

DX NEWS

The magazine of the National Radio Club

--- SINCE 1933 ---

Volume 57, No. 5 - Monday, Nov. 6, 1989 (ISSN 0737-1659)

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DX test ...

WYST-1010, Baltimore, MD is conducting a DX test for the NRC on Monday, November 6, 1989 from 0330 to 0400 ELT, at 1000 watts non-directional. Send reports, and return postage, to Mr. Dan O'Neil, Program Director, WYST-AM - 1111 Park Ave., "The Penthouse" - Baltimore, MD 21201. Test arranged by Bob Harrison and the Colorado CPC Machine.

From the Editor ...

Your editor has egg on his face. I announced that I had a certain station on tape a couple of weeks ago, remember? Well, not only do I not have that station, I seem to have lost several others as well. Seems that the venerable Sony TC-355 has finally given up the ghost after serving my brother and me well for 20 years. Even though it still transports tapes, it no longer records or plays. Although I have an equally ancient Wollensak (and other semi-junkers) as backup, I'll miss the Sony (not to mention the DX that I thought I taped.)!

John Malicky didn't let any grass grow under him after leaving Topeka last month. John has confirmed the Greentree Marriott in Pittsburgh as the 1990 convention hotel. Although the deadline for reservation is August 10, you may want to reserve now by calling (412) 922-8400, mentioning the NRC for special rates, which include a single for \$48. The Marriott features tennis courts, pool, whirlpool, two clubs, etc.

DECALCOMANIA ... All requests for club sample bulletins and all other inquiries should now go to Mark Strickert - 3852 N. Oconto - Chicago, IL 60634. The club has just published two hobby reference materials: *Aircheck Arcade* (covering the tape-trading and collecting hobby) for \$3.75 in the U. S., \$4.00 to Canada/Mexico, and *Care*

and Feeding of a Promo Collection (tips on starting and building a collection) for \$3.25 U.S., \$3.50 to Canada/Mexico.

Catalog... Universal Radio's Book Bonanza is on through December 15, featuring free "bonus books" with your order. Fred Osterman's Shortwave Receivers, Past and Present is reduced to \$5.89 from \$6.95, for example. For more information, write to 1280 Aida Drive - Reynoldsburg, OH 43068.

For Editors ... Don't forget to indicate what computer hardware/software you are currently using as you send in your columns. If you're using a typewriter, indicate so. I'm attempting to gather enough data so that I can make some compatibility decisions in the near future.

DX Time Machine From the pages of DX News

Twenty-five years ago ... from the Oct. 31, 1964 DX News: Low-bandTA's/TP's listed in John Callarman's IDXD: RV162-548 Vladivostok (Wilkinson, CA); Khabarovsk-629 (Wilkinson), 4QN-630 Townsville, Australia (Wilkinson), R. Pyongyang-635, N. Korea (Wilkinson), CSA2-665, Lisbon, Portugal (Conrad, KY); JOBK-670 Osaka (Wilkinson); RNE Sevilla-684, Spain (Conrad); RTM Sebaa-Aioun-701, Morocco (Conrad); RNE Barcelona-737, Spain (Conrad); JOIB-750 Sapporo, Japan (Wilkinson).

Ten years ago ... from the Nov. 19, 1979 DXN: Wayne Heinen volunteered to take over the "Verification Game" column ... Low-band TA's/TP's listed in Chuck Hutton's IDXD: Oran-549 Algeria (Connelly, MA); Tullamore-567 Ireland (Foxworth, NY); HLKF-567 Jeonju, South Korea (Wilkinson); USSR-576 (Wilkinson); USSR-585 (Wilkinson); Sebaa-Aioun-612 Morocco (Connelly); Drasna-639-Fiji (Vernon, YU); KORL-650 Hawaii (Toebe, NV); 2YC-657 Wellington, New Zealand (Wilkinson); Murmansk-657 USSR (Vernon); R. Noumea-666 New Caledonia (Wilkinson); Vilnius/Krasnodar-666 USSR (Vernon); 2BL-702 Sydney, Australia (Wayslik, MB); Norte-719 Portugal (Connelly); Barcelona-738 Spain (Connelly); 4QS-747 Toowoomba, Australia.

M Switch

Jerry Starr

c/o WHOT Radio 4040 Simon Road Youngstown, OH 44512-1320

the FCC Call Bureau continues to

commit wholesale errors. This time

Status changes in AM stations, supplied by the FCC and NRC members

CALL	LETTER	CHANGES

CALL LISTING CHARGES											
01d call:				New call:		01d call:			New call:		
	810	KWWS	CO	Rifle	KKGD	1460	KKCS	CO	Colorado Springs	KWES	
	1080	KLRS	CA	Santa Cruz	KSCO	1550	KOZR	CA	Apple Valley	KITH	
	1130	WWMO	NC	Eden	WEDE		KISK	NV	Reno	KXTO	
	1290	WFIG	SC	Sumter	WQMC	1570	WBEE	$_{ m IL}$	Harvey	WMNN	
	1300	WSSG	NC	Goldsboro	WFIN		CKTA	AB	Taber	CFUZ	
	1330	KSJN	MN	Minneapolis	KNOW	1580	WJTX	ΊL	Urbana	WBCP	
	1360	KRFI	MO	Mountain Grove	KCMG		KNUS	NM	Albuquerque	KZTL	
	1400	WSME	NC	Raeford	WHIL						
	1450	WPIG	NY	Rome	WFRG	Notes	on ca	11s:	Here we go aga	in,	

WZAC

they appear to have "assigned" calls to a number of stations which have not requested a change! With the help of our friend Bob at M Street Journal, the bogus calls have been weeded out from the above and the FCC has promised to issue a "correction" but we mention this for members who may see changes listed in other sources (such as Broadcasting) that are not listed here. It will be interesting to see how the Commission explains this latest snafu.

APPLICATIONS / GRANTS FOR NEW STATIONS

None

APPLICATIONS FROM EXISTING FACILITIES **ΔM • 14**

-CP- VA Cloverdale: reduce day power to 500 watts (no call assigned yet)

GRANTS TO EXISTING FACILITIES

WWBB WV Madison

550 WICE RI Pawtucket: powers to 5000/3400, antenna to U4

880 KUTE CA Desert Hot Springs: powers to 3000/900, antenna to U4

OTHERNESS

830 WEDE NC Eden: although station is still on 1130 kHz, they have been broadcasting with the new 830 kHz facility on FRIDAY NIGHTS ONLY to carry high school football. According to the station they are doing this to facilitate field intensity measurements and fulltime operation on 830 kHz will commence "soon"

WOPA IL station still appears to be testing on the air but regular programming has not yet begun, may set some sort of record for the longest testing period

1230 KRSS WA Spokane: station is SILENT

THANKS for contributions go to: EUGENE HINTON, ED KREJNY and ED ROBINSON!

73 and Good DX, Suny & RKF Jerry Starr & Buffalo K. Foonman

John S. Bowker, Valparaiso, IN

Only one city in the United States has stations operating at the five dial positions shown below. Of course, there may be other stations in this city too! Can you snot the city?

-10, to	,	•			
		1			
		830	980	1130	

Here is a hint; it is one of these: New York, Albuquerque, Minneapolis-St. Paul (The enswer will appear at the end of the next City Quiz in DX News.) The answer to City Quiz #36 Sacramento

Domestic DX Digest - Bast

William Hale

734 Burleson San Marcos, TX 78666

DX Catches in the Eastern U. S. and Canada, with 24-hr. ELT

MEDIUM WAVE rAMblings

- Only six reporters this time. Let's give these guys some help and report YOUR DX. With snow in the upper Midwest and Northeast, the temps are in your favor for some good catches.
- I've had to 'deep six' several reported loggings due to their being too old according to our rules. Remember to get your DX in a timely manner so it doesn't exceed 30 days old by the date I type it up. And remember, the deadline here is the Masthead date (see Issue 29 + others for schedule) minus 16 days. Let's get on with it...

- CJFT ON FT ERIE 10/16 0559 good with In the car or in the office, we'll keep you entertained & informed on new adult sound for Lake? Ontario & Western NY, AM-530, CJFT÷local nx, wx & sports, then BBD mx (SA-MB)
- 1340 WBCR PA WILKES-BARRE - 10/4 1800 noter on with REL programmingHWSCR-1320 Scranton; gives dual ID @ :00; does not seem to originate any programming in Wilkes-Barre (HJH-PA)
- 1550 WORI TN OAK RIDGE 10/4 0700 fair with ID; is back on the air after being silent (RK-IL)

UNIDS AND UNIDS IDd

- UNID ?? - 10/16 0530 very poor with pieces of Latin American mx; faded after about 7 minutes (SA-MB)
- 690 KOAQ NE TERRYTOWN 10/7 0728 my unID of 8/1 (Issue 30); weak but alone after CBF fadeout; hrd with 60s OLD (Hollies, Beatles) followed by non-ID: Oldies 690, KOAQ; Log sez daytime only, but '89 Broadcasting Yearbook shows a nite power of 64 watts; my 1st Mountain time catch running less than 250 watts (CR-ON)
- 730 UNID ?? - 9/16 2138 weak with Louisiana State vs Florida State FB on the LSU Sports Network (RD-IA)
- UNID ?? - 10/16 0706 poor with instrumental mx (EZL) under CHAM; looped ESE (SA-MB)
- UNID ?? 900 - 9/16 2213 fair → good with Alabama A&M FB (RD-IA)

DX/EQUIPMENT TESTS

- 560 WHND MI MONROE 10/12 2203-2230 on after sign-off to test XR & \$tereo exciter; next morning back on in \$, 1st time since system crashed on 6/30; in \$ only during full daytime power; this test is a followup to one in early September; PD Richard Haase told me that engineers were brought in from Greater Media to solve distortion & coverage problems due to \$ (JL-OH)
- 1410 WHLN KY HARLAN 10/3 0400-0405 fair + good with FC (TTs & 0505 ID: This is WHLN, Harlan, Kentucky) (RD-IA)

TIS & OTHER

- 530 CFHS ON FT FRANCES 10/16 0540 poor with TIS info for crossing border & what to do in Ft Frances: IDs as: Ft Frances Radio (SA-MB)
 - ON NORTH BAY 10/16 0540 poor with 'NB' CW beacon + tone; under CFHS (SA-MB)

