



DX NEWS

The magazine of the
National Radio Club

— SINCE 1933 —

Volume 57, No. 14 - January 15, 1990 (ISSN 0737-1659)

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CPC Tests Directory

- 1-15: KCAM-790 Glennallen, AK
- WKEN-1600 Dover, DE
- KABI-1560 Abilene, KS
- 1-21: WFIW-1390 Fairfield, IL
- 1-22: WILD-1090 Boston, MA
- 1-28: WAGL-1560 Lancaster, SC
- 2-4: WRSW-1480 Warsaw, IN
- 2-5: WCIL-1020 Carbondale, IL
- 2-18: WLUS-980 Gainesville, FL
- 2-19: WIVV-1370 Vieques, PR

KCAM-790 - P. O. Box 249 - Glennallen, AK 99588 will conduct a DX test from their sign-off approximately 0410 EST to 0500 EST January 15. Programming will consist of info on the Glennallen area, the missionary service that operates KCAM and ID's every 5 minutes. Please send your reports to "Dan" at KCAM. Arranged by the Colorado CPC Machine for the NRC.

WKEN-1600 - Dover, DE will test Monday morning January 15, 1990 from 0200-0400 ELT with tones, music, many ID's, with 5000-watt day pattern. Pre-paid phone calls accepted at (302) 674-1234. Reports go to Dave Schmidt - WKEN - P. O. Box 553 - Dover, DE 19903 (arranged by Dave).

KABI-1560 - P. O. BOX 69, Abilene, KS will conduct a DX TEST from 0530-0600 Eastern Local Time and on. The date is Monday Morning January 15, 1990. The program will run at 250 watts 0530-0540, 140 watts 0540-0550, and 20 watts 0550-0600. At 0600 KABI will simulcast KSAJ-FM with oldies. The test will consist of, but is not limited to, "voice, tones, frequency sweeps, EBS tones, pink noise, music or many combinations. Tune In." (signed) E. Joe Eck, Chief Engineer and Program Director. Arranged by the Colorado CPC Machine for the National Radio Club.

WFIW-1390 - P.O. BOX 310, Fairfield, IL 62837 will conduct a DX test on Sunday Morning January 21, 1990 from 0600 to 0630 Eastern Local Time. This test will be run using 1000 watts non-directional and will consist of march music, tones, and frequent voice and code ID's. Our thanks to Mr Gil Wallace at WFIW. Arranged by the Colorado CPC Machine for the National Radio Club.

WILD-1090 - Boston, MA will conduct a DX test on January 22, 1990 from 2:00am ELT to 2:30 am ELT. Test will be conducted using 5000 watts non-directional. Programming will consist of 1 kHz test tones, Morse Code ID's

and vocal ID's by both male and female announcers. Correct reports will be verified by Mr. Michael Klein NV1L, P.O. BOX 2181, Lynn, MA 01903 (or report via NV1L QSL Bureau). Arranged by Michael Kline with assistance from Peter George and the Colorado CPC Machine for the NRC.

WAGL-1560 - P. O. BOX 28, Lancaster, SC 29720 will conduct a DX TEST on Sunday Morning January 28, 1990 from 0400 to 0430 Eastern Local Time. WAGL will be broadcasting with its daytime 50,000 watts into a directional pattern. This broadcast will be in C-QUAM Stereo and if you do have your stereo light come on please let them know. Please direct reports and thanks to Mr. B. L. Phillips, President. Arranged by the Colorado CPC Machine for the National Radio Club.

WCIL-1020 - P.O. BOX 700, Carbondale, IL 62903 will conduct a Special DX test broadcast on Monday, February 5, 1990 from 0630 to 0700 ELT. The test will consist of a special test announcement, Morse Code ID's and music. Reception reports are requested. All reports should be sent to Mr. Paul H. McRoy, General Manager. Arranged by the Colorado CPC Machine for the National Radio Club.

WRSW-1480 - P. O. Box 1448, Warsaw, IN 46580 will conduct a special DX test on February 4, 1990 from 0530 ELT thru 0555 ELT s/on. The test will be conducted using the 1 kW daytime facility. At 0555 WRSW will switch to 500 w. directional. The test will consist of some marches, legal ID's, code ID's and will be interspersed with oldies from their automated normal programming. "In addition to acknowledging reports I will award a special prize to the furthest report of our signal. Regards" James L. Swearingen, Chief Engineer. Our thanks to Mr. Swearingen! Arranged by the Colorado CPC Machine for the National Radio Club.

WLUS-980 - P. O. Box 1068 Gainesville, FL 32602 will conduct a DX test on Sunday morning, February 18, from 0400- to 0430 EST. Test will consist of voice and code ID's, an explanation of the test, and fast-tempo big-band style music. Power will be, from 0400-0417: 5 kW, 0417-0418: .5 kW; 0419-0421: .25 kW; 0421-1423: .166 kW; then, return to 5 kW. Code ID's will be used during all segments. Our thanks to Mr. Tim McGuire, CE, for this test. Arranged by the Colorado CPC Machine for the National Radio Club.

WIVV-1370 - P.O. BOX 338, Vieques, PR 00765-0338 will conduct a special DX TEST on February 19, 1990 from 0400 to 0426 Eastern Local Time. At 0426 WIVV will sign on for its normal broadcast day. The test will be run with 5000 watts non-directional. This test will consist of Christian music with frequent voice and code ID's. Our thanks to Mr James C. French Operations Manager. Arranged by the Colorado CPC Machine for the National Radio Club.

OOPS: WKMT-1220 was a no-show January 6.

THE WORLD'S OLDEST AND LARGEST ALL MEDIUM-WAVE DX CLUB

AM Switch

Jerry Starr
c/o WHOT Radlo
4040 Simon Road
Youngstown, OH 44512-1320

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

CALL LETTER CHANGE

Old call: New call:
760 KNCI KS Overland Park KCCV

APPLICATIONS/GRANTS FOR NEW STATIONS

None

APPLICATIONS FROM EXISTING FACILITIES

1360 KWWJ TX Baytown: day power to 5000 watts.
1490 KLR MN Redwood Falls: reduce power to 470/470 watts

GRANTS TO EXISTING FACILITIES

860 WGUL FL Dunedin: night power to 1500 watts, antenna changes
1540 KLAU CA Soquel: relocate XR, antenna to 113

OTHERNESS

760 KCCV KS Overland Park: programming has moved to this new facility from 1510 kHz
WENO TN Nashville: new station is ON THE AIR with REL.
910 KVVQ CA Hesperia: new station has been testing ON THE AIR
1200 WOPA IL Chicago: after nearly a year of testing this new facility is ON THE AIR with Spanish programming
1310 KIOT CA Barstow: station is SILENT pending sale
1380 WMPS TN Millington: silent station is back ON THE AIR
1400 KGBX MO Springfield: silent station is back ON THE AIR
1420 WIMS IN Michigan City: CP for synchro in LaPorte, IN was turned in according to the station, cross it off
1510 KIDZ MO Independence: station is SILENT since KCCV moved to 760 kHz, will return following sale completion
1570 KYCR MA Golden Valley: application for 500 watts at night has been DISMISSED
1580 WMTI PR Arecibo: synchronous XR is now ON THE AIR
WMRE TN Knoxville: station is SILENT
1600 KOGT TX Orange: application for power decrease is DISMISSED
1620 "WENU" NJ New Brunswick: as part of a massive sweep by the FCC and their new "get tough" policy on illegal operations, this oft-heard pirate station has been "busted" and is OFF THE AIR. From the FCC's list of bootleggers who have been located and closed down, this is the only one we recognized as being reported in DDXD, all others are evidently FM or shortwave. The infamous "WHOT" in Brooklyn was shut down in July but at the time they were broadcasting on FM only according to the release.

THANKS to the following for their tips and contributions: DICK TRUAX, WENDELL FORD, WAYNE HEINEN and M Street Journal.

73 and Good DX, *Jerry & BKF* Jerry Starr & Buffalo K. Poonman

WJXN

"The Colonel, Your Gospel Station"

The Jackson Broadcasting Co., Inc.
P. O. Box 700 - Jackson, Mississippi 39205



Domestic DX Digest - East

William Hale
734 Burselson
San Marcos, TX 78666

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

MEDIUM WAVE ramblings

■ This edition of DDXD-E is inspired by all the full stomachs of DXers pushing away from Holiday tables everywhere. Groan!! There are gravy and cranberry spots all over a couple of reports.
■ I've gone over Issues 6 through 11 and found a few new Graveyard records. Details at ten. I mean after the reporter credit section.
■ From the DDXD-E Mailbag...and I quote: about your comment in the WJXN-1510 item in the SPECIAL section in Issue 11, whoever said all stations received some nighttime power was dead wrong. Most daytimers on regional and Canadian or Mexican clear channels were automatically given nighttime authorization but no daytimer on a U.S. or the Bahamian clear channel was automatically authorized to operate at night. A few applied for nights but most are still daytimers although many do have PSSAs which are good for a maximum of two extra hours (less in most cases). Okay, I'll buy that. And another... While I think the contests are a good way to get members to report to the DDXD columns, I wish that they'd add a little more info to their reports. An item like "1360 WBAD PA ANYTOWN - 12/12 0600 fair with sign-on" is, in my opinion, next to useless since just about every station on a regional frequency that has a PSRA signs on at 0600 LT. The tips would be a lot more helpful if some unique info was added like "1360 WBAD PA ANYTOWN - 12/12 fair with sign-on with SSB; female announcer said they were owned by Big Time Broadcasting Co. - The Sign on Edition of Bad news followed by C&W mx". With that little extra info, the rest of us now have something to go on. I agree with the writer that just a little bit of added info by contestants would help other DXers in IDING a station. But keep in mind the reason the contestant is sending in the report: to get contest points, not to help you. I doubt I would receive half the reports from many DXers if it weren't for the contests. At the beginning of the season, I asked for opinions on giving contest entries their own section. I received bi-lateral response, but none more than a "I don't care if you do or don't". If there were such a section, only George Sherman would have to read that part of the column. Or, I could type up all the contest stuff and send it to George. Better still, the contestants could just send in their stuff to him and I would be saved hours of typing. But the rules say the loggings have to appear in DDXD-E or -W. Frankly, I enjoy typing up 50 two-liners much more than 5 tedious 10-liners. A few years back, I tried to limit the logging to 3 lines. But found that only about 2% exceeded that limit in the first place, so why make a big deal out of it. Today, almost anything goes. The more details, the better the logging. However, if the report just rambles on with the same stuff, I'll cut it off or paraphrase non-essential info. I guess I've gotten off the initial theme of contest loggings, but I hardly editorialize, and heck, it is MY column, hi. Thanks for your input. Anyone else??

SPECIAL

760 KCCV MO INDEPENDENCE - 12/21 noted simulcasting on both this frequency and 1510 with these CLs, so stint as KNCI was short-lived; still noted simulcasting on 12/26; I assume this is the city-of-license as KNCI's original permit was for Overland Park, KS (RD-IA)
810 WXLN HA HAHIRA - 12/16 1704 w/From South Georgia to North Florida, we've got the music you like...home of Christian music...WXLN, Light 81; fair signal with WJXL nulled; new station (KVJ-GA) [1st report of WXLN-Ed.]
1200 WOPA IL CHICAGO - 12/17 0908 hrd with SS mx, IDs as WOPA, Chicago along with something in SS (I don't know Spanish, hi); good all the way from Madison to Milwaukee (MK-WI)
1330.3 WWCH PA CLARION - 12/20 & 12/21 0600 and on; 300 hz high with C&W mx and Radio 13 non-IDs; several Clarion County mentions and ad for business in Frogtown; very loud het making a mess of 1300; still off frequency as of 12/21 (CR-ON)
1420 WIMS IN MICHIGAN CITY - according to GM Ron Miller, sked is 0600 (0700 Sat, 0800 Sun)-2400 (2200); please note this in your logs (RD-IA)
1580 WAMJ IN SOUTH BEND - sked is 0600-2400 (RD-IA)

UNIDs AND UNIDs ID

1340 UNID ?? - 12/24 0745 fair with Star Country C&W mx pgm; which Canadian stn carries this on 1340? (SA-MB)

UNID ?? - 12/26 0925 poor, fading up with man asking you to call 591-TALK, then creamed by WRIG (SA-MB) [?] TALK is ABC Talkradio's number-Ed.]

DX/EQUIPMENT TESTS

720 WGN IL CHICAGO - 12/10 0215 hrd testing; off the air entirely later in the morning, but nothing hrd due to local noise (KDF-IL)

PIRATE ACTIVITY

1620 WJBI NY NEW YORK STATE - 12/16 2330+ noted again, but much poorer level; carrier cutting on & off (GT-FL)

MIDNIGHT TO MIDDAY

640 WMLJ OK NORMAN 12/27 0700 good with sign-on (RD-IA)
 660 WBLX AL FAIRBORN 12/15 0750 w/Classic 660 & Black gospel format; with WESC null'd (KVJ GA)
 750 KMMJ NE GRAND ISLAND 12/27 0729 good with sign-on (RD-IA)
 790 CKSO ON SUDBURY 12/27 0717 good with Canada Coast to Coast net ID and song by Neil Young; many mentions of Sudbury in local ads (RD-IA)
 820 CHAM ON HAMILTON - 12/16 0953 with C&W ad for Rebecca Flea Market; ISD: If you like to dream, you'll like 820 Cham; good in WBAP null (GT-FL)
 850 WRMR OH CLEVELAND - 12/4 0420 fair with mx by Frank Sinatra→850 WRMR ID and wx (20+) (RD-IA)
 900 WFIA KY LOUISVILLE - 12/11 0600 weak with brief ID after wx; #4 from Fleischakertown (RD-IA)
 950 WSPA SC SPARTANBURG - 12/25 0200 fair with The Best of King→sports promo & ID: AM 950 in Spartanburg, WSPA; SC #2 (RD-IA)
 1010 CBR AB CALGARY - 12/4 0729 fair with sign on (RD-IA)
 1030 KTWO WY CASPER - 12/11 0200 fair with sign off (RD-IA)
 1090 CKKW ON KITCHENER - 12/25 0316 with wx (69) and AM109 ID→annct of next song by Kenny Rogers; fair under KAAV; logging #900 [Oh yea? Name 'em, hi-Ed.] (RD-IA)
 1100 WUBS IL HARRISBURG - 12/25 0850 poor with Christmas mx, then It's 7:52 in Harrisburg, Illinois and 14° by female announcer, then faded; new & IL #50 (SA-MB)
 WYKR VT WELLS RIVER - 12/20 0805 with local nx; lead story was death of Herb Ashe of Campton, NH & Hampton County Sheriff for 36 years who passed away in Hanover, NH→ad for hospital (phone 747-2761) ending with Check your local newspaper and listen to WYKR for details (I couldn't make out the reason unless it was a contest and the hospital was giving free appendectomies to the winners) hopefully it wasn't a prize equal to that of Herbs, hi-Ed.]; poor but alone thanks to excellent null of WWWE (CR-ON)

Bibletime Ministries, Inc.

WBCE Gospel Radio

P.O. Box 128
 Wickliffe, Kentucky 42087

1110 CKTY ON SARNIA - 12/23 0601 fair with nx focusing on Canada including local events→Christmas mx by C&W stars; new (after almost a year of trying) & Ontario #68; in partial KFAB null (SA-MB)
 1150 KSEN MT SHELBY - 12/26 0859 fair with wx for Shelby & area, CLS; in CKX null and a mess of noise; new & Montana #38 (SA-MB)
 1200 WOAI TX SAN ANTONIO - 12/4 0558 XLNT with sign-on (RD-IA)
 1210 WSBI TN STATIC - 12/9 0700 with sign-on annmt, USA Net Nx, local wx with ads for Byrdstown & Albany, KY businesses; station #2500 hrd on MW (Congrats-Ed.) (KDF-IL)
 1350 WXCL IL PEORIA - 12/15 0715 fair with TC and ment of the WXCL Information Center; PEORIA #4 (RD-IA)
 1390 WROA MS GULFPORT - 12/11 0540 fair with ad for tire store→ID & Little Drummer Boy (RD-IA)
 1430 WXTZ IN INDIANAPOLIS - 12/21 0605 w/wx, EZ 1430 and mention of AM Stereo with semi-local WGFS null'd; 1st time with new CLS (KVJ-GA)
 1440 KWEZ LA MONROE - 12/11 0630 fair with state & nat'l nx+wx; ments of Baton Rouge & I-12 in nx stories (RD-IA)
 1450 KGIW CO ALAMOSA - 12/25 0830 fair with wx followed by KGIW ID, then faded out under KBMW; new & Colorado #52 (SA-MB)
 1460 KKOY KS CHANUTE - 12/15 0659 fair with dual AM-FM sign-on (RD-IA)
 1480 KLEE IA OTTUMWA - 12/8 0059 fair with sign-off (RD-IA)
 1490 WAKT VA WAYNESBORO - 12/20 0646 on top with end of Christmas greeting from a Waynesboro business followed by a greeting of their own: Best wishes to everyone for a safe and happy new year. Thank you for being a part of what we've done this year and we're looking forward to having you with us in the year ahead on 1490 ZKT; Virginia #145 (CR-ON)
 1540 WKIE VA RICHMOND - 12/15 0545 w/Urban Contemporary mx, wx and cancellations (KVJ-GA)

1580 WAMJ IN SOUTH BEND - 12/11 0005 weak with sign-off (RD-IA)
 1590 WONX IL EVANSTON - 12/11 0301 good with EE non-legal ID: You're listening to WONX, Chicago→SS mx (RD-IA)
 1600 KCRG IA CEDAR RAPIDS - 12/17 0100 fair with sign-off under KATZ (RD-IA)
 WKGK VA SALTVILLE - 12/16 0806 w/GOS mx, trading post-type program (KVJ-GA)

MIDDAY TO MIDNIGHT

KGRV CHRISTIAN RADIO 700 AM
 P.O. BOX 1598 • WINSTON, OREGON 97436

540 CJSB ON OTTAWA - 12/19 1700-1708 w/nx, transit info, traffic info, 54 Rock Ottawa said quickly; medium fair; 2nd report for QSL (DT-ON)
 580 KKSU KS MANHATTAN - 12/19 1750 with NPR's All Things Considered until 1759 wx report for Manhattan; lost @ 1800 with probable power, cut; fair with CKWW null'd; super-potent WHB-710 & WHBQ-680 prompted me to try for this one and it paid off; #30 on 580 (CR-ON)
 WHP PA HARRISBURG - 12/19 1634-1639 w/WHP Newstime, 4:35; WHP Weather; poor with CKEY splash (DT-ON)
 630 WMAL DC WASHINGTON - 12/19 2253-2345 w/HKY summary, Tuesday Night Talk Show with local ads incl Aero Video in Washington; This is WMAL in Washington; poor-medium with CMTB splash on one side, CFGM on other! (DT-ON)
 660 WXIC OH WAVERLY - 12/10 1625-1635 w/GOS mx, ad for Ford dealer; weak under WFAN (GV-PA)
 WESC SC GREENVILLE - 12/9 1625-1639 w/South Carolina FB, sign-off; fair under WFAN (GV-PA)
 760 WCHP NY CHAMPLAIN - 12/19 1605-1608 brief atop WJR with James Dobson's Family Commentary, ad for Christian Book Depot (GV-PA)
 770 WVNN AL ATHENS - 12/4 1728 fair with ID and traffic ✓ for metro Huntsville area (RD-IA)
 KUOM MN MINNEAPOLIS - 12/4 1729 fair with sign-off (RD-IA)
 WYRV VA CEDAR BLUFF - 12/19 1620-1630 w/nx with mention that county schools [will be] closed until January 2nd; C&W mx, Heart of Country slogan; weak under WABC (GV-PA)
 810 WJLT VA CROZET - 12/20 1640 with soft ROK & the Lite-102 Weather Forecast followed by ad for a business in Charlottesville; poor with super-heavy splash from CKLW; 1st catch on 810 since 12/11/78 (CR-ON)
 830 WADU LA NORCO - 12/16 2340 very good with EZL mx & This is beautiful music radio, WADU AM 830; sounded like much more than 750 watts! (GT-FL)
 WADU LA NORCO - 12/18 1800 w/EZL mx, ID while on 5000 watt day power, then nx by male & female after power-down to 750 watts; good, then fair (WPT-DC)
 WMMI MI SHEPARD - 11/28 1653-1715 with sports, local & state nx, then full sign-off; good over WLND/WCCO (GV-PA)
 WLND OH CORTLAND - 12/15 1620 w/The Soft Touch, AM 830, many local ads, wx advisories & cancellations; XLNT signal (KVJ-GVA)
 840 WBHY AL MOBILE - 12/18 1752 w/talk by male; fair under Cuban; ex: WMOB (WPT-DC)
 850 KOA CO DENVER - 12/16 2344 noted in passing at fair/good level with call-in show (GT-FL)
 KFUD MO CLAYTON - 12/3 1828 weak with sign-off under KOA (RD-IA)
 860 WGUL FL DUNEDIN - 12/14 1804 w/Tampa Bay Weather, FNN Financial News, AM/FM ID, Music of your Life (KVJ-GA)
 890 KBYE OK OKLAHOMA - 12/10 1813 weak with sign-off under WLS/KVOZ (RD-IA)
 930 KRKY CO GRANBY - 12/11 1903 good with end of SNN Nx→dual KRKY/KRKF AM-FM ID & wx (RD-IA)
 990 WEEB NC SOUTHERN PINES - 12/16 2330-2345 w/Christmas mx, local ads, Southern Pines mention; listed as D1; fair, lost in shuffle by 2300; topped WE20! (DT-ON)
 1130 WSJP KY MURRAY - 12/17 1716 on top with a couple of call IDs: From the university city, we're WSJP, Radio 11 and you've found the best country music on radio. Now tell a friend about it. WSJP; good with WCXI null'd (CR-ON)
 1140 WIXC AL HAZEL GREEN - 12/3 1732 fair with sign-off (RD-IA)
 1150 KEZQ AR NORTH LITTLE ROCK - 12/4 1753 fair with ID: Travelers Information Radio, AM 11-50→info for Conway Cemetery State Park; many ments of Little Rock (RD-IA)
 1180 WMLX KY FLORENCE - 12/12 1645-1700 with BBD mx, ad for Eagle Pet Food dealer, traffic report with ad for AAA; fair under WHAM (GV-PA)
 WHJM TN KNOXVILLE - 12/12 1655-1724 with oldies, slogan: Superpower 1180; fair with WHAM/WMLX (GV-PA)

- 1190 WAJL FL PINE CASTLE - 12/14 1720 w/wx report (34° low, 68° high); good, then went out suddenly (WPT-DC)
- 1220 WTCN MN STILLWATER - 12/16 1716 requesting listeners to stop by the WTCN studios at 104 N. Main to pick up a free #2 gift certificate good on a purchase of a Christmas tree as ?Adie's Tree Farm?PSA by female about Christmas dinners for the needy; nicely over WGAR for my 1st catch on 1220 since 1/26/76 (CR-ON)
- 1230 WTIV PA TITUSVILLE - 12/22 1746 w/ads, ID by female; fair, then faded into 6Y pile (WPT-DC)
- 1260 KTTS MO SPRINGFIELD - 12/16 2247 fair with ad for Springfield Lincoln-Eagle dealer, then sports (GT-FL)
- 1270 KESS TX FORT WORTH - 12/18 2224 almost good with SS-accented EE anncr reading letters; anncr tended to switch between EE & SS in mid-sentence; frequent IDs, Ft Worth mentions & mostly ranchera mx (GT-FL)
- 1300 WQPM MN PRINCETON - 12/16 1723 just hit 1300 in time to hear ...in Princeton. Getting back to the music here's Exile and Give Me One More Chance on WQPM; no sign of usuals WERE/WOOD (CR-ON)
- 1370 KCRV MO CARUTHERSVILLE - 12/18 2158 fair with wx:29 degrees right now at KCRV (RD-IA)
- WDEF TN CHATTANOOGA - 12/10 1950 good with ID and ad for the Country Kitchen in East Ridge (RD-IA)
- 1400 WDNV NY DANVILLE - 12/13 1709-1713 w/nx, req [??-Ed.] for NWS, call 335-9369; fair 'til drowned out @ 1713 (DT-ON)
- 1490 WLPA PA LANCASTER - 12/15 1735 nicely on top for several minutes with closings and cancellations due to snow in segment called Operation Snowbird sponsored by Hallinger's Lawn & Garden in Lancaster, Hersey, and Ephrata (they sell snow blowers, of course) [I'll pass, thank you-Ed.]; into a WLPA SID and back into the jumble (CR-ON)
- 1510 KAGY LA PORT SULPHUR - 12/4 1759 fair with sign-off (RD-IA)
- 1570 WMYM WI MINOCQUA - 12/15 1653 briefly atop the mess with EZL NOS mx and ad for Time and Treasures in downtown minocqua; quickly lost to CHLO; Wisconsin #105 (CR-ON)
- 1580 WPGC MD MORNINGSIDE - 12/17 1650-1700 w/Business Radio sign-off, owners, address; fair (DT-ON)
- WWSJ MI ST JOHN'S - 12/17 1650-1700 w/WWSJ on 1580; OLD; still on after WPGC sign-off; poor (DT-ON)
- KNIM MO MARYVILLE - 12/15 1845 on PSSA with ad for Maryville Hi-V Food Store→contest promo ending with:All you have to do is register at any First National Savings and you're on your way. Enter today and listen to KNIM for further details; poor but over a weak CBJ (CR-ON)
- WVOF NC CAMP LE JEUNE - 12/15 1705 with promo for remote b'cast on 12/16 from Harborstown Christian Book Store on your Christian connection, AM-1580 WVOF; fair with WUIV in a brief fade; ex: WJIK; does this one still have a CP for 830 or has Taino scared them off? [BKF??-Ed.] (CR-ON)
- WVOF NC CAMP LE JEUNE - 12/15 1718 w/sign-off by CE:WVOF Camp LeJeune-Jacksonville; good; ex:WJIK (WPT-DC)
- WTTN WI WATERTOWN - 12/20 2316 good with wx (-7°) and wx-related cancellations (RD-IA)
- 1590 WCBG PA CHAMBERSBURG - 12/19 1529-1539 w/stock report, NWS, ad for Ford dealer west of Bedford ment'd in NWS; poor (DT-ON) [Dan, if you're abbreviating news to NWS, please change that to "nx" or leave as news. I think of NWS as the "National Weather Service", thanks-Ed.]
- 1600 WBBB WV WHEELING - 12/19 1529-1540 w/OLD, local ads, annc'd as WEZD(?); must be FM outlet (These are correct CLs-Ed.) (DT-ON)

REPORTERS:

WARO-AM 540

- GT-FL GERRY THOMAS//Pensacola, FL//R70 + Superloop
CR-ON CHARLES REH//Leanington, ON//R-390A + Sanserino Loop & Realistic TR-3000 open reel
- KVJ-GA KARL JETER//Stone Mountain, GA//Sangean ATS-803A, HQ-150, 4' NRC Loop
GV-PA GEORGE VANISH//Truckville, PA//Car radio
RD-IA RICK DXAU//Osland, IA//Kenwood R-1000 + Radio West Loop
MK-WI MIKE KNITTER//mobile on I-94 between Madison & Milwaukee, WI//caradio
SA-MB SHAWN AXELROD//Winterpeg, MB//R-70 + 3' loop, 100' LW + Mini Tun-3
WPT-DC WILLIAM TOWNSHEND//Washington, DC//ICF-2010
DT-ON DON TRELFOED//Scarborough, ON//DX-440 + LW
KDF-IL KARL FORTH//Chicago, IL//HQ-160, IC-R70, spiral loop, LW

GRAVEYARD DX ACHIEVEMENTS UPDATE (all new records)

1230:	KBAR ID Burley	Nancy Hardy	Aberdeen, WA	580
	KZZR WA Burns	Nancy Hardy	Aberdeen	330
1240:	CJAV BC Port Alberni	Nancy Hardy	Aberdeen, WA	163
1340:	KQIL CO Grand Junction	John Wilkins	Wheat Ridge, CO	173
1400:	KNNB OR Cottage Grove	Rich Toebe	Pleasanton, CA	393
1450:	WASK IN Lafayette	Shawn Axelrod	Winnipeg, MB	(tie) 820
	KSEL NM Portales	John Wilkins	Wheat Ridge, CO	393
	WJPA PA Washington	Morris Sorensen	Port Carling, ON	337.
1490:	KZAB AR Dardanelle	Stephen Ponder	Harrison, AR	74
	WPBK MI Whitehall	Don Voorhies	Oswego, NY	489

SOME ABBREVIATIONS & SPECIAL SYMBOLS USED IN DDXD-E

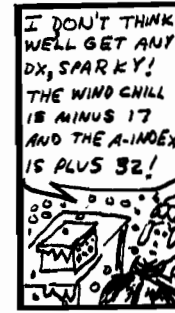
TT:test tones OC:open carrier TC:time check RS:regular schedule QRM: interference QTH:location SID:singing ID CID:code ID jx:jingle mx:music nx:news wx:weather SSB:Star Spangled Banner LSR:local sunrise SR: sunrise skip LSS:local sunset SSS:sunset skip PSRA: Pre-Sunrise Authority PSSA:Post-Sunset Authority HS:high school FB:football BB:baseball HKY:hockey BKB:basketball :00: the hour ||:parallel with →:to or into \$:stereo SS:Spanish FF:French EE:English POL:political GOS:gospel REL:religion or religious AC:adult contemporary BBD:big band OLD:oldies ROK:rock 'n' roll CHR:contemporary hit radio ContChr: contemporary Christian C&W:country & western EZL:easy listening UC:urban contemporary AP:Associated Press Radio UPI:United Press International MBS:Mutual Broadcasting System USRN:United Stns Radio Net NPR: National Public Radio IRN: Interstate Radio Net

KGRV CHRISTIAN RADIO 700 AM

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Phone: (503) 679-8185



73, Bill



Domestic DX Digest - West

Wayne Heinen
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DX Catches in the Western U. S. and Canada, with 24-hr. ELT

SPECIAL!

1350 KGHF CO Pueblo (or KGHS?)

12/22 0910, Spot for Minacqua Bank, area nx,sx,wx. EZL/NOS format. (ex-KRYT) (0W-CO) (Still no confirmation on the right call per OW and Chris Knight in Pueblo, the station is not answering the old KRYT PH # and no new listing exists-ed)

Midnight to Midday!

660 KTNN AZ Window Rock

12/17 0304 End of NBC Nx, ID "KTNN Window Rock AZ" C&W Mx and IRN Feed. Fair to Poor w/KPUA-670 slop. AZ#2 (DP-HI)

730 KIZN ID Boise

12/24 0556 Legal ID "KIZN 93 FM New Plymouth- Boise, and KIZN 73 AM Boise, Idaho's 12 in a row Continuous Country" & C&W Mx. Weak w/little QRM. (0W-CO)

1220 WTCN MN Stillwater

12/29 0750 Promo's & T-40 to 0754 lcl spot, lcl Nx to 0800 ID and Mutual Nx. Fair on TRF. (WH-CO)

1220 KMVL TX Madisonville

12/24 0659 ID "You're listening to KMVL 1220 AM, Madisonville " & Satellite Nx Net. Lost to KZEE & others. (0W-CO)

1220 KZEE TX Weatherford

12/24 0719 GOS prgm, spot for Parker County Transportation Service. and "KayZee 1220" slogans. Fair o/QRM (0W-CO)

1300 KYNO CA Fresno

12/25 0251 Trad & Modern XMAS Mx, 0300 SID "KYNO Fresno" & XMAS Mx. Poor o/u UNID, KAZN probably off (DP-CA)

1430 KLO CO Ogden

12/24 0710 Xmas Mx, "Wahsatch Weather" then into an Exciting history of Wassail. Fair/Good in KEZW null. (0W-CO)

1540 KISA HI Honolulu

12/19 0456 Filipino pop mx, SID "KISA, Honolulu" and audio off, OC left til 0505 when & called and complained. Quickie s/off. (DP-HI)

Midday to Midnight!

960 KGKL TX San Angelo

12/24 2356 Light Rock o/u KGWA. Conditions favored SE direction this evening (WH-CO)

1350 KTXJ TX Jasper

12/24 2334 o/u KGHF w/OLD "All Hits all the time KTXJ" I wonder if this is really 37 watts! (WH-CO)

CONTRIBUTORS!

(DP-HI) Dale Park - Glendale, CA - Sangean ATS-803, ATS-803A

(DP-HI) Dale Park - Honolulu, HI - Sangean ATS-803, ATS-803A

(0W-CO) John Wilkins - Wheat Thin, CO - R-1000, 2'6" loop

(WH-CO) Wayne Heinen - Aurora, CO - R-390A, RW-TRF-655,

4' NRC loop

THX!


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 letter for 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!

FCC RULE PRIMER

JOHN D. BOWKER, 14 CANOE BROOK DRIVE, PRINCETON JCT., NJ 08550

In this DX NEWS series we are discussing specific FCC Rules of interest to the readers. If you have any specific questions or areas of interest, let the NRC Headquarters know.

X. CLASSES OF AM BROADCAST STATIONS

Note: In Part IX of this series, we discussed each of the channel classes, and the major classes of AM broadcast stations. Here we go into more detail about Class I stations. Please note that the quotation marks indicate direct quotes from the FCC Rule book although certain syntax liberties have been taken where involved cross-referencing is necessary.

A. There are three Class I station categories:

Class I-A "A station operating with 50 kW on a clear channel that is protected out to its 0.1 mV/m contour and its 0.5 mV/m contour 50 percent skywave contour by Class I-A stations nighttime. It shall operate on one of the following channels: 640, 650, 660, 670, 700, 720, 750, 760, 770, 780, 820, 830, 840, 870, 880, 890, 1020, 1030, 1040, 1100, 1120, 1160, 1180, 1200 and 1210 kHz."

Class I-B "A station operating with at least 10 kW but not more than 50 kW on one of the following clear channels: 680, 710, 810, 850, 940, 1000, 1060, 1070, 1080, 1090, 1110, 1130, 1140, 1170, 1190, 1500, 1510, 1520, 1530, 1540, and 1560 kHz." Note: Radiation toward the Bahamas by U.S. stations operating on 1540 is severely limited (details on request) and, in any event, a station planning to operate at night must be located at least 650 miles from the Bahamas.

Class I-N "A station located in Alaska operating on Class I-A or I-B channels shown above. They operate with at least 10 kW but not more than 50 kW."

B. There are five Class II station categories:

Class II-A "An unlimited time clear channel station operating with at least 10 kW but not more than 50 kW. Assignments are limited to the states and frequencies as follows: 670 kHz (Idaho); 720 kHz (Idaho or Nevada); 770 kHz (New Mexico); 780 (Nevada); 880 kHz (Nebraska, North or South Dakota); 890 kHz (Utah); 1020 (New Mexico); 1030 kHz (Wyoming); 1100 kHz (Colorado); 1120 kHz (California or Oregon); 1180 kHz (Montana); 1210 kHz (Kansas, Nebraska or Oklahoma). No Class II-A station shall be assigned unless at least 25 percent of the population residing therein receives no other interference nighttime primary service. Class II-A stations must operate with at least 10 kW at night."

Class II-B "A station operating on one of the frequencies shown above for Class I-A stations with power not less than 250 Watts nor more than 50 kW. Note that a station operating at 760 kHz in San Diego, CA shall be limited to 5 kW and the station operating at 750 kHz in Anchorage, AK shall be limited to 10 kW. Not more than 10 percent of the population included within the normally protected nighttime contour will receive interference."

Class II-C "An unlimited time clear channel station operating with a minimum power of 250 Watts day or night, but with power not to exceed 50 kW during the day, and 1 kW at night."

Class II-D "A clear channel station that may be operated daytime only or limited time. No new applications are being accepted for Class II-D daytime stations. Only limited time station applications will be considered."

Class II-S "A clear channel station operating during the day with powers not less than 250 Watts (but not less than 50 kW), and at night with less than 250 Watts on one of the following channels: 540, 690, 730, 740, 800, 860, 900, 990, 1010, 1050, 1220, 1540, 1570, and 1580 kHz."

C. There are two Class III station categories:

Class III "An unlimited time station operating with not less than 250 Watts nor more than 5,000 Watts on one of the following Regional Channels: 550, 560, 570, 580, 590, 600, 610, 620, 630, 910, 920, 930, 950, 960, 970, 980, 1150, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1350, 1360, 1370, 1380, 1390, 1410, 1420, 1430, 1440, 1460, 1470, 1480, 1590, 1600 kHz."

Class III-S "A former daytime-only station that operates on a regional channel with a nighttime power that is both less than 250 Watts and insufficient to enable the station to attain an RMS field strength of at least 141 mV/m at 1 kilometer."

D. There is only one Class IV category of station. They operate with a maximum power of 1,000 Watts (see Part IX of this series) and on one of the following Local Channels: 1230, 1240, 1340, 1400, 1450, and 1490 KHz.

That's a rundown on all the station classes, although there are many more details about certain antenna efficiency requirements and rules about stations near the Canadian and Mexican borders. If further details are needed, please be specific and send them to NRC headquarters.

ALL ABOUT WAVELENGTH

by
John D. Bowker



P.O. Box 1328
Mobile, AL 36633-1328

Who among us hasn't idly wondered at one time or another why the dial position of a radio station is listed by frequency in some cases and by wavelength in others. Sure, the medium-wave broadcast stations usually identify by their carrier frequency ("WOR, 710 on your dial" or "KFI, 640"). The FCC always uses frequency in specifying the electrical characteristics of a station. But note that we use the term "short wave", "long wave" and even "microwave" in our everyday lingo around home and in the National Radio Club. In fact, I used the term "medium wave" in my second sentence above. So why don't we choose either "frequency" or "wavelength"...but not both?

Let's look at a little radio history. There can be arguments about who first had the flash of insight about electricity (or whatever) travelling through the air without wires.* But you may recall some of the early physics experiments that demonstrate how magnetic particles can be re-arranged by a nearby magnet and moved around as the magnet moves. You may also remember the teacher showing how the length of a violin string determines the "pitch" of the sound, and how, as you blow across the neck of a bottle, the "tone" gets higher and higher if you add water to the bottle. The teacher explained that the reason the bottle makes a sound is because of "standing waves" and you could measure the length of the air path inside the bottle to accurately figure the note's pitch. So it is easy to see how the whole concept of the sound waves moving from the bottle to your ear was simply extended to magnetic waves moving through the air.

When it was later observed that an electrical spark could also re-arrange particles of dust or thin metal sheets at a distance, the effect became known as an electrical wave. But an interesting observation was made about these newly created electrical sparks. The range of their influence could be greatly extended just by connecting a piece of wire to one of the metal parts that created the spark. And if another piece of wire of the same length were laid out next to the dried grasses the range was even further extended. It didn't take long for someone to figure out that two sparks could be used at the same time without interfering with each other if they were connected to two different lengths of wire and the receivers were connected to correspondingly different lengths of wire. The antenna wires caused a "tuning" effect for the transmitter and, similarly, for the receiver.

Later on, when radio transmissions were generated by rotary equipment rather than by sparks, the term "wave" was extended to "wavelength". It was known that radio waves travelled at the speed of light (186,000 miles per second) and they knew how fast the rotary generator wheel was turning. The electrical signals were generated simply by moving a magnet past a wire and, automatically, an electrical signal appeared in the antenna wire. If the wheel had 1000 magnets on its edge and it was spun at 50 revolutions per second (3000 r.p.m.) electrical impulses would occur 50,000 times a second. In order to specify the length of wire to hitch to the generator, all they had to do was figure how far each impulse would travel in the air before the next impulse came along. That would be $186,000 \text{ miles} / 50,000 = 3.72 \text{ miles}$.

But nobody uses "miles" when talking about the length of a radio wave. Once again we defer to the scientific community and use the metric system. The speed of light is 300,000,000 meters per second, and the reader should have no trouble confirming that the distance travelled by a 50,000-impulse electrical signal in the air would be 6,000 meters before the next impulse was sent out. As technology developed the ability to create more and more impulses each second, the distance travelled by the signal between impulses became shorter and shorter, that is, the wavelength became shorter and the term "short wave" was invented.

Radio logs printed as recently as 1924 by the U.S. Department of Commerce (predecessor to the FCC) make no mention of frequency in the log of broadcast stations. After all, you can't cut an antenna to 870,000 cycles per second so why bother to list such extraneous information even if you want to hear WWL. The radio dials were calibrated from 0-100. The radio's instruction book would tell how to adjust the three dials (all good radios had 3 tuning dials) to the desired number of wavelength. If the signal from the station was weak, the serious listener could then cut a piece of antenna wire knowing the desired wavelength.

So why did anyone bother with frequency? Convenience. As more and more stations came on the air, the need for outdoor antennas cut to precise lengths was less. There was a greater need to crowd stations close together, and the improved technology meant stations could stay put on a given wavelength instead of drifting from time to time. The actual spacing was determined by the quality of audio the government regulators felt was good enough. Audio quality was measured in frequency rather than wavelength since the wavelength numbers were huge and cumbersome to use. Good earphones reproduced audio (sound) about as high as 5,000 cycles-per-second (cycles-per-second are now called

"Hertz"). Since AM broadcast stations transmit their audio as two "sidebands" adjacent to their main carrier frequency, the decision was made to allow stations to be spaced no closer than 10,000 Hertz across the dial (that gives room for both of the 5,000 Hertz sidebands).

This suggested that the dial positions should be calibrated with this spacing, and the use of frequency took over as a way of identifying stations. But old ideas sometimes die hard, though. As recently as 1953, White's Radio Log listed U.S. broadcast stations in both frequency and wavelength. So we have seen there is a role for both terms -- Once or twice, late at night after the station manager is known to be well asleep, I have been known to promote an upcoming program on Trenton's WBUD with the tag line "...and you'll hear it right hear tomorrow after the 2 p.m. news on 238 meters." The phone hasn't rung yet, so I guess all of Trenton is asleep too after 11:30 p.m.

* I will settle it here by claiming it was Thales of Miletus in 640 B.C. who noticed that amber, rubbed with a piece of fur, could be used to lift objects off a surface from a distance. Thus, messages could be marked. Amber was known as "elektron" to the Greeks. (My source for this footnote is Orrin Dunlap, a past Vice President of RCA and past Radio Editor of the New York Times so it may be true!)

(BY A-P WRITER JOE McDONALD) **Associated Press**
-via Jerry Starr

(CINCINNATI) -- AN ERA ENDED FOR VAL COLEMAN WHEN RADIO STATION W-N-O-P CAME ASHORE AFTER 17 YEARS OF BROADCASTING FROM STUDIOS BOBBING IN THE OHIO RIVER.

COLEMAN IS A BROADCASTER FOR THE A-M JAZZ STATION AND SAYS HE KNOWS OF NO OTHER STATION IN THE COUNTRY THAT USES A FLOATING STUDIO.

ON NOVEMBER 6TH, STATION EMPLOYEES MOVED TO A TRADITIONAL STUDIO IN CINCINNATI. THEY CLEANED OUT WHAT THE STATION CALLED THEIR "JAZZ ARK," A CLUSTER OF THREE STEEL CYLINDERS MOORED UPRIGHT BESIDE A FLOATING RESTAURANT ON THE NEWPORT, KENTUCKY, RIVERFRONT.

THE "JAZZ ARK" LOOKS FROM THE NEWPORT SHORELINE LIKE A PAIR OF BRIGHT BLUE BINOCULARS STANDING IN THE WATER. THE VESSEL SURVIVED THE FREEZING OF THE OHIO RIVER IN 1977 AND THE THREAT OF COLLISION WITH PASSING BOATS ONLY TO HAVE THE STATION OUTGROW IT.

COLEMAN SAYS THE BROADCASTERS NEEDED MORE SPACE THAN THEIR ROUND STUDIO, 10 FEET IN DIAMETER, ALLOWED.

NEITHER THE FEDERAL COMMUNICATIONS COMMISSION NOR THE NATIONAL ASSOCIATION OF BROADCASTERS COULD CONFIRM WHETHER W-N-O-P HAD THE ONLY FLOATING STUDIO AMONG THE NATION'S RADIO STATIONS.

STATION OWNER AL VONTZ SAYS HE DECIDED TO EXPERIMENT WITH A FLOATING STUDIO IN 1972 WHEN, SHORTLY AFTER HE BOUGHT W-N-O-P, THE LANDLORD FOR THE STATION'S LAND-BASED STUDIOS RAISED THE RENT.

VONTZ SAYS HE HAD A NEARBY BOAT YARD WELD TOGETHER THREE STEEL TANKS INTENDED FOR STORING GASOLINE UNDERGROUND AT SERVICE STATIONS. HE SAYS HE TESTED THE DESIGN BY FLOATING CATMEAL BOXES IN HIS BATHTUB.

COLEMAN SAYS THAT, DESPITE THE ADDED COMFORTS OF A LARGER STUDIO ON DRY LAND, HE'LL MISS THE ADVENTURE OF BROADCASTING FROM THE "JAZZ ARK."

HE SAYS (--QUOTE--) "YOU HAVE TO BE A LITTLE ECCENTRIC IN A NEAT WAY TO DO THIS."

VONTZ SAYS HE HAS DONATED THE FLOATING STUDIO TO THE CONTEMPORARY ART CENTER IN CINCINNATI, WHICH HAS FORMED A COMMITTEE TO DECIDE THE NEXT USE FOR THE JAZZ ARK.

CITY QUIZ

John S. Bowker, Valparaiso, IN

QUIZ #46

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 spot the city?

820 870 970 1270 1540

Here is a hint: it is one of these: Fort Worth, Columbus, Waterloo
(The answer will appear at the end of the next City Quiz in DX News.)
The answer to City Quiz #45 Las Vegas

12 Battle of the airwaves: Area radio stations fighting for listeners

By Tom Williams

Vindicator entertainment editor

It's 5:30 a.m. Monday, the alarm clock has been silenced, frost covers the window and chills fill the house. You're fighting to wake up and start your week. Who ya gonna call?

Many in the Mahoning Valley reach out to their radios for a jump start on the day. And as the 1980s are about to close, the radio scene here has shifted from complacent to extremely competitive.

As recently as two winters ago, local radio was predictable: Hot-FM 101 (WHOT-FM) and its Top 40 format dominated the market, sometimes scoring ratings as high as 18 percent of total listeners. The real battle, at least in the Arbitron ratings measuring listeners 12 and older, was for second place. The main contenders were Radio 57 (WKBN-AM), Easy 99 (WKBN-FM), Y-103 (WYFM-FM) and Country 105 (WQXK-FM).

But in the past two years, two new rock stations have come on the air, and four older stations have changed formats. Two more are about to change.

The Mahoning Valley radio scene first began its dramatic shift in May 1988 when CD-106 (WNCD-FM) and its classic-rock format debuted. A month later, WQOD-FM changed formats to become Oldies '93 (WBBG-FM), which has become popular with baby boomers by playing pop and rock oldies from the 1950s, 1960s and 1970s. Last fall, 95 K-Rock (WRKU-FM), a contemporary rock station, came on the air to battle CD-106 for an audience of mostly young, adult males.

In early 1989, WKBN-FM gave its Easy 99 "elevator music" instrumentals the shaft. Once instrumentals-only, WKBN-FM is now known as FM 99 and stresses soft vocal hits.

WFMJ-AM 1390 has returned to its "Songs of Your Life" format, mostly original tunes from the 1940s and '50s. In August, Y-103 changed from an oldies-based format of 1960s and '70s hits to become Lite Rock 102.9, with adult contemporary sounds.

The next change will take place Friday, when Top 40 station Z-96 (WMGZ-FM) becomes WOJY-FM and plays beautiful music similar to what the old Stereo 99 offered. Later in December, WHOT-AM will stop simulcasting its FM sister and broadcast "music of your life," similar to that offered by WFMJ.

The results of these changes are reflected in the quarterly Arbitron ratings books that measure the percentage of listeners tuned in to different stations. But because the market has been so unstable for 18 months, even the most recent Arbitron ratings aren't up to date.

Hot-FM 101 remains solidly in first place, although its days of earning 18 ratings appear to be over. Last winter, the station slipped to an 11.9 rating overall, less than one point ahead of second-place WKBN-

FM. The spring and summer Arbitron books showed Hot-FM 101 at 14.5, and in first by more than 3 points.

Both WKBN stations and Country 105, the only major country music station here, have benefited from the pop-rock-adult wars. WQOD earned only a 2 rating, but Oldies '93 is a contender, up to around 7.

The station most affected was Y-103, which once earned ratings of about 11 or 12 but has fallen to around 7. CD-106 continues to lead its war with 95 K-Rock, but has yet to match the ratings it scored before 95 K-Rock came on the air.

The time slot showcasing competitive radio is the shift from 5:30-10 a.m. weekdays. While some stations are trying to get listeners with soft laid-back approaches, others are going all out to get listeners. Morning radio is more than songs, news and weather. Driving to work now means contests, games, jokes (tasteful and otherwise), skits and gimmicks.

Early listeners crucial

Scott Kennedy, Lite Rock 102.9 program director and morning disc jockey since 1984, said getting early listeners is crucial.

"The morning program sets the tone for the rest of the day," he said. "It's like what NBC does with 'The Cosby Show.' They play it early in the evening and hope viewers will stay. We want to keep our morning listeners the rest of the day."

Kennedy said that if a listener tunes in at home, he is likely to tune in while driving to work. "And that listener could make a difference in what station is played at work," he said.

Morning radio teams have sprung up all over the dial. Radio 57 has Pete Gabriel, talk show host Dan Ryan and reporters John Nagy and Gina Marinelli. Lite Rock features Kennedy, newsman Doug James, sports reporter John "Mr. Sports" Batcho and Wendy Miller with weekend tips. The Oldies '93 early crew offers DJ Jeff Kelly and promotions director Lee Jolly. CD-106 has Terry Williams, Craig Moore, Marie Angnardo with news and "Stretch Man" Dave Morton on sports.

Not every station uses team disc jockeys. Charlie Harrigan solos on Country 105 and Rich Morgan holds down the FM 99 fort.

Partner shows trend

But when the undisputed king of Mahoning Valley radio — "A.C. in the morning" McCullough — takes on a partner, you know morning teams represent a trend with staying power. Kelly Stevens joined McCullough's show last winter. The team also includes newsman Bruce

Robertson. Station Manager Dick Thompson chips in five-minute daily chats built around the latest weather forecast.

McCullough, who has been getting up at the crack of dawn since 1974, said, "Every day is not gang-busters, but I love what I do. It's still a kick. There is no greater love of mine than seeing a bit or an idea take place in my mind — maybe while I'm driving — and then hearing it done on the air."

Sometimes coming in on as little as two hours of sleep, McCullough admitted it is sometimes hard to get a groove going. "But then there are the days that are so busy that the time flies by," he said.

Most radio promotions actively involve morning personalities. When Hot-FM 101 showed a "Radio Wars" commercial last summer at Cinema South, the film clip was billed as an "A.C. and Kelly film." Radio 57's morning man Gabriel is the spokesman on the station's current television commercial. During afternoon and evening plugs, CD-106 replays comedy bits from its morning show.

Area market unsettled

Kelly, the Oldies '93 programming director and morning DJ, said he doesn't see the Youngstown market settling down any time soon.

"My experience says Youngstown is just now becoming more like other cities" where competition thrives, he said. "You're going to find morning shows and personalities changing. It's a very volatile business."

A native of Canfield, Kelly worked at WHOT and stations in Cleveland, Michigan, South Carolina and Maine before returning to Youngstown two years ago.

"Mornings are the prime time for radio," he said. "More people use radio in the morning than the rest of day. That's starting to slowly change with people listening at work."

Kelly said WBBG does "something no one else does by offering news every 10 minutes. A lot of our listeners are on the way to work and we only have them for 20 minutes or so. It's crucial we give them what they want to know: weather, what time it is, overnight news and sports."

Unlike the harder rock stations, the Oldies '93 and Lite Rock shows don't go for shock humor. Kelly said, "It's not my personality to tell shock humor, and it goes against the musical trend we're playing. We're after fun memories. We're not trying to play controversial or 'dirty' music."

Comfortable conversations

Lite Rock 102.9's Kennedy said

his station uses the team approach because "We believe listeners like to hear people communicating and feel more comfortable with conversations in the morning."

"Doug and I can't leave the studio, so it's nice to have someone like Wendy or Mr. Sports who can go out and do things with the listeners on the way to work."

Kennedy said morning radio depends on the basics. "People waking up want to know how much time they have to get ready for work, what the weather is so they know what to wear, what happened overnight or what will happen that day that could affect them."

The most recent Arbitron ratings for mornings show Hot-FM 101 was first with a 15 rating, Radio 57 was second at 14.5, FM 99 was third with 10.6, Lite Rock was fourth with 7.9, Oldies '93 was fifth at 7.4 and Country 105 was sixth at 6.7.

Bill Kelly, WKBN station manager, said WKBN-AM's mostly news-talk format means, "We are out of the music business. We've found people want to talk, get things off their chest."

Kelly said morning announcer Gabriel handles only light subjects. "Listeners don't want to get too heavy in the morning," he said.

King of local talk show hosts

Gabriel has been the Radio 57 morning man for well over 10 years. Ryan, king of local talk show hosts, joined WKBN five years ago. He goes on the air at 8:30 a.m.

Kelly praised FM 99's Morgan as a "very, very interesting personality for the morning. Rich is not a not a huckster and doesn't try to be a funny guy. He tells things that are interesting. That mixed with the music and Gina doing news provides just enough information to satisfy listeners."

Kelly said he sees the Youngstown market settling in 1990 "unless someone decides to go country. There's not much left in the market to change. The Arbitron winter 1991 ratings book will tell just where each station stands."

Kelly didn't mention it, but no station in this market is playing black-oriented urban music.

The most-interesting battle being waged in the Mahoning Valley is between 95 K-Rock and CD-106. CD-106 came on the air playing classic rock tracks, but 95 K-Rock now promotes itself as the station "playing the most classic tracks in the morning."

Gary Jay, 95 K-Rock programming director, said he emphasizes older, more familiar songs because, "Adult rockers don't know what they want, but they want what they know."

Stay tuned.

Radio personalities



McCullough



Stevens



Gabriel



Ryan



Kelly



Jolly



Kennedy



James



Morgan



Harrigan

Standard Time and Frequency Stations ... via Pete Kemp

(sorted by frequency)

Station	Power	Std Freq	Accr'cy	DUT1			
Call Sign	Approximate Location	Latitude Longitude	Carrier Power (KW)	Carrier (KHz)	Mod (Hz)	Parts in 10	
GBR(1) (31)	Rugby, UK	52 22'N 01 11'W	750 60(2)	15.95 16.00	1(9) (9)	+/-0.02	CCIR code by dble pulse
NDT(1) (32)	Yosami, Jap	34 58'N 137 01'E	40(2)	17.4	nil	+/-0.1	
NAA(1) (22)(32)	Cutler, ME USA	44 38'N 67 17'W	2000 1000(2)	17.8	nil	+/-0.1	
NLK(1) (32)	Jim Creek, Wash., USA	48 12'N 121 55'W	1200 130(2)	18.6	nil	+/-0.1	
UQC3	Khabarovsk, USSR	48 30'N 134 51'E	300	26.6 25.1 25.5 23.0 20.5	1,10, 40 (42)		KUYO EIGHT • THREE • O Box 90395 Casper, Wyoming 82609
UTR3	Gorky, USSR	56 11'N 43 58'E	300	25.0 25.1 25.5 23.0 20.5	1,10, 40 (42)		
NSS(1) (32)	Annapolis, MD, USA	38 59'N 76 27'W	1000 400(2)	21.4	nil	+/-0.1	
NWC(1) (22)(32)	North West Cape, Astrla	21 49'S 114 10'E	1000(2)	22.3	nil	+/-0.1	
NPM(1) (22)(32)	Lualualei HI, USA	21 25'N 158 09'W	1000 630(2)	23.4	nil	+/-0.1	
JJP-2(1) JG2AS	Sanwa, Sashima, Ibaraki, Jap	36 11'N 139 51'E	10	40	1 (21)	+/-0.1	
OMA	Podebrady, CZECH., SR	50 08'N 15 08'E	5	50	1 (90)	+/-10	No DUT1 trans
RTZ(1)	Irkutsk USSR	52 18'N 104 18'E	10	50	1; 10	+/-0.1	CCIR Code by dble pls(41)
MSF	Rugby UK	52 22'N 01 11'W	25(2)	60	1 (12)	+/-0.02	CCIR Code dble puls
WWVB(1)	Ft Collins CO, USA	40 40'N 105 03'W	13(2)	60	1 (3)	+/-0.1	No CCIR code
RBU(1)	Moskva, USSR	55 19'N 38 41'E	10	66 2/3	1; 10	+/-0.1	CCIR Code by pulse(41)
HBG(39)	Prangins Switz	46 24'N 06 15'E	20	75	1 (28)	+/-0.2	No DUT1 trans
DCF77(1)	Mainflingen FR Germany	50 01'N 09 00'E	20	77.5	1	+/- 0.005	No DUT1 trans
	Donebach, FR Germany	49 34'N 09 11'E	250	151	nil	+/-0.5	
	Allouis, France	47 10'N 02 12'E	1000 to 2000	163 84(33)	nil	+/-0.1	
	Droitwich, UK	52 16'N 02 09'W	400	200	nil	+/-0.2	

RW-166	Irkutsk, USSR	52 18'N 104 18'E	40	200	+/-0.1
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EXPLANATION CONCERNING GMT; USE, NOMENCLATURE AND HISTORY:

GREENWICH MEAN TIME (GMT) IS, PROPERLY SPEAKING, THE HOUR ANGLE OF THE "MEAN SUN" AT THE MERIDIAN OF THE OLD GREENWICH OBSERVATORY. THIS MEANS THAT THE ASTRONOMICAL DAY WOULD START AT NOON AND NOT AT MIDNIGHT AS IN CIVIL USAGE. THE "MEAN SUN" IS ACTUALLY A FIDUCIAL POINT ON THE SKY WHICH MOVES UNIFORMLY ON THE EQUATOR AND NOT WITH VARIABLE SPEED ALONG THE ECLIPTIC AS THE "APPARENT SUN" DOES. THE MEAN SUN IS SO DEFINED THAT OVER A YEAR IT REPRESENTS THE AVERAGE POSITION OF THE SUN. THEREFORE, MEAN TIME WHICH IS REFERENCED TO THIS POINT AND NOT TO THE APPARENT SUN, IS A GOOD AVERAGE APPROXIMATION TO APPARENT TIME, THE TIME WHICH A SUNDIAL SHOWS. THE DIFFERENCE BETWEEN THESE TWO TIMES IS THE EQUATION OF TIME, A CORRECTION WHICH LEADS FROM ONE TO THE OTHER. (THERE ARE TWO DIFFERENT SIGN CONVENTIONS IN USE; CAUTION IS THEREFORE REQUIRED IN THE APPLICATION OF TABLES).

OVER THE LAST 50 YEARS A NUMBER OF CHANGES HAVE TAKEN PLACE WHICH HAVE CAUSED CHANGES OF CONCEPTS AND OF NOMENCLATURE WHICH, HOWEVER, HAVE NOT YET BECOME WIDELY KNOWN.

THE FIRST OF THESE EVENTS HAS BEEN THE ESTABLISHMENT OF THE INTERNATIONAL TIME BUREAU (BIH) AT THE PARIS OBSERVATORY. THE PARIS TIME SERVICE SIMPLY ACTED AS A COORDINATING BUREAU TO ASSURE THAT THE TIME DETERMINATION BY THE VARIOUS TIME SERVICES WERE ALL COORDINATED AND THE RESULTS PUBLISHED. THIS COORDINATION ESSENTIALLY MEANS THAT THE LONGITUDES OF ALL STATIONS HAVE TO BE ESTABLISHED IN A CONSISTENT SYSTEM. FOR THIS IT IS NOT PRACTICAL TO REFER THE LONGITUDES OF THE STATIONS TO A SINGLE ARBITRARY INSTRUMENT. OVER THE YEARS THIS LED TO THE PRACTICE OF DEFINING THE STANDARD MERIDIAN IN RESPECT TO THE AVERAGE OF ALL CONTRIBUTING OBSERVATORIES INSTEAD IN REFERENCE TO THE TRANSIT INSTRUMENT IN GREENWICH. THIS IS AN OBVIOUS IMPROVEMENT BECAUSE INSTRUMENTAL ERRORS OR MOTIONS OF THAT INSTRUMENT ARE THEN NOT REFLECTED IN THE INTERNATIONAL REFERENCE. WHEN THE ROYAL GREENWICH OBSERVATORY (RGO) MOVED AWAY TO THE BETTER SKY OF SOUTHERN ENGLAND AFTER WORLD WAR II, THE REFERENCE MERIDIAN WAS NOT AFFECTED BY THIS AT ALL. IN FACT, HAD RGO STOPPED OBSERVATIONS ALTOGETHER, GMT WOULD STILL HAVE BEEN AVAILABLE, AS IT IS NOW, FROM THE OBSERVATIONS OF ALL THE OTHER NATIONAL OBSERVATORIES (IN THE USA FROM THE USNO AND ITS TIME STATION IN FLORIDA).

INDEED, MORE RECENTLY THE RGO HAS LOST INTEREST IN TIME HAVING BECOME MORE OF A PURE RESEARCH OPERATION WITH PRIMARY CONCERN IN ADVANCED ASTROPHYSICS. IT WILL EVEN MOVE AWAY FROM HERSTMONCEAU TO A UNIVERSITY CAMPUS. THE CASTLE WOULD THEN BE SOLD AS A SOURCE OF SUPPORT. THE OTHER BUILDINGS OF THE RGO ARE ALSO TO BE CONVERTED INTO A HOTEL, ETC. ALL OF THE REMAINING ACTIVITIES OF THE RGO, I.E. THE SUPPORT FOR THE NEW OBSERVING SITE IN THE CANARY ISLANDS, WILL BE MOVED TO CAMBRIDGE UNIVERSITY INTO A NEW, QUITE MODEST BUILDING.

THESE DEVELOPMENTS ARE DUE TO THE CHANGE IN MISSION AND OVERSIGHT WHICH TOOK PLACE IN 1965 WHEN THE RGO WAS PUT UNDER THE SCIENCE AND ENGINEERING RESEARCH COUNCIL (SERC). ITS ACTIVITIES ARE NOW MAINLY THE OPERATION OF THE NEW MAJOR OBSERVATORY ON THE ROQUE DE LOS MUCHACHOS ON THE ISLAND OF LA PALMA (RDLM OBSERVATORY).

ANOTHER CHANGE CAME ABOUT BY THE DECISION OF VARIOUS BODIES, E.G., THE INTERNATIONAL ASTRONOMICAL UNION (IAU), TO CHANGE THE BEGINNING OF THE DAY TO MIDNIGHT, IN CONFORMANCE WITH CIVIL USAGE. MEAN TIME AT THE STANDARD MERIDIAN (I.E., ACCORDING TO THE WASHINGTON CONVENTION OF 1884, THE GREENWICH MERIDIAN) WAS THEREFORE TO BE THE HOUR ANGLE OF THE MEAN SUN PLUS 12 HOURS. REGARDING THE NAME OF THIS "WORLD TIME" CONFUSION AROSE BECAUSE THE BRITISH DID NOT ACCEPT A US PROPOSAL TO SIMPLY NAME IT GCT FOR GREENWICH CIVIL TIME. ON THE OTHER HAND, MOST PEOPLE WILL AGREE THAT IT IS NOT WISE TO USE THE SAME NAME FOR TWO DIFFERENT THINGS, IN THIS CASE THE OLD AