLB, Jamestown

610
KDAL
MN
Duluth - Heard about 4 AM w/good signal; no sign of CHTM

620
CKCK
SA
Regina - Fairly good signal

660
KEYZ
ND
Williston - One of the strongest signals heard that night (this station also was CKY)

680
CJOB
MB
Winnipeg - Very strong; a close second to CKY

710
WDSM
WI
Superior - A surprise; the most easily station I heard (interesting that I heard this and KDAL but not WDSM, 560)

730
CKDM
MB
Dauphin - fairly strong

740
CBX
AB
Edmonton - This was a surprise; no sign of CHWO

750
CJVR
SA
Melfort - Fairly strong

770
UNID
probably KATL, Miles City

790
UNID
either Billings or Fargo (probably Billings)

820
UnID with C&W music; heard about the same time as WOAI so, probably WBAP, not around very long

830
WCCO
MN
Minneapolis - Surprisingly strong

880
CKLQ
MB
Brandon - Good

910
CKDQ
AB
Drumheller - A strong signal

940
CGX
SA
Yorkton - Audible, but not as strong as I would expect

950
CFAM
MB
Altona - A good signal
Manitoba, Saskatchewan and Alberta and US points south of there. The only stations east of this arc that I heard were the ones in the Twin Cities, KKAA, KDAL and WDSM. Stations noteworthy by their mentioned often. It was fun to finally see it.

CBW gave messages to people in far northern Manitoba, and I can remember the town of could be a bit more powerful. I'd like to try it up here with the Collins and a good loop (at least on nights with no aurora).

And used to send in some fascinating loggings. I wish I'd saved those Member (Morris Sorensen, I believe) lived in northern Manitoba (God's Narrows) for several years, the curl; when it's good, it's very, very good and when it's bad, it's horrid. I remember that an NRC Galaxy DXers Shoot-Out at East Harwich

**By Mark Connelly**

The most popular antennas among medium wave DXers are loops of a relatively compact size. These are often ferrite-rod based in the case of the Quantum models from RadioPlus (Gerry Thomas) as well as the Worcester Space Magnet and loops made by Palomar. Radio West, McKay-Dymek, and others. Compact air-core loops ("frame aerials" in older parlance) can be considered those under 50 cm / 20" diameter (round) or per side (square). The Kiwa Loop, considered by many as the best commercially-available medium wave loop, is a compact air-core design with a coil diameter of about 33 cm / 13".

Note that, in all the cases above, the loop head is relatively small and, therefore, a good deal of amplifier gain is required. This differentiates these loops from much larger ones that can operate passively through a coupling coil or ones that need only a slight boost from a low gain amplifier, such as one of Dallas Lankford's, having superlative noise-figure and intermodulation rejection performance.

Since many of us can't manage a bulking behemoth of a loop in our shacks, models such as the Quantum and the Kiwa have enjoyed a great deal of popularity.

High amplification, a "necessary evil" with physically-small antennas, has two principal limitations.

The first limitation, and with high-Q tuned circuits the more important, is noise floor. One cannot judge a high-impedance FET loop amplifier noise floor in a non-peaked condition. The LC-tank formed by the loop head coil and the tuning capacitor must be tuned to resonance (peaked) on an unoccupied frequency during non-skip midday conditions at a very electrically-quiet location. The ideal noise floor test site would be in an RF-shielded "screen room" of the type used by professional testing laboratories. Once the S-meter reading of amplifier noise at a given frequency is known, the weakest usable signal level can be estimated as being about 6 dB (or one S-unit) above this level. Anything weaker (at least AM signals) will not have recoverable audio and will only be detectable as a CW note or "het" against the receiver's BFO.

The second limitation of amplifiers is inadequate strong signal handling ability. Excessive input to the amplifier will cause harmonics to be generated. If two or more strong signal frequencies are present, mixing products can result, possibly covering up weaker "real" signals on the intermodulation distortion (IMD) frequencies. Except at the worst urban sites, this isn't too much of a problem with high-Q tuned loops properly peaked at the desired frequency.

The evaluations in this article concentrate mostly on weak-signal sensitivity and on overall gain. Urban DXers should probably stick to passive loops, possibly followed by a second stage of tuned preselection (and/or a wavetrap notch filter to weaken the strongest local signal).

My home location in Billerica, MA often has too much electrical noise to permit serious low noise testing. I am fortunate to have the occasional use of a relative's house in East Harwich, MA on Cape Cod. RF noise is usually very low at this site since electrical power is delivered via underground conduits instead of overhead wires. This low noise environment and fairly close proximity (2-3 km) to the ocean mean that long-distance medium wave and longwave signals can be heard, even during the daytime.

The 2250 km / 1400 mile distant groundwave of Radio Vision Cristiana (Turks and Caicos) on 530 kHz makes a good sensitivity test target. The car radio just gets a carrier at its noise threshold, but on my Drake R8A with a 30 m sloper from the top of a pine tree to the house, I get an S7 signal with readable audio (internal R8A preamp on; sloper to high-impedance receiver input).

The quietest daytime noise field on an open frequency when using the sloper is about S1 to S2. This is a combination of R8A built-in preamp noise and residual external "band noise" captured by the sloper. This is approximately equal to a -130 dBm signal level.

Active loops will have considerably higher open-channel peaked noise levels. The true measure of interest is how much capture the loop's head has on very weak signals to push these signals over the amplifier's hiss. In the realm of signal audibility, a loop with a noise floor at S3 and a given weak signal reaching S4 is the same as a loop with a noise floor of S8 and the signal at S9. The only advantage the higher gain loop would have would be when operating into insensitive receivers (where an S4 "good receiver" signal would be down in the mud).

The Kiwa and Quantum Loops are pretty much state-of-the-art in squeezing weak signals out of a relatively small head.
Their amplifiers are well-designed but still the overall packages are not going to be able to retrieve superweak signals that could be heard with a considerably larger loop or, for that matter, a properly-matched wire antenna of 30 m length or greater.

Test data that follow focus on these attributes:

1. Weak Signal to Noise (Sensitivity) Evaluation (particularly important with good receivers)
2. S-Meter Gain (of primary interest with less sensitive receivers)

The Quantum Loop was tested with three different head types. These are:
- Normal head: plastic enclosure length = 8.5/30 \( \times \) 21.6 cm
- QX Pro head: plastic enclosure length = 17/43.2 cm
- Large head (a prototype that Gerry made about 10 years ago): plastic enclosure length = 19/43.2 cm

The QX Pro head covers longwave and medium wave (as selected by a switch). The longwave setting was used for medium wave tests below 650 kHz. Using the LW rather than the MW setting increases sensitivity about 3 dB on the low end of the broadcast band. I did minimal testing; basically I just verified that the QX Pro does operate reasonably well down to 150 kHz and possibly lower. Numerous US and Canadian aerobeacons could be logged at any time. In the evening European and African LW broadcasters were easily heard.

An old Quantum Loop was compared to the newer QX base. The older base had slightly higher noise floor and slightly higher gain; the net difference in usable sensitivity was negligible.

Quantum Loop measurements that follow are for the present QX / QX Pro base.

Regeneration on both the Kiwa and Quantum Loops raised both signal and noise floor about 20 dB (before oscillation) versus the non-regen. condition. Regeneration did not improve or reduce actual signal-to-noise ratio to any noticeable extent. The chief value of regeneration is to improve upon the receiver’s IF filtering by giving, in essence, continuously-variable bandwidth.

Cheaper receivers benefit more from this than do the better tabletop communications receivers.

MA (GC Preamp On.

Kiw a QX Normal head

QX Pro head

Table 1: Noise Floor

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Meter reading</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiwa</td>
<td>S-5.5</td>
<td></td>
</tr>
<tr>
<td>QX / QX Pro</td>
<td>S-8</td>
<td>with any head used</td>
</tr>
<tr>
<td>sloper</td>
<td>S-2</td>
<td>30 m, to RBA high-Z in</td>
</tr>
</tbody>
</table>

Table 2: Signal dB above Noise Floor: five weaker stations selected

<table>
<thead>
<tr>
<th>Antenna</th>
<th>R.V.C. - 520 over TIS'S</th>
<th>WLUX/WDMV - 540 over CBT</th>
<th>CHTN - 720</th>
<th>CBA - 1070</th>
<th>Logan Airport TIS - 1650 over WHK 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiwa</td>
<td>4+</td>
<td>13+</td>
<td>14+</td>
<td>3+</td>
<td>8+</td>
</tr>
<tr>
<td>QX Normal head</td>
<td>+4</td>
<td>+13</td>
<td>+15</td>
<td>+15</td>
<td>+10</td>
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<tr>
<td>QX Pro head</td>
<td>+3</td>
<td>+14</td>
<td>+17</td>
<td>+9</td>
<td>+6</td>
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<tr>
<td>QX Large head</td>
<td>+5</td>
<td>+16</td>
<td>+20</td>
<td>+12</td>
<td>+10</td>
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<tr>
<td>sloper</td>
<td>+30</td>
<td>+36</td>
<td>+40</td>
<td>+33</td>
<td>+36</td>
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</tbody>
</table>

$ = $below noise

Section 1: Weak Signal to Noise (Sensitivity) Evaluation

Table 3: Strength of some Moderate to Good Signals on the Kiwa Loop

<table>
<thead>
<tr>
<th>Antenna</th>
<th>WEZE - 590</th>
<th>WBZ - 1030</th>
<th>WBAE - 1490 (over WHAV)</th>
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<tr>
<td>Kiwa</td>
<td>S-9 + 30</td>
<td>S-9 + 28</td>
<td>S-8</td>
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Table 4: Differences (dB) in Gain from Kiwa

<table>
<thead>
<tr>
<th>Antenna</th>
<th>WEZE - 590</th>
<th>WBZ - 1030</th>
<th>WBAE - 1490 (over WHAV)</th>
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<tr>
<td>QX Normal head</td>
<td>+9</td>
<td>+11</td>
<td>+9</td>
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<td>QX Pro head</td>
<td>+14</td>
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<td>QX Large head</td>
<td>+16</td>
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<td>+14</td>
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<tr>
<td>sloper</td>
<td>0</td>
<td>-4</td>
<td>+6</td>
</tr>
<tr>
<td>MFJ-1024 Whip</td>
<td>4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>1.8 m per side broadband loop with ALA-1530 amplifier</td>
<td>data not recorded</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusions and Additional Comments

In terms of weak medium wave station signal to noise (sensitivity), the ranking of the loops tested (best to worst) is as follows:
1. Quantum QX with Large (17") head
2. Kiwa Loop
3. Quantum QX with QX Pro (15") head
4. Quantum QX with Normal (8.5") head

The differences between #1 and #2 or between #2 and #3 of the above list were very slight and would not make any difference in 99% of listening situations. The Quantum QX with the Normal head is a bit lower in signal-to-noise sensitivity (4 to 8 dB) than the front-runners, but it is still very capable for its size.

The Kiwa Loop has less "raw output" than the Quantum models, but unless you’re using a mediocre receiver, it’s signal to loop-amp noise that matters. In that department, as noted above, it’s a very close horse race. The Kiwa is varactor-tuned; the Quantums are tuned with a conventional variable capacitor. That the Kiwa has very good weak-signal pick-up indicates that speculations about varactors introducing objectionable noise seem unfounded.

The Kiwa has some advantages in terms of the head unit being separate from the control base (you’d put the head in a window or in a balcony if in a hotel, for instance), more precise rotation and tilting for nulls, and a fine-tuning control that’s particularly worthwhile when using regeneration.

An important advantage of the Quantum QX Pro is that it can be used on longwave as well as on medium wave. Also, the QX Pro head has an input for an external wire antenna. This can be useful in transforming the loop into a regeneration-capable tunable preselector for longwires. This is often done when the loop itself cannot be used because it’s located in a vehicle, mobile home, or steel-framed commercial building.

The "East Harwich Loop Shoot-Out" showed, the Kiwa and Quantum loops are worthy "power tools" for the avid DXer. Prospective purchasers will do well to consider how the features, size, price, and performance specifications all interact to determine the wisest choice.

Kiwa Loop information: (web) http://kiwa.com/

Quantum Loop information: (e-mail) radioplus@pcola.gulf.net; (web) www.dx-tools.com

SECTION 2: Gain Evaluation

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Here's another batch of college football networks for the current season. Please forward any network lists you may have access to that can publish, or even web sites you know of that include lists. Or, let me know what network you're interested in and we'll try to find it.

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UCLA BRUINS
USC
WASHINGTON STATE COUGARS

SOUTHEASTERN CONFERENCE

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ARKANSAS RAZORBACKS (http://www.katv.com/arsn/index2html)

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dcbraun@delanet.com
863 Allabands Mill Rd.
Camden Wyoming DE 19934-2132

It may not be perfect... but the NRC AM Log is, simply, the best there is because of your contributions. Why not make the next edition even better? Send all corrections and changes to Wayne Heinen - 4131 S. Andes Way - Aurora, CO 80013-3831, or arclog@aol.com. Thanks!

COUNTY CROSS REFERENCE

What a time to be a complete list of counties, parishes, and similar political divisions in the U.S. and Canada. Two lists are included: alpha by county, and by state. Compiled by Bill Hale and designed and produced by Wayne and Joan Heinen. $7.50 for members, $10.95, non-member. Order "CCR" from the NRC Publications center; NY residents, please include sales tax.

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**LOUISIANA STATE TIGERS**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

**MISSISSIPPI**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

**SUMMARY**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

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<th>Date</th>
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**Overview**

- **GEO** - Geomagnetic activity
- **SA** - Solar Activity
- **pcp** - Polar cap absorption
- **spe** - Satellite proton event
- **ss** - Severe storm

**Summary**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

**Mississippi**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

**Radio Affiliates**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

**Summary**

Larry Munson, Scott Howard, Loran Smith, Neil Williamson

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