MIDNIGHT TO MIDDAY

1600AM

SK WATROUS - 10/2 0308 very good with sign-off (RD-IA) 540 CBK SD YANKTON - 10/9 0115 good with sign-off and 0545 fair with sign-on 570 WNAX

(RD-IA) MB WINNIPEG - 10/9 0357 fair under WIBW with TC, wx & 58 CKY+Rod 580 Stewart's Forever Young (RD-IA)

630 WINNIPEG - 10/9 0443 fair with Country Club by Travis Trent + IDYou're enjoying a weekend in the country with more hit music on 630 CKRC (RD-TA)

1500 WTOP DC WASHINGTON - 10/15 0701 fair with ad for financial planning magazine+nx before fading+mess (JL-OH) 1510 WWHN IL JOLIET - 10/13 0700 fair with sign-on (RK-IL) PA MONROEVILLE - 10/12 0700 briefly on top with sign-on (RK-IL) $\omega x \vee x$ CKOT ON TILLONSBURG - 10/13 0745 fair+good with O Canada & sign-on (RK-IL) 1520 KSIB IA CRESTON - 9/30 0759 fair with sign-on under KOMA (RD-IA) WWKB NY BUFFALO - 10/14 0647 fair with Business Radio 1520, wx for Buffalo; faded B4 ID heard; is there a CL change? [Nope-Ed.] (SA-MB) OH KENT - 10/19 0800 fair+poor with ID (RK-IL) 1530 KNBO TX NEW BOSTON - 10/8 0701 fair with sign-on (RD-IA) WMBE WI CHILTON - 10/14 0713 fair with EZL mx; slogan: Good time radio, WMBE; under WCKY; new & WI #62 (SA-MB) 1550 KBLK OK SAPULPA - 10/6 0214 good, but fadey with REL mx & FM 101 KXOJ non-IDs; no AM CLs ever heard on this one over several nights, even on the hour (RK-IL) CRE ON WINDSOR - 10/9 0111 fair with sign-off (RD-IA) 1560 KLNG IA COUNCIL BLUFFS - 9/30 0559 very good with sign-on (RD-IA) 1570 KLOV CO LAKELAND - 10/17 0850 fair with BBD/EZL mx, several local ads for Colorado 6 Loveland; new & CO #49 (SA-MB) WBGZ IL ALTON - 10/9 0557 fair with sign-on (RD-IA) WFUR MI GRAND RAPIDS - 10/8 0559 fair with sign-on (RD-IA) KYCR MN GOLDEN VALLEY - 10/11 0843 good with phone-in contest; 15th caller @ 546-5478 wins tickets to a Michael W. Smith (who's he?) concert & chance to win a trip; contest described as Another gift of love from your Christian Connection, KYCR (CR-ON) WMYM WI MINOCQUA - 10/14 0737 fair with BBD/EZL mx, much of it from 40's; SID (SA-MB) 1580 KFDF AR VAN BUREN - 9/29 0701 fair with sign-on (RD-IA) MD MORNINGSIDE - 10/15 0715 good with sign-on, ment of 50 Kw power and BRN affiliation + BRN Nx (JL-OH) OK BLACKWELL - 10/6 0659 good with sign-on (RD-IA) WEBG PA EBENBURG - 10/9 1825 very good going into REL pgm Haven of Rest (HJH-PA) 1590 WTRW WI TWO RIVERS - 10/11 0835 with obits sponsored by the Cline & Stengel Funeral Home @ 22nd & Washington Streets followed by ID:Making your memories come alive, this is the oldies station, WTRW, Two Rivers-Manitowoc-Mishicot+Pledging My Love by Johnny Ace (CR-ON) 1060 AM MIDDAY TO MIDNIGHT 560 KLVI TX BEAUMONT - 9/25 2301 very good with ID during Astros BB network pause (RD-TA) 580 WTCM MI TRAVERSE CITY - 10/9 1857 with Hank Williams Jr song & ID @ 1900:Your station for the best country music, WTCM Traverse City > NBC Nx 'til power cut @ 1901; local CKWW nulled even tho WTCM is on the same bearing, signal was quite good; 1st catch on 580 since 4/3 75; MI #200 (CR-ON) 660 KCRO NE OMAHA - 9/21 2030 XLNT with sign-off (RD-IA) NE GRAND ISLAND - 9/20 2044 fair with sign-off during the Nebraska 750 KMMJ fight song; wonder how mant other stations do that? (RD-IA) 760 KMTL AR SHERWOOD - 9/27 2014 fair with sign-off (RF-IA1) 780 WJAG NE NORFOLK ~ 9/27 2014 fair with sign-off (RD-IA) 790 WWKY KY LOUISVILLE - 10/9 2209 good with promo for Indiana FB by pbp man Don Fisher + ID & song Tell it Like it Is (RD-IA) 830 WLND OH CORTLAND - 10/7 1825 very strong with oldies, 830 Rock (HJH-PA) 840 KWPN NE WEST POINT - 9/24 2045 XLNT with sign-off (RD-IA) KWOF 850 IA WATERLOO - 9/26 2014 fair with sign-off (RD-IA) PQ VERDUN - 10/8 2025 good over KOA with song in EE by George Michael + FF ID & talk by DJ; PQ #3 (RD-IA) MO BETHANY - 9/27 2030 good with sign-off (RD-IA) 870 KAAN AR CAMDEN - 9/27 2106 fair with ID and brief wx 4Cast during St Louis 910 KAMD Cards network pause (RD-IA) 920 CKNX ON WINGHAM - 10/7 1835 very strong with C&W mx (HJH-PA) 970 WNIV GA ATLANTA - 10/15 2059 good with full ID (RK-IL) KXTP WI SUPERIOR - 10/9 1924 good with Daddy's Little Girl by Mills Brothers followed by non-ID: The music you've been looking for, The Music of Your Life on 97-AM, KXTP+Kenny Ball's Midnight in Moscow 'til power cut @ 1928; WI #100 (CR-ON) 990 KAYL IA STORM LAKE - 9/28 1928 fair with sign-off (RD-IA) 1000 KOTD NE PLATTSMOUTH - 9/28 1858 very good with sign-off (RD-IA 1010 KXEN MO ST LOUIS - 10/15 1927 with sign-off; fair in WLUP slop (RK-IL) 1020 WPE0 IL PEORIA - 9/24 2014 fair with sign-off (RD-IA) 1030 KFAY AR FARMINGTON - 9/24 2022-2025 fair+goodwith promo for KFAY Money Machine contest+K-Fay Country wx (currently 57.+Eddy Raven song at Arkansas' Best Country, KFAY (RD-IA) KCTA TX CORPUS CHRISTI - 9/24 2030 good with sign-off (RD-IA)

REPORTERS:

HJH-PA
HARRY HAYES//Wilkes-Barre, PA//Superadio + Superloop (2 reports)
RD-IA
RICK DAU//Oakland, IA//R-1000 + RW Loop + 6-pak of Pepsi
CR-ON
CHARLES REH//Leamington, ON//R-390A, S-40A, Sanserino Loop, 40" phased loop, Realistic TR-3000 open reel
JL-OH
JEFFREY LESS//Toledo, OH//Mopar Autoradio, Panasonic R-1493, TM-152 + LW
RK-IL
ROBERT KRAHER//Chicago, IL//R-1000, HQ-129X + RW Loop, Kowalski Loop
SA-MB
SHAWN AXELROD//Winnipeg, MB//R-70 + 3' loop + 100' LW + Mini-Tun

The Answer Man

Got a question about radio? Send it to NRC's Answer Man: Russ Edmunds - 753 Valley Rd. - Blue Bell, PA 19422-2052. No question is a dumb question, and Russ will answer all, from basic to highly technical. Watch for the answer in DX News!



Domestic DX Wayne Heinen 131 S. Andes Way Aurora, CO 80013 DX Catches in the Western U. S. and Canada, with 24-hr. ELT

Deadlines are Saturdays two weeks before Topeka deadline.

Special

590 KAQQ WA Spokane

Correction to 10-9 column: ID's as "Q-59" (ed)

810 KWWS CO Rifle

10/9 0815-0843 Fair-good u/KGO w/new oldies format and frequent use of KKGD calls (note legal ID wasn't heard, hence call change is presumed). Slogans "81 K-Gold" and "continuous golden oldies" noted. Tremendous signal for

what should have been 9-watt PSA power! (TRH-CA)

880 KHAC NM Tse Bonito

10/23 1959 good o/KRVN. "The New 880 KHAC, Tse Bonito/Window Rock". Per tip from John Wilkins. New, NM #39. (JT-CO)

880 KHAC NM Tse Bonito

10/23 0926-0955 Rel prg, 0955 IMS Nx, 0959 ID "Your Voice of Inspiration, KHAC Tse Bonito 880 on your dial" (Tse is pronouced "Say") 1000 into local Nx (Ex-1110, Ex-Window Rock, AZ) NM #48 (0W-CO)

1130 KOFK NM Milan

10/23 2014 good w/oldies and USRN. Ad for Corly's Linc/Merc. New, NM #40 & Total #750. (IT-CO)

1130 KOFK NM Milan

10-24 0915 EE/SS s/on Wx, School lunch menu, local spots and accordian Mx thru 0930. All announcements and spots were Bi-ligual Addr Box 83, Grants NM 87020 New NM #49. tip per JT-CO (0W-CO)

1320 KUTR UT Salt Lake City

10/9 0300 AC mx, legal ID was 3 minutes late. (EX-KBUG). (TRH-CA)

1480 KRUU CO Pueblo

Per Station PSSA 107w used on FRI & SAT only (TH-CA)

MAGIC 61

Midnight to Noon

10/10 0900 Good signal, alone w/CBC nx and SK wx. Used to be an easy catch before XEWA got so strong. Odd to hear them this late—no KNAK or KPUP this morning. (TRH-CA)

690 KPET TX Lamesa

540 CBK SK Watrous

10/9 0453 fair w/ C&W mx. "The sports authority for (?) county, KPET". New, TX #76. (JT-CO)

870 KFJZ TX Ft Worth

10-23 0821 Spot Pepe's Restaurant, other local Spot SS Mx and prgming poor in the group New TX #98 (0W-CO)

870 KROL NV Laughlin

10/9 0100 fair in slop from KOA w/L.A. Kings Hockey Net. (JT-CO)

930 KLCY MT East Missoula

10/9 0100 ID: "Classy 930 is KLCY, East Missoula"; then back to synd pgm "Super Gold". Fair in WKY null w/QRM de KSDN, CJCA, others. New, MT #14. (0W-CO)

1010 CFRB ON Toronto

10/9 0521 "This is CFRB with The World at Dawn". New, ON #8. (JT-CO)

1040 KLHT HI Honolulu

10/11 0737 Fair, mixing w/WHO. "Manna for Today" program followed by IDs. Lost to XEHEF s/on @ 0807. Finally made a report. (TRH-CA)

1230 KFUN NM Las Vegas

10/11 0103 S/off anmt by ancr "Michelle", no SSB. Fair o/QRM. Unneeded. (0W-CO)

1340 KROC MN Rochester

10/9 0405 fair w/ID: "This is AM 1340, KROC in Rochester", then into LK show @ 0406. New, MN #15. (JT-CO)

1370 CFOK AB Westlock

10/9 0546 fair w/KSOP. "This is Central Alberta Nightwatch", then into "Goodtime Charlie". New, AB #19. (JT-CO)

1450 KFIZ WI Fond du Lac

10/9 0259 Barely thru QRM with "a message from the Ad Council", then ID: "This is Fond du

Lac, AM Stereo..." & lost to QRM. At over 1000 miles, this is one of my all-time best GY catches! New, WI #9. (0W-CO)

1470 KBSN WA Moses Lake

10/7 0822 Poor u/XERCN OC and KWIV with HS FB report by male DJ. Mentioned that they had carried the Wenatchee HS game the night before. Still using "Basin Radio" and "AM 14-70" slogans. New, WA #24. (TRH-CA)

1470 KWIV WY Douglas

10/7 0809 Poor but steady u/XERCN oc w/ C&W mx, male DJ mentioned "If you're going hunting today it's going to be cold". "Country 14" slogan, a couple of IDs, and promo for Wyoming Cowboys FB later today. New, WY #10. (TRH-CA)

1550 KSFT MO St. Joseph

10/9 0232 Ai nx, then C&W mx, "Hit Kickin' 1550" slogans. Good on peaks in KQWB null. (0W-CO)

Noon to Midnight

800 CHAB SK Moose Jaw

10/14 2222 good signal over XEROK. "Rock & Roll Oldies Show". Ad for Prince William Motor Inn. New, SK #14. (JT-CO)

1130 KLKY AZ Prescott

10/23 2044 poor in KWKH null w/KSDO. "You're listening to ..?...county's station for music and talk, KLKY". New, AZ #46. (JT-CO)

1130 KSDO CA San Diego

10/23 2046 poor in KWKH null w/KLKY. Traffic report for San Diego area, ID and News. New, CA #57. (JT-CO)

1130 WDGY MN Minneapolis

10/13 2207 good u/CKWX w/ID then into LK. New, MN #16. (JT-CO)

1230 KSEY TX Seymour

10-22 2056 Call hrd twice thru QRM New TX #97 (0W-CO)

1490 KRUI NM Rudioso Downs

10-22 2318 Spot for Bank of Ruidoso..faded 2359 legal ID 0000 Net Nx. New NM #47 (0W-CO)

1610 KOP741 NM Carlsbad

10/14 1425 Carlsbad Cavern Nat'l Park Loop tape 4 1/2 min w/info on the Cavern and 9 mile scenic drive, New Cave etc. Range 5 miles from location at the East enterence. (0W-NM)

UnID'S

1040 UnID

10/8 0321 HORRIBLE loud growling OC o/XEHEF, WHO. Made a noise like a scratching record, with a pause about every 4 seconds. Hope this isn't KIRS! (TRH-CA)

1340 UnJD

10/2 0116 poor-fair w/SMN Z-Rock feed. Couldn't get a loop direction on this one. Any new affiliates? (TRH-CA)

1450 KNOT AZ Prescott

This is probably Jim Renfrew's Unid from 10-9 column (TH-CA)

1570 UnID

10/13 2345 "The New 1570, EZ AM". Strong in XERF null then faded quickly. Any ideas? (JT-CO)

Contributors



(JT-CO) Jeff Tynan/Parker, CO/Sony-2002 w/JT5 Loop (0W-NM) John Wilkins Vactioning in Carlsbad NM/GE Superradio II (0W-CO) John Wilkins/Wheat Ridge, CO/R-1000 w/3 foot loop (TRH-CA) Tim Hall/Chula Vista, CA/ICF-2010, Radio West Loop

NRC AM Radio Log

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International DX Digest

Chuck Hutton

983 St. Charles Ave., #1 Atlanta, GA 30306 (404) 892-6211, before 2300 ELT

Foreign DX Catches. Times are UTC; for ELT, subtract 5 hours

Firstly, pull out your 10/9 DXN and flip to IDXD. I misinterpreted Russell Scotka's 670 log - "... occasional radio novella. ID as WWFE" is what he sent and what I should have typed.

- 549 ALGERIA Les Trembles/Oran 10/5 2344 poor to fair w/AA chant by man. (Connelly)
- 684 SPAIN Sevilla 10/5 2342 bits of SS talk trashed by WRKO.
- 693 AZORES Terceira 10/5 2340 PP talk o/unid (BBC?). (Connelly)
- 738 SPAIN Barcelona/unid 10/5 2330 SS pgm o/AA sounding stn. (Con)
- 756 PORTUGAL Lisboa and West Germany and unid 10/5 2330 PP and GG
- pgms mixed w/some kind of mx in a 3-way dogfight. (Connelly)
 765 SENEGAL Dakar 10/5 2325 chanting, strong o/SAH. (Connelly)
- 774 SPAIN synchros 10/5 2325 S talk by man and woman o/others. (Con)
- 783 EAST GERMANY Burg 10/5 2324 dominant w/GG male pop vocal. (Con)
- 810 COLOMBIA Bogota HJCY 10/1 0132 SS talk by man w/freq mentions of Bogota. Xlnt. No sign of WGY. (Townshend)
- 828 UNID Libya or Morocco 10/5 2323 bits of AA audio. Looked for // on 819, but that channel was a graveyard-like jumble. (Connelly)
- 837 SPAIN or Canary Islands 10/5 2323 SS o/others. (Connelly)
- 846 ITALY Roma 10/5 2322 opera in WHDH slop. (Connelly)
- 855 SPAIN Murcia 10/5 2322 SS talk by man, loud. (Connelly)
- 882 CANARY ISLANDS La Laguna 10/5 2321 SS talk o/het grpwl; slopped by WCBS. (Connelly)
- 909 ENGLAND/UNID 10/5 2320 EE talk o/u SS or PP stn. (Connelly)
- 981 ALGERIA Algiers 10/5 2317 AA pgm in WCAP slop. (Connelly)
- 999 SPAIN Madrid 10/5 2316 S talk, fair to good. (Connelly) 1017 TURKEY Istanbul 10/5 2318 plaintive male vocal, a blend of AA and
- Greek styles. (Connelly) Remember how strong this was when it first came on? What happened to this guy? CH
- 1035 PORTUGAL Lisboa 10/5 2313 bits of PP talk in heavy WBZ slop. (Connelly)
- MOROCCO/EAST GERMANY 10/5 2311 man in AA o/GG pop mx. (Con) MOROCCO 10/5 2310 3 stns, one of which was AA. (Connelly)
- 1062 PORTUGAL Norte 10/5 2309 PP talk. (Connelly)
- 1107 EGYPT/SPAIN 10/5 2303 AA and SS pgms, mixing. (Connelly)
- 1110 CUBA Holguin CMKL 10/16 0137 festive mx fair u/WBT. (Townshend)
- 1116 UNIDS 10/5 2308 jumble of several stns. (Connelly) 1125t YUGOSLAVIA 10/5 2304 c1 mx. (Connelly)
- 1134 SPAIN 10/5 2301 SS talk o/others. (Connelly)
- 1143 USSR Kaliningrad 10/5 2300 great signal! Woman in EE gave list of MW and SW frequencies, 8 note IS, chimes followed, then clear RR ID "Govorit Radiostantsiya Rodina". (Connelly)
- 1152t ROMANIA and others 10/5 2308 talk by man and woman possibly Romanian in mess w/others. SLight WMEX slop. (Connelly)
- 1161 UNID 10/5 2255 big carrier, little audio (maybe OC o/others). (Connelly)
- (Connerry)
 1179 SWEDEN Solvesborg 10/5 2254 R. Sweden external service pgm in FF,
- xlnt. (Connelly)
 1188 HUNGARY Szolnok (t) 10/5 2305 folk ballad by man, in a gypsy
 style. (Connelly)
- 1197 UNIDS 10/5 2306 multi-stn jumble, one possibly // 1188. (Con)
- 224 SPAIN 10/5 2251 SS pgm o/others. (Connelly)
- 1251 LIBYA/HUNGARY 10/5 2250 AA talk o/others including opera // 1341 Hungary. (Connelly)
- 1287 CZECHOŚLOVAKIA synchros 10/5 2248 good to xlnt w/cl mx then Slavic talk by woman. (Connelly)
- 1314 NORWAY Kvitsoy 10/5 2247 xlnt w/jazz. (Connelly)
- 1323 UNID 10/5 2246 fast talk by man, possibly SS. (Connelly)
- 1341 HUNGARY Lakihegy 10/5 2244 female operatic vocal // to stn on 1251 u/the Libyan. (Connelly)
- MAURITANIA Nouakchott 10/5 2243 to good peaks w/chanting. (Connelly)
- 1395 ALBANIA Lushnje 10/5 2228 SS male vocal, SS talk, then 8 note trumpet IS. Bodacious signal. (Connelly) Awesome fer sure CH
- 1413 SPAIN 10/5 2224 bits of SS talk in graveyard type jumble. (Con) 1413 YUGOSLAVIA Pristina 10/5 2241 cl mx rising up o/SPAIN. (Connelly)
- 1422 WEST GERMANY Heusweiler 10/5 2223 pop mx (Gloria Estefan) then GG talk. Good signal. (Connelly)

1431	UNID 10/5 2221 talk by man and woman (SS or II), poor in WXKS
1467	<pre>slop. (Connelly) FRANCE (ex Moanco) Roumoules 10/5 2203 TWR AA service, like a</pre>
1475	local. (Connelly) UNID (African?) 10/5 2239 someone on this old plan channel badly
	hetting 1476. (Connelly)
1476t 1512	
1312	African affairs). WKKU 1510 though very strong at the DXpedition
	beach QTH, wasn't slopping that badly when a moderate amount of
1521	regeration was brought in on the MWT2 active tuner. (Connelly)
1321	SAUDI ARABIA Duba 10/5 2140 blowing away 1520 domestics long before sunset. Up to monster level by 2205 w/AA talk and mx.
	Amazing signal for the distance. Reception of this from seaside
	sites more than an hour before is certainly not uncommon. (Connelly)
1530	VATICAN (t) 10/5 2207 SS talk by woman (news), apparent Vatican
	mentions. (Connelly)
1539	SPAIN 10/5 2236 S talk by man and woman, atop low-pitched het. (Connelly)
1548	USSR Ukraine? 10/5 2235 man in Slavic language. (Connelly)
1557	FRANCE Nice 10/5 2209 man and woman in FF at low audio level on
1566	strong carrier (or maybe under Malta OC). (Connelly) TUNISIA Sfax and AZORES Vila de Porto 10/5 2211 AA talk by man
	o/PP folksong; some CKLM slop. (Connelly)
1584	SPAIN 10/5 2212 SS talk o/jumble. (Connelly)
1593	WEST GERMANY Langenberg 10/5 2232 fair to good w/woman in GG. (Connelly)
1602	SPAIN 10/5 2232 man in SS, slopped by WUNR. (Connelly)
Mark	Connelly - Salisbury Beach, MA Sony ICF2010, 25 m LW, MWT2 tuner
	Townshend - Washington DC Sony ICF2010

Graveyard Achievements

DXer and Location(s)

William Hale

734 Burleson San Marcos, TX 78666

1230 1240 1340 1400 1450 1490 TOTAL

Distance records attained on 1230, 1240, 1340, 1400, 1450, and 1490 kHz

Date of Last Update: Sep 5, 1989

STAN MURSS BOXford, MA DON KASKEY Galva, IA CHARLES REH Leamington, ON BOB KNOX Newton, NJ HANK HOLBROOK Chevy Chase, MD FRANK WHEELER Erie, PA ROY H. MILLAR Bellevue, WA ROBERT KRAMER Chicago, IL	586340938622286991288621333215	98 1147 67 64/2 80 64/2 81 57 148 435 335 335 329 19 25 10 12 13 25 13 21 21 21 21 21 21 21 21 21 21 21 21 21	116 101 104 83 63 79/4 63 57 57 50 44 44 432 221 326 227 225 225 226 226 213 266	117 1005 1005 673 649 451 649 451 645 645 645 645 645 645 645 645 645 645	308177655117765886655711777788546637746377463774	102 639 98 607 93 585 74 424 50 403 53/9 345/24* 32 343 34 327 29 243 39 2213 48 213 48 213 48 213 36 166 37 172 38 166 39 243 40 213 40 213	
LAURIE BOYER Invercargill & Dunedin, NZ DON KASKEY Sacramento, CA GARY ATKINS Louisville, KY GEOFFREY PARRISH Memphis, TN FRANK MERRILL Various Locations NEIL DICKERSON Sharptown, MD DAVE SCHMIDT New Castle, DE BILL HARDY Aberdeen, WA	16 15 21 17	15 17 8 21 18 19 24 22	3 22 29 20 17 32 21	32/2 25 21 22 20 16 16 18	32/5 29 18 23 26 19 12 18	20/2 118/9* 17 125 26 123 20 123 26 123 15 122 23 113 18 111	
RICK CARR Bloomington, IL & Austin, TX TON SUNDSTROM Willingboro, NJ SHARON SKOWERA Enfield, CT HARRY HAYS Gouldsboro, PA NIEL WOLFISH Toronto, ON JOHN MALICKY Pittsburgh, PA	12 13 12 15 10	18 26 19 21 18 15	24 17 25 17 17 16	16 23 21 13 11 14	20 20 15 21 20 24	19 109 8 107 15 107 19 106 30 106 27 103	

ESA HÄNNINEN Various Locations, F	inland 11 12	12	15 13	15 22	15 14	30	94
JOHN WILKINS Wheat Ridge, CO NANCY HARDY Aberdeen, WA	16	20	13 13 7	22 11	13	16 14	89 87
RODNEY VALDRON Petit Rocher, NB JIM HILLIKER Anaheim, CA	16 1 1	21	15	13	17	17 12 15	87
NIEL WOLFISH Winnipeg, MB TIM HALL Chula Vista, CA	1 1 16	21 12 2 9	15 10 13 39 10 6 7	11 9 13 22 13	17 16 19 16	15 11	ŹŠ
JOE KURETH Uniontown, MD	11	27	39	13	_	_	77
JIM RENFREW Rochester, NY JEFF TYNAN Parker, CO	16 11	10 11	16	12 14	12 16	13 10 9	73 68
STEVE GOOZOVAT Binghamton, NY WAYNE HEINEN Colorado Springs, CO	14 8	14	7	11 17 7	14 3 10	9	87 79 79 78 77 73 68 61 61
JERRY ROBERTSON Croswell, MI	16	6 8 3 12	19	7	10	13 13	60
GREG CONIGLIO Clarence, NY	13 3	12	19	11 8	14 15	6 11	57 56
East Lansing, MT	11	9	9	12	4	9	54
STEPHEN MCINTIRE Des Moines, IA LES CARPENTER El Toro, CA	10	15 6	9 9 8 7 7	2	10	9 9 6	49 46
RUSS EDMUNDS Syracuse, NY	12	7 9	ž	5	16	8	46
DEBRA HIDDEN Orlando, FL WAYNE HEINEN Orchard Park, NY	6 13	10	8	122 85 62	10 6 5 6	1 <u>1</u> 5	44 44
PAUL MOUNT Teaneck, NY KEN ONYSHUCK Hazel Crest, IL	5	8	8	8	. 8	5	42
MIKE HARDESTER NAS Miramar, CA	5 6 6 6	87657 - 39	8 6 3 6	8 8 7 6 5	10 11 7	5 5 5 7 9	42 335 35 333 33
STEPHEN PONDER Bossier City, LA BILL HALE Various Locations	6	5 7	6 4	6 5	7 4	7 9	35 35
GEORGE SANTULLI Cranford, MA ERIC McINTOSH Invercargill, NZ	ō	- 3	33	15	-	7	33
BILL LACKEY Kingsville, TX	ě	9	4	3	7 5	4	31
God's Narrows, MB	5	6	5 4	7	4	4	31
ERIC BUENEMAN Hazlewood, MO RICK DAU Oakland & Iowa City, IA	8	7 6	4.	5	3	4	31
RICHARD E. WOOD Hilo, HI	5	5	8	4	4	2	28
GENE NIX Billings, MT	3	ŝ	5	5	4	3	25
WAYNE HEINEN Aurora, CO JEFF KOSNETT Chicago, IL	4 5	6	6	5 3	6 4	4 3	25 24
TODD WILLIAMS Hood River, OR PAUL MOUNT Nelsonville, OH	4	4	- 2	24	3	-	24
CHRIS CUOMO Verona, PA DON DAVIS Warner Robins, GA	58454845 - 4255821 2	67658563 - 444321 -	383506 253240	58445533433223211 2	3346464 35422552	621343 52053583	3286554411097532 22222111532
PAUL SWEARINGEN Moran, KS	5	3	2	2	2	ź	19
RON RYCHALSKY Bridgeport, CT LES CARPENTER Sandy, UT	2	1	0	2	5	3 5	17 15
LES CARPENTER Sandy, UT SHARON WATERMAN Southwick, MA RICHARD TURNER N. Yarmouth, MA OLLE ALM Stockholm, Harnosand,	2	3	ī	1	5	8	13
OLLE ALM Stockholm, Harnosand, Karesuando & Goteborg, SWEDEN	0			3			
SHAWN AXELROD Orlando, FL	ĭ	2 1 -	2 1 3	4	1	2 1	10
RICHARD WATERMAN Southwick, MA	1 1	1	-	4 2 1 0 1	1 2 8 1 1	ō	10
SHAWN AXELROD Edmonton, AB DALE PARK Irvine, CA	1	0	1	1	1	1 0	5
DALE PARK Windward O'ahu, HI SHAWN AXELROD Swan River, MB	-	2	-	ĭ	1	-	10 10 85 4 22
Simmi Tive FUOD Swall VIAGE ' UP	v	4	V	0	0	0	- 2

Totals are for before/after 1960
 Unknown or unreported



BEAT THIS — When KKBT/L.A. recently signed on as "The Beat," the station put up billiboards in such far-flung locations as Santa Clarita, CA — which just happens to be KBET's stomping grounds.

Not surprisingly, KBET also uses "The Beat" as its identifier, and — as pictured — the 'BET morning team of Barry & The Beast staged a commando raid last week (10/12), capturing the billboard, and draping it with their own banner. Talk about your cloak 'n' dagger operation!

Going to great lengths to patrol airwaves

Douglas hey call Arizona their beat, but the radio cops stationed in Douglas go wherever their antenna will permit. Working out of the Federal

Communications Commission's Arizona field office, their search of the airwaves doesn't stop at the state line.

Jeffery Norman, an FCC technician, recalls the time he picked up a signal from an American pleasure boat in the Pacific; it was being broadcast at the wrong frequency, a violation of FCC rules. But Norman's first reaction wasn't to issue the captain a citation.

It was to pinpoint his location. "He was lost in the ocean, taking on water," Norman says. The boat was sending an SOS.

Joining other FCC monitoring stations in California and Texas, Norman helped the Coast Guard find the lost, sinking yacht. At least eight people were rescued.

The monitoring room in which Norman works has instruments, dials, knobs and oscilloscopes covering three walls. The building that houses the room occupies a tiny piece of a 137-acre, government-owned grassland.

In the south pasture stands a circle of 60 antennas. With a diameter nearly the length of a football field, the scene

resembles something of an electronic age Stonehenge. The FCC, however, prefers to think of it as the staple of their antenna farm.

This particular array works as one antenna, and can track the origins of radio broadcasts from almost anywhere in the world, given the right frequency and a strong enough signal. Near-pinpoint accuracy can be had when long-distance arrays on other FCC antenna farms are brought into play, says Kate Lawson, public affairs specialist for the 11-member FCC office in Douglas.

lt's a matter of trigonometry. For example, the Douglas office Captain Midnight. Captain Midnight cut in on a satellite relay and interrupted a Home Box Office movie for 41/2 migntes in 1986. The FCC radio police zeroed in on the pirate dcaster, who turned out to be a satellite-dish retailer in Florida. He was upset because he believed pay-TV companies would hurt his sales by jamming broadcasts to

joined the country's dozen or so other FCC antenna farms in an

electronic manhunt of a pirate

broadcaster calling himself

But the long-distance array isn't the only antenna on the farm, just the most of rious. Two others look like a pair of small-time radio towers. Other antennas are clustered around the two buildings. Still others are strung across large wooden beams along a roadside and look just like utility lines. The antennas have names like rhombic, dipole and conical

In total, they give technicians like Norman the means to patrol every little nook and cranny of the usable radio band. Where you end up on the band depends on what frequency, or wavelength, you broadcast in. At the low end, the wavelengths stretch out until they're almost flat; at the high end, they're compressed to the point where they leave the realm of radio and become infrared and visible light.

In between, there's not much elbow room. To prevent radio gridlock, the FCC requires almost everyone using the airwaves to be licensed. Among other things, the license allows a person or company to operate at a particular frequency — whether it's for ship-to-shore radio, citizens band ham operators, television, AM-FM radio or cellular telephones.

Technician Norman can tell who's who on the radio with the aid of a microfiche file of FCC license-holders. With more than 13 million license holders, it's a big

Besides U.S. transmissions, the FCC station also monitors foreign broadcasts. That's one reason the station is just outside a border town, where it can more easily

listen in on the rest of the world. This isn't just snooping, says Stephen Tsuya, the engineer in charge at the field office. Many countries have agreed to international standards that each helps to enforce.

Even countries party to the basic agreement, however, have that own viay of doing things.
Mexico, for example, not only
speaks a different language, it uses different frequencies, Tsuya says.

Their frequency assignments do not line up with ours. Where we have police, their telephone frequencies line up.

That's why police in U.S. border towns sometimes complain about interference on their two-way radios. They're picking up phone calls from Mexico. Little can be done, though Tsuya does meet with his Mexican counterpart at least once a year to discuss this and other matters.

At the antenna farm, Tsuya works out of an office down the

hall from the monitoring room. His window offers a view of a narrow blacktop road that makes a beeline to U.S. 666. A right turn and 12 miles puts you in Douglas, just past a state prison and Pirtleville.

There's practically nobody else around. It's a quiet place to work, which is a good deal for FCC techs scanning the radio band for scofflaws. Long-distance listening works best when there's little clutter from local stations.

That's why the monitoring station is here, in the middle of nowhere - rather than Phoenix, where the radio traffic is heavy.

On the other hand, because Phoenix has so much radio babble it's where most of the complaints arise. They end up at the FCC office in Douglas. The majority deal with bad reception and interference, spokeswoman Lawson says.

The office gets nearly 400 such

complaints a year, she says. A handful will require an FCC engineer or two to head to the Valley and monitor the situation. literally. So when several Sun City residents griped that a ham operator was disrupting their TV watching and phone conversations, Tsuya and another engineer drove up to check it out.

They monitored the operator from a special \$150,000 mobile unit that looks like an unmarked ice-cream truck. They concluded the operator indeed caused the interference, but he didn't do anything wrong. He was on the

proper frequency. FCC engineers, however, improved TV reception at one Sun City man's house by adjusting the rabbit ears on his set.

The ham operator knew about the monitoring in advance.

But FCC agents also go undercover, as they did when they investigated a Glendale man who was illegally transmitting on a frequency reserved for the federal government. They initially picked up his signals at the Doug station, then — with a mobile unit

traced them to his house.
 The FCC hit him with a \$1,000

fine.
Most interference complaints, however, are minor, and the agency just doesn't have the time or staff to look into them. So Lawson often mails out an FCC publication that tells people how to handle the problem themselves.

If a television's getting bad reception, for example, it might be because your personal computer is too close. Move it to another room. the publication advises.

Of course, some complaints about bad reception are more reasonable than others, Lawson

"We had a call from a very nice gentleman, from here in southern Arizona. He was complaining of poor reception on his favorite AM-radio station.'

His favorite station, it turned out, was in Wyoming.

Others complain that reception is too good, and they'd like it to stop, Lawson says.

"They pick up radio stations in the fillings in their teeth. Their house is under surveillance by laser beams. Can we send somebody out?"

> Need more information about MW DX? Mail \$1.00 to the NRC Pub Center: ask for the Reprints Catalog



Electronic technician Jeff Norman tracks down signals from the monitoring room



Stephen Tsuya stands in a circle of antennae known as a long-distance array, which can track radio broadcasts from almost anywhere on the planet.

By Bill Coates

ome frequencies on the radio band call for greater vigilance than others. The Federal Communications

Commission pays particular attention to interference with broadcasts on which people's lives depend.

If somebody's hindering police, fire and aircraft communications, FCC engineers don't wait until something goes wrong. They find the culprit as quickly as possible.

"The frequency we're most concerned about is the aviation frequency," says Stephen Tsuya, engineer in charge at the FCC field office near Douglas. "If there's a false reading, a plane could

Oftentimes, a false transmission or interference on the aviation band doesn't come from somebody knowingly talking on the wrong channel. Sometimes it's an electronic fluke, Tsuya says

There was a case where an electronic cash register at a retail store was jamming the aviation frequency of a nearby airport," Tsuya says.

Many times, finding the source of interference requires a little detective work. Such was the case of the mysterious signal that jammed radios on commercial aircraft flying over Flagstaff. The affected aircraft had one thing in common

they were all on a flight path toward Gallup, N.M. An FCC undercover agent - an engineer - was put on the case after the Douglas office got a call from the Federal Aviation Administration in Phoenix. The FAA had failed to the find the signal

After driving to Phoenix, the agent boarded a plane registered to the FAA. It was equipped with a special signal-tracking antenna, similar to portable units used by the FCC.

The search plane took off from Sky Harbor International Airport. It flew to Flagstaff, then at 19,000 feet, the FCC man turned on the monitoring

It was a disappointing day. He didn't pick up the

Phoenix Gazette -via Skip Dabelstein

Tracking signals can be a mystery

The next morning, however, he thought to turn on the equipment as the plane left the airport. Bingo The agent traced the errant transmission to a company operating out of a Deer Valley Airport industrial park in north Phoenix.

The culprit, it turned out, was a heat sealer used to wrap plastic on packages for store display. The sealer's energy was supplied by a radio frequency, one which ordinarily wouldn't interfere with aircraft communication. But recent repairs had thrown the sealer slightly off kilter.

The company fixed the problem.

The FCC investigator didn't pick the signal on the first flight around Flagstaff because mountains blocked it. As it happened, aircraft getting the signal were flying at 30,000 feet or more, high enough for line-of-sight reception from Deer Valley

1 arget DX Jim Renfrew 61 Wilcox Street

61 Wilcox Street Rochester, NY 14606-3832

DX'ing 'smart', with shared tips and requests by NRC members

"Dedicated to the strategy, patience, and luck of DX."

After having received many excellent DX tips through the various columns of DX News over the years, I was honored and delighted to be invited to edit one myself. Thank you, friends, for the opportunity and for your confidence.

The purpose of "Target DX" is to share the strategies that DXers have developed in the pursuit of tough DX targets in recent years. While DXing has always involved certain strategies to get the tough ones, new regional stations on formerly clear-channel frequencies, the almost universal phenomenon of NSPers, and the introduction of night powers on regional and clear channel frequencies has made for a greater amount of interference to cut through in the pursuit of the rare ones. What used to be a simple strategy of Monday morning scanning for clear channel silent periods and afternoon sunset skip is now much more difficult. In fact it has become so difficult, that a new-comer to the NRC can quickly become discouraged hearing how easy it was to hear trans-continental DX in the "good old days," while she or he can barely hear St. Louist

The three words in the dedication describe the reality of DXing in my own experience. For many years I have been trying to hear CBN-640 without any success. The strategy is clear enough: monitor 640 on the HQ-150 and 6160 shortwave on the Sony ICF-2010 at 4:30 AM ELT for sign-on (shortwave parallels are always helpful). My patience is legendary (my wife might call it sustained stupidity!), for in 12 years I only once thought I heard CBC news through the noise. Luck has yet to play it's part, but there is a good chance that I will someday hear the station at a completely different time of day while trying for something in South America during an aurora!

In columns to follow we will be relying on your experiences of DXing. How did you actually go about hearing those rare ones, like Washington and Oregon, New England, Delaware, New Jersey, or Hawaii and Alaska? Whether it was strategy or luck, we'd be very interested in hearing how it happened. Or perhaps you are like me, with a long wish list. What are the ones that you've been trying for without success? We'd like to know as some readers may have a tip for you.

So as not to limit the definition of what consitutes Target DX, you might have another angle to bring into the matter, such as Foreign DX targets, "leading DX indicators" that serve to notify you of temporarily good reception to a certain regions of the country, sunset skip strategies, etc. Feel free to be creative.

I'd like to get this column to Paul once per month during the DX season, but for now it depends upon your contributions. Thank you for your support of this and other columns in DX News.

It is very gratifying to have mail appearing in the box in response to my request for material for this column. Thank you for your support.

Paul Swearingen writes that Caribbean stations "hop" into the Midwest from about a half hour or more before sunset to an hour or so afterwards through the end of November, at which time the South Americans tend to predominate on split frequencies. Paul goes on to say that Orizaba, Mexico on 850 khz is a good indicator of reception to the south, and easy to identify with lots of city IDs. Another indicator of good conditions to Central America that Paul watches for is YSS-655 El Salvador, which is easy to spot with a het against WSM-650.

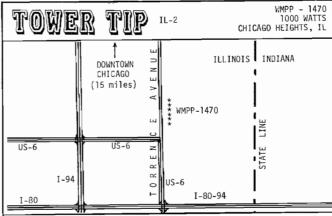
My own initial indicator of good Caribbean conditions is to listen to various Cuban stations, to hear how well they are doing against the US/Canadian clear-channel stations. A second indicator of good reception is the degree to which VenezueIa 670 rises above Cuba with WMAQ nulled. I use shortwave parallels whenever possible so that I can match a known shortwave outlet against the faint signal I'm hearing on medium wave. This allows me

to quickly move, if I've already logged it, or to stay if I haven't. This kind of information is easily found in the World Radio TV Handbook, but [will provide a short list of examples for those who need it:

6130	CHNX, Halifax	//	CHN5-960	(Mornings best)
6160	CKZN, Newfoundland	//	CBN~640	(Mornings best)
3285	R.Belize	//	830	(Both hard, SW irregular)
4832	R.Reloj, Costa Rica	//	730	(SW easy)
5030~	R.Impacto, Costa Rica	//	980	(SW easy, but varies up to 5040 khz)
5025	R. Rebelde, Cuba	//		(many MW frequencies, 710 best here)
4950	R. Clarin, Dom. Rep	//	860	(SW not heard since moving from 11700)
3300	R. Cultural, Guat.	//	730	(SW sometimes faint, but regular) .
6185	R. Educacion, Mexico	//	1060	(heard several times after 1:00 AM ELT)
6160	R. Sandino, Nicaragua	//	750	(I generally get MW better than SW)
4755/5075	Caracol	//	810,850	(SW easy, heard English ID once on MW)
47 9 0/ 96 60	R. Rumbos	//	670	(SW easy)
4850	R. Capital	//	710	(MW now harder, with R. Rebelde-710
4980	Ecos del Torbes	//	780	(SW easy)

Please note that some Latin American shortwave stations are somewhat more irregular in their operations than their medium wave companions.

Another important indicator for auroral conditions favoring Central and South America receptions is the propagation report heard 18 minutes past the hour on WWV (2500,5000,10000,15000,20000) and 45 minutes past the hour on WWVH (2500, 5000, 10000,15000). Other articles available through the NRC give a complete understanding of this hourly report, but stated most simply, an A-index higher than 15 will send me to the dials looking for Spanish language broadcasters on



WHAT TO LOOK FOR: 6 towers in a north-south line very visible from I-90 (Skyway) about 4 miles off to the right leaving Chicago. CONTRIBUTED BY: John S. Bowker, Valparaiso, IN

Send information about a.m. broadcast towers in your area to John D. Bowker, 14 Canoe Brook Drive, Princeton Jct., NJ 08550. Include a simple map (Bowker may re-draw it) showing major highways and any other terrain features near the tower(s). Tell how many towers, how they are laid out, and any other features that will help in spotting them.

Join the verification game!

Now, you can help out with station tests. Here's how: Send Wayne Heinen - 4131 S. Andes Way - Aurora. CO 80013 two 25¢ stamps per station, and Wayne and Jeff Tynan will print and mail an effective test request letterfor you. You can either specify station and time, or just take pot luck. Increase your veries and help other NRC'ers at the same time ... join the verification game!



Antipodean DX Odyssey - by Niel Wolfish

This past summer, I had the opportunity to visit Australia, New Zealand and Fiji. I took along my SONY ICF-2010 in order to attempt some DX listening. Some comments on my travels follow:

Australia

MELBOURNE, VICTORIA: My first stop on the trip was Melbourne, in the first week of July. Using the ICF-2010, 6 Australian states were audible here in the evening. South Australia, New South Wales, Tasmania, Queensland, Victoria and Australian Capital Territory. The east coast of Australia stretching from Adelaide in the south up to Brisbane in the north east could be heard without much difficulty.

Without looking for them, I stumbled upon 3LO/3AR, part of the Australian Broadcasting Corporation, (the A.B.C.) at the corner of William and Lonsdale Streets downtown. As well, 1278-3AW was around the corner at the corner of William and Latrobe Streets. At 3LO/3AR, I was able to arrange a special tour of Radio Australia. Radio Australia's studios are a few minutes north of Glen Waverly train station, 35 minutes east of downtown; just grab a "Glen Waverly" train from Flinders Street Train Station. I was given an interesting tour by announcer Michael Taft. Radio Australia had a large room full of promotional paraphernalia. However, I was not interested in lugging stickers and letterhead around in my back pack for two months! As it turned out Radio Australia was the only radio station I bothered to visit during my 2 months in the South Pacific. Incidentally, the A.B.C. also has a shop, that sells books, records and souvenirs, in the Victoria State Bank Arcade at the corner of Elizabeth and Bourke Streets.

As for the commercial stations in Metropolitan Melbourne, the formats appeared to be as follows: 531-3UL CHR, 855-3CR Ethnic, 822-3YB Oldies, 927-3UZ Talk, 1026-3TT AdCon, 1179-3KZ AdCon, 1278-3AW Talk, 1377-3MP MoR, 1422-3XY Adult Rock, and 1503-3AK Talk/Sports. 3XY and 3TT billboards may be seen all over "The Met", Melbourne's transit system.

ALICE SPRINGS, NORTHERN TERRITORY: Quite a difference going from Melbourne (population approximately 3 million) to Alice Springs (population 22,000). If for some reason you wish to visit the one commercial station in Alice Springs, the studios of 900-8HA and FM BCCC are easily found on the west side of The Stuart Highway (Highway 87) between the airport and downtown. BHA's format is Pop music. The A.B.C. station, 783-8AL (and short wave VL8A on 2310 & 4835) are found downtown in The Todd Mall.

DXing in Alice Springs was quite different from Melbourne. Most of the 50 kW A.B.C. stations from the eastern Australian states, such as 576-2FC in Sydney, were audible. A few of the lower powered privately-owned and public broadcasting stations, mostly from South Australia, were heard as well. One such station that got out well was 585-2WEB in Bourke, New South Wales, with Rock music and carted slogans, such as "Rocking the Outback, 2-W-E-B".

ADELAIDE, SOUTH AUSTRALIA: From a DXer's standpoint, Adelaide was quite similar to Melbourne. Western Australia and Northern Territory could not be heard, but the rest of the country, particularly along the east coast, could be heard. It was remarkable how well some of the 2 kW stations from Queensland and New South Wales carried!

The local Adelaide radio dial was as follows: 531-5UV Educational, 765-5CC Oldies, 972-5DN News/Talk, 1125-5MV CHR, 1197-5KA "Greatest Hits", 1323-5AD AdCon, and 1386-5AA AdCon. 5UV, incidentally, is located on North Terrace, across the road from the Museum and Art Gallery.

PERTH, WESTERN AUSTRALIA: From Perth, some of the 50 kW eastern Australian A.B.C. outlets were audible at night, but not much from closer distances, such as South Australia. I would imagine this would be akin to a DXer in Vancouver being able to hear

940-CBM (Montreal) and 1580-CBJ (Chicoutimi), but very little between the Rockies and the Great Lakes. A few of the lower powered private stations were heard, including 1341-3GL (Geelong, Victoria) and 1575-200 (Wollongong, New South Wales), although 200 had to contend with the Voice of Free Asia/Voice of America relay in Thailand. Incidentally, the Voice of Free Asia was heard loud and clear with an English newscast at 1500 UTC and relaying VOA in English at 1530 just as per the schedule in the WRTH. Perth seemed like a much more interesting place to attempt Short Wave DXing. I noted 15 Radio Republik Indonesia outlets on the 60 and 90 meter bands during the local evening

For the radio station promotional item collectors, the A.B.C. (720-6WF and 810-6WN) was located on Hay Street a couple of blocks from the Sheraton Hotel next to a bowling alley just east of downtown.

BRISBANE, QUEENSLAND: The Brisbane radio dial, at least as much as I noticed: 693-4KQ AdCon, 882-4BH Oldies, 1008-4IO AdCon, 1053-4EB Ethnic, 1296-4BK Classic Hits. In the "not visited, but noticed" department, the local A.B.C. stations 612-4QR and 792-4QG are located on Coronation Drive west of downtown near the Toowong Train Station (if you see a Sizzler Steak House, you will have gone too far). 104.1-4MM-fm has a shop in the Meyer Centre on the Queen Street Mall that sells T-shirts, sweatshirts, beach sandals, bumper stickers etc. "FM 104" features a Kangaroo playing a guitar for their logo. Only in Australia...

The DX in Brisbane was pretty good. Lots of stations from Queensland, New South Wales and Victoria dominated the dial, but also a few surprises, such as 558-7BU in Burnie, Tasmania. R.F.O. New Caledonia on 666 and Wellington, New Zealand's 1035-2ZB were also audible.

CAIRNS, QUEENSLAND: The local radio dial consisted of 531-4KZ (AdCon) and 846-4CA ("Hits and Memories") as well as the requisite A.B.C. relays. The bulk of the stations audible in the evening came from Queensland, but 1278-3AW (Melbourne, Victoria), 1386-5AA (Adelaide, South Australia) and 1530-2VM (Moree, New South Wales) were among the few that crept in from farther afield. I suppose hearing a 2 kW Adelaide station from Cairns would probably be the equivalent (distance wise) of hearing a 2 kW Houston station (if such a thing existed) from Maine.

AUSTRALIA, IN GENERAL: After you got by the A.B.C., which often meant hearing the same Australia-England cricket match every 9 kHz up the band, the majority of the Australian commercial stations appeared to playing a variation of popular music, Contemporary Hits, Soft Rock, Adult Contemporary, Oldies or a mixture. In other words, Paul McCartney's My Brave Face and Don Henley's End Of The Innocence were fair game on just about every station, including the A.B.C. outlets when there wasn't any cricket going on. Sports Talk is also very popular in the cities, although instead of baseball, the topics discussed are usually Australian Rules Football and Rugby.

New Zealand

Unfortunately, I only had 10 days in New Zealand and I didn't spend too much time using the ICF-2010. As a generalization, it appeared that from New Zealand you could count on hearing New Caledonia on 666 as well as some of the east coast Australian 50 kW A.B.C. outlets, such as Sydney (576-2FC) and Grafton, New South Wales (738-2NR).

Aside from the Radio New Zealand outlets, the remainder of the stations in New Zealand appear to be Contemporary (e.g. Auckland's 1476-1XA ~~ "Radio Hauraki") or religious (e.g. Christchurch's 1503-3XG ~~ "Radio Rhema"). As an aside, in Auckland there seemed to be quite a few Christian book shops, usually right next door to the Adult cinema and book stores!

I had no intention of visiting any radio stations in New Zealand, but I did notice a few in my travels. If you have the time to visit the country I strongly recommend you skip the

visits unless you have exhausted every other possible cultural activity. Nevertheless, I will mention I few that I passed by:

WELLINGTON, NORTH ISLAND: Radio New Zealand, Radio Rhema and Radio Windy (891-2XW) are all located in the downtown core in the area between the Parliament Buildings (known locally as "The Bee Hive") and The Cuba Street Mall. If you are walking along Lambton Quay, you should have no trouble find these three stations.

AUCKLAND, NORTH ISLAND: If you take the bus out to the Zoo or the Museum of Technology, you will pass right by 1332-1XI ("Radio i"). Auckland's Radio Rhema studios were on Queen Street up the hill south of Town Hall. I'm sure that I saw Radio Hauraki's studios as well, but I didn't really care enough to note the address.

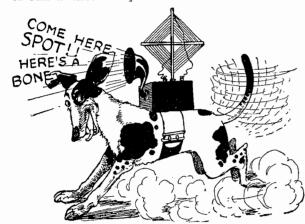
Fiji

I didn't listen very much to the local radio in Fiji aside from the commercial "FM 96" in Suva, the capital city. FM 96 sounded fairly current and professional, although the Rick Dees Top 40 program that aired on a Sunday evening was at least 3 weeks behind the rest of the world. And 4 hours of the same "Juicy Fruit" commercial at every break can be irritating after a while!

Fiji is an interesting place to DX from. Several Australian and New Zealand stations are heard each night, ranging from the strong A.B.C. and Radio New Zealand stations (e.g. 657-2YC in Wellington; 846-2CY in Canberra, Australian Capital Territory) to the weaker private commercial stations (e.g. 1071-3CV in Maryborough, Victoria and the aforementioned Radio Hauraki in Auckland on 1476~kHz). Tuvalu on 621~(signing off at 0900~UTC), Tonga on 1017~(signing off at 1000~UTC) and American Samoa (WVUV) on 648~are also easily heard. Probably the best signal on the band, however, comes from New Caledonia on 666. Incidentally, R.F.O. Nouvelle-Caledonie is supposed to have an English newscast at 0700~UTC (7 p.m. in Fiji & New Zealand) if you believe the WRTH. I never heard anything but French programming.

Tahiti on 738 was attempted, but not heard because of Australian 2NR in Grafton, New South Wales. I also spent some time hunting for Western Samoa on 747, Kiribati on 846, Hawaii on 870 (KAIM-Honolulu), and Vanuatu on 1125 without any success. I did hear traces of religious music on 870, which I would like to think was KAIM, but never any IDs. The difficult-to-hear Short Wave outlets of Tonga (5030 kiloHertz and apparently undergoing repair) and Kiribati (14802 or 14918 or who-knowswhere) also eluded me. On the other hand, New Caledonia, Vanuatu and the Solomon Islands are all easily logged on their Short Wave frequencies.

So there you have it. Obviously with a little more time and better locations I would have heard more. Nevertheless the South Pacific radio dial makes for a nice change from Larry King or Guns n' Roses every 10 kiloHertz!



Thanks to this new Dog Radio Set, people who can't run will be able to make their Dog come back.

инискравный положений

R5000 Modifications - by Eric Roskos (via Pete Kemp)

The following describes some option jumpers and other features I have found in the Kenwood R-5000 receiver.

The R5000 is fairly delicate internally, so you should not undertake these modifications if you are not fairly confident of your ability to work with delicate electronics (or to repair it if necessary). In particular, the receiver's numerous circuit boards are connected together with wire harnesses made of relatively fine and delicate wires. Also, some of the boards (particularly the IF board) have small "daughter boards" containing small surface mount parts vertically attached to the main board. These are also fairly fragile, and caution is required in handling them.

EXPANSION FEATURES

The R5000 has six "Expansion Feature" options which are not documented in the user manuals. These are controlled by jumpers (actually diodes) on the CPU board, which is attached to the back of the receiver's front control panel, underneath a metal RF shield. Unfortunately, you must completely remove the receiver's covers, and unfasten the front panel, in order to access these.

Gaining Access to the Jumpers

To access the jumpers, remove the top and bottom covers of the receiver by removing the eight silver screws which hold each cover in place. Use caution at this point, since the radio will be sitting only on its internal chassis, and delicate parts will be exposed.

Next, remove the four flat silver screws which were *under* the covers (NOT the black screws that are visible with the covers on) which hold the front panel onto the main chassis. Be sure the receiver is sitting on a solid table so that the front panel will not fall off when you do this, since there are a large number of wire harnesses connecting to the CPU board. Very carefully pull the front panel forward and rotate it so that you can get access to the back of the front panel.

Loosen the five small metal screws (two at the top, three at the bottom) which hold the RF shield in place over the CPU board. The holes in the shield the screws go into are slots, which allow you to slide the shield off without removing the screws completely. This is fortunate since the screws are fairly small. Remove the RF shield.

Changing The Options

Locate the row of approximately eight small, vertically-mounted option diodes on the CPU board. They are labelled D65 through D72, and are located near and perpendicular to six-pin inline connectors 54 and 55, and parallel (and directly adjacent to) eight-pin connector 53. Behind connector 53, you may see another row of option jumpers; in my R5000, most of the diodes in this row were not installed. They are numbered D73-D79. Note that D65-D72, D73-D79, and connector 53 (which goes to the front panel keyboard matrix) are all read by IC53, an 82C55 PIO, which strobes the cathodes of one of the three rows of diodes and then reads the anode side of each diode in the row in parallel; it is pulled up by resistor pack R850 unless the diode is connected, in which it is pulled down by the (negative-going) strobe.

You enable one of the options by cutting the top loop of the wire coming out of the anode end of the diode (remember that these are vertically mounted diodes, so the end which is sticking up forms a loop). It is suggested that you just cut through the wire carefully, and bend it slightly to one side; then if you want to disable the option in the future, you can carefully re-solder the connection without having to solder a new diode onto the board.

The jumpers we are concerned with are D65-D72. Note that the other row of diodes (D73-D79) are also option jumpers, but they are not documented in the R5000's technical manual; the manual's parts list simply says that D73 is installed in Australia, and D74-D76 are installed in Europe. Only one of these (I think D79) was installed in my receiver; and the parts list doesn't say what it is for. I'm interested in hearing from anyone who may know what these undocumented jumpers do.

The meaning of each jumper is as follows:

D65: Selects whether the display will show in 10 Hz increments (diode present) or in 100 Hz increments (diode absent). As shipped, the diode is present, which is probably what you'll want since it gives a higher resolution to the display. I don't know if it affects tuning; the radio does tune in 10 Hz increments with the diode installed.

D66: Controls whether the mode buttons will generate a morse-code letter through the speaker when depressed (diode present) or will simply beep when depressed (diode absent). As shipped, the diode is present, and morse-code letters are generated through the speaker.

D67: Controls whether FM mode will step in 2.5 kHz increments (present) or 500 Hz increments (absent), when you have the front-panel step switch "on" (STEP displayed on the display). This applies to HF-band FM; VHF-band FM (with the VC20 installed) already stepped in 500 Hz increments. As shipped, the diode is present, and steps are in 2.5 KHz increments.

D68: Controls the "BUSY STOP" feature. With the diode present, scanning will stop when the BUSY light comes on only in AM and FM modes. With the diode absent, scanning will stop when the BUSY light comes on in all modes. Note that this is the modification some radio stores sell as an extra feature, by connecting the "dimmer" switch to the option diode so that you can turn this on or off from the front panel.

D69: "Memory search" feature. This is (in my opinion) the best of the extended options. The diode is shipped present; as shipped, the memory search feature is disabled. If you remove the diode, you enable the feature. With the feature enabled, when you press the orange M.IN key the first time (to allow you to select which memory you want to store a frequency in), the silver "1MHz Down/Up" buttons on the front panel allow you to step through the set of *unused* memory positions. This lets you select a memory to store in without having to scan through all the ones you've already stored in you enable this feature. Also, when you are in the memory mode (i.e., the mode in which M.CH is displayed on the display) and not storing into memory (normal operating mode), the Down/Up buttons step through the set of *used* memories, skipping any unused ones.

D70-71: These jumpers are currently unused (according to the manual).

D72: I have not tried this option. According to the manual, if you remove the jumper, you are prevented from storing into a memory channel which has a frequency stored into it. I don't know whether this completely disables all M.IN operations, or just the attempts to modify used channels; or whether there is a way to get around this (e.g., whether the CLEAR button still works).

That's all the options that are documented. I've tried all except D65 and D72; I didn't want to take the radio apart multiple times to try those, since they didn't sound like particularly desirable features. If anybody tries them (particularly D72) and finds details of how they work use the IC54 socket on the CPU board (which you access as described above); the 4040 plugs in to the IC55 socket next to it. Another IC to know about in connection with this option is IC56, a 7404 inverter, which is what drives the serial port socket in back of the radio. According to the manual, the pin assignment on this socket is as follows:

3 - RXD (in) 4 - TXD (out) 5 - CTS (in) 6 - RTS (out)



I haven't actually tried these to verify them. Also, there is a CMOS 82C51 available, and an NMOS 8251. According to the manual, the NMOS 8251 is used; although most of the other parts on the board are CMOS. I don't know whether the IC kits they provide actually supply the CMOS or NMOS version.

In add SY light oks like maybe the person who designed the receiver intended for these to be external controls, and then they put them inside when they packaged the receiver.

What's interesting about these controls is that they, and the IF shift control (and another control used in aligning the receiver) are read through an A/D converter. They actually serve as digital inputs to the microprocessor. It's unfortunate that they didn't use one of the channels on the A/D converter to read the signal strength meter (so you could find the signal strength (AGC level) through the serial port) instead of using them for these relatively minor functions. EEB in Vienna sells a modification for the R5000 which allows their CRIS computer interface to read the AGC level, but I don't know how it works.

One other thing to note involves installing the optional filters. First, I found that the AM filter which came with the radio introduced a whistle into most AM signals. I replaced it with the optional AM filter, and it eliminated the whistle (and gave a "fuller" sound to the AM).

Also, note that if you install other filters, you have to install them "in order" -- in other words, the narrowest has to go in the N position, the next narrowest in the M1 position. Note that the M2 position is already occupied (as shipped) by a high-quality SSB filter. The reason they have to be in order is that as you select narrower and narrower filters, the wider filters remain in the circuit, so if you put a narrower filter in M1 than you have in N, it will stay enabled even when you select the wider filter. causing the wider filter to have no effect.

It's a little unfortunate that it works that way, since the MI filter is only enabled by the switch (not in AUTO mode), which would be ideal for the very-narrow YK88CN filter. I have identified a modification to make MI be selected only when the switch is in the MI position; it involves disconnecting 1/2 of a dual diode and soldering a diode between two prodthe PK232.

Kenwood Telephone BBS

Computerized radio addicts should note that Kenwood now operates a telephone BBS Service. It accepts 300-1200-2400 baud rates and operates from 1700-0800 daily and Friday 1700 to 0800 Monday mornings. All times are P.S.T. They have a number of files containing equipment modifications and related items. Call 1-213-761-8284.

Radio Roundup ... by Pete Kemp

 NYC 's WLIB is airing the Morning Show with Mark Riley with a live audience from the Apollo Theater.

The syndicated Comedy Show with host Dick Cavett is getting a new name and host. It will henceforth be known as the Adult Comedy Network, with host Roy Firestone of ESPN fame.

WCCO's Joyce LaMont is leaving after 43 years of service to join up with KLBB.

The Ohio Associated Press has presented WWVA with its third straight award for outstanding news operations.

The American Radio Company of the Air, Garrison Keillor's vehicle for his on air return has been put off for a Nov. 25th start. The show will air over National Public Radio stations. In related matters, some markets are debating whether or not this is in reality a new show OR a revised version of the classic Prairie Home Companion. Due to legal obligations regarding the first refusal rights for airing this show, some stations are engaged in negotiations to see who will air it within their respective coverage areas.

The Radio Game Show has now expanded from KENO into syndication, it is hosted by Mark Richards. The first station to get on the list was WNLK.

After ten years of entertainment reporting at Boston's WEEI, Frank Dolan was given his walking papers in what the station described as a budget cutting move.

Radio Roundup ... by Pete Kemp

WCCO's Howard Viken has announced his retired from the station November 1st, after a 39 year association.

Bill Bransome is pulling the plug at KYW after a 24 year run. Long associated with the news and sports areas, he was also the off-stage announcer for the popular Mike Douglas TV Show which broadcast from KYW-TV in the City of Brotherly Love for many years.

						-via Mark Strickert			
				PE	RS BROADCASTS				
STATE/CITY ALASKA	STATION	DIAL	TIME		STATE/CITY NEW JERSEY	STATION	DIAL	TIME	
Nome Sitka	KICY	850AM 1230AM	10:30pm 8:00am		So. Belmar NEW YORK	WADB	95.9FM	7:30am	
ARIZONA	KIFW				Grand Island/				
Phoenix CALIFORNIA	KASA	1540AM	3:00pm		Niagara Falls Syracuse/	WHLD	1270AM	7:45am	
Claremont	KTSJ	1220AM	9:30am		Watertown	WOTT	1410AM	8:00am	
Thousand Oaks	KRCL	101.5FM	9:00am		NORTH DAKOTA	WNCQ	97.5FM	8:00am	
Safety Harbor/					Bottineau	KBTO	102FM	9:00pm	
Tampa Bay Key West	WXCR WJIR	92.1FM 90.9FM	10:00pm 6:00pm		Fargo	KFNW	97.9FM 1200AM	4:30pm 7:00pm	
Cocoa/Orlando HAWAII	wwko	860AM	8:00pm		Devil's Lake	KFNW	95.9FM	7:00pm	
HAWA II Honolulu	KAIM	95.5FM	9:00am		Grafton Grand Forks	KFNW KFNW	100.1FM 104.9FM	7:00pm 7:00pm	
IDAHO Meridian/Boise	KFXD	580AM	7:00pm		Kulm Mandan	KFNW KNDR	102.3FM 105FM	7:00pm 9:30pm	
Bonners Ferry	KBFI	1450AM	6:30pm		St. Thomas	KFNW	102,3FM	7:00pm	
ILLINOIS Centralia	WILY	1210AM	9:30am		Williston OHIO	KEYZ	1360AM	6:30pm	
Chicago	WJMK	104.3FM	10:30pm		Bellevue	WNRR	92.1FM	10:05am	
Effingham	WCRA WCRC	1090AM 95.7FM	7:00am 7:00am		Columbus Gallipolis	WMNI	920AM 990AM	7:30am 7:45am	
Litchfield	WSMI	1540AM	4:00pm			WYPC	101.5FM	7:45am	
Metropolis	WMOK	106.1FM 920AM	8:05am		Mt. Vernon New Albany	WMVO WCVO	1300AM 105.5FM	8:30sm 7:30pm	
Murphysboro	WINI	1420AM	9:30pm		Paris	WRMU	91.1FM	12:30pm	
Ottowa Paxton	WCMY WPXN	1430AM 105FM	12:30pm 7:00am		Port Clinton Sidney	WOSE WMVR	94.0FM 1080AM	7:30am 10:00am	
Plano	WSPY	107FM	6:35pm		Sidney OKLAHOMA			201010411	
Rockford Vandalia	WGSL WPMB	96.7FM 1500AM	6:30pm 8:30am		Hobart OREGON	KTJS	1420AM	8:30am	
Peoria	WECU	88.5FM	4:30pm	Tue	Astoria	KPDQ	96.7FM	6:30pm	
INDIANA Delphi/					Bend Portland	KPDQ KPDQ	96.7FM 93.7FM	6:30pm 6:30pm	
Monticello	WNJY	102.9FM	8:00am		Prineville	KPDQ	103.9FM	6:30pm	
French Lick Jasper	WFLQ WITZ	100FM 990 A M	11:30am 9:30am		Redmond Salem	KPQD KYKN	97.7FM 1430AM	6:30pm 7:30pm	
Mnncie/		00011111	0.00		Sesside	KPDQ	97.7FM	6:30pm	
Hartford City IOWA	wwwo	93.5FM	9:30am		PENNSYLVANIA Avoca/Scranton	WARM	590AM	8:00am	
Cedar Rapids	WMT	600AM	10:00pm		Doylestown	WBUX	1570AM	7:05am	
Decorah Des Moines	KWLC	1240AM 97.3FM	5:00pm 7:00pm		Latrobe Lock Haven	WCNS WBPZ	1480AM 1230AM	9:00pm 10:00am	
Humboldt	кнвт	97.7FM	6:30pm		McConnellsburg Philadelphia	WVFC	1530AM	10:00am 6:30am	
Mason City Mason City	KGLO KCMR	1300AM 98.3FM	6:30pm 8:30pm	Tue		WELN	95.7FM 1480AM	6:30am 8:30am	
Sheldon	KIWA	1550AM 105.5FM	6:00pm		Shippenburg SOUTH CAROLINA	WFGN	1160AM	12:30pm	
Shenandoah	KMA	105.5FM 960FM	8:30sm		Gaffney SOUTH DAKOTA				
Rockwell City/ Twin Lakes	KTI.B	105.5FM	6:00pm		Rapid City Watertown	KVSR	97.9FM 1480AM	9:00pm 10:10am	
KANSAS		200.02 11	-		Yankton	WNAX	570AM	9:00pm	
Belleville Great Bend	KREP KVGB	92FM 1590AM	8;00am 5:30pm		TEXAS Brenham	кттх	1280AM	6:00pm	
Phillipsburg	KKAN	1400AM	5:30pm			KWHI	106.3FM	6:00pm	
KENTUCKY	KQMA	92.5FM	5:30pm		Fredericksburg Halletsville	KNAF KPJH	910AM 1520AM	9:30am 7:00am	
Winchester/					San Antonio	WOAI	1200AM	8:00am	
Lexington MICHIGAN	WHRS	1380AM	8:30am		Victoria Spearman	KAMG KRDF	1340AM 98.3FM	7:30am 9:05am	
Ann Arbor	WPZA	1050AM	10:30am		Vernon WASHINGTON	KVWC	102.3FM	6:30pm	
Traverse City Gravling	WLDR WGRY	101.9FM 1590AM	7:00am 9:30am		Spokane	KGA	1510AM	9:30am	
Grayling MINNESOTA	KDNW	90.5 FM	10:00am		Tacoma WISCONSIN	ккмо	1360AM	10:30am	
Duluth Fergus Falls	KBRF	1250AM	7:30am		Appleton	WRVM	95.3FM	8:00pm	
Hibbing	WMFG KLQP	1240AM 92.1FM	6:30pm 5:00pm		Eagle River/ Three Lakes	WRVM	107.1FM	8:00pm	
Madison Mankato	KTOE	1420AM	7:30am		Holmen	WKBH	1570FM	5:30pm	
Marshall	KMHL WCCO	1400AM 830AM	8:00am 10:30pm		Iron Mt. Land-O-Lakes	WRVM WRVM	107.1FM 106.3FM	8:00pm 8:00pm	
Minneapolis Montevideo	KDMA	1450AM	8:30am		Madison	WNWC	102.5FM	6:30pm	
Osakis	KBHL KPRM	104FM 870AM	10:30pm 8:30am		Mauston Merrill	WRJC WRVM	1270AM 100.1FM	8:00am 8:00pm	
Park Rapids		97.5FM	8:30am		Neenah/Menasha	WROE	94.3FM	6:30pm	
Pequot Lakes St. Cloud	KTIG KCFB	100.1FM 91.5FM	9:00pm		Oshkosh Phelps	WRVM WRVM	92.1FM 103.9FM	8:00pm 8:00pm	
Spring Grove	KQYB	98.3FM	5:00pm		Ripon	WRVM	92.1FM	8:00pm	
Thief River Falls	KTRF KWLM	1230AM 1340AM	6:30pm 6:30pm		Sheboygan Sturgeon Bay	WHBL WDOR	1330AM 910AM	5:30pm 6:30pm	
Willmar MISSOURI							93.9FM	6:30pm	
Columbia Jefferson City	KWWC KWOS	90.5FM 1240AM	5:30pm 8:30am	Fri	Suring Viroqua	WRVM WVRQ	102.7FM 1360AM	8:00pm 8:00am	
Sedalia	KDRO	1490AM	10:30pm		Wausau	WRVM	100,1FM	8:00pm	
MONTANA Great Falls	KMON	560AM	7:30am		WYOMING Lander	KOVE	1330AM	6:30am	
Kalispell	KALS	97.1FM	9:30pm						
Red Lodge Scober	KRBN KCGM	1450AM 95.7FM	7:30am 1:30pm	Sat	*Unless otherwise noted, a on Sunday.	l broadcast times	of Lutheran Vesper	s are	
Scobey NEBRASKA					on ounday.				
Beatrice Blair	KWBE KDCV	1450AM 91.1FM	7:00am 1:30pm						
Lexington	KRVC	880AM	7;00pm						

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EXPIRATION DATE		EVENING PHONE NUMBER _	
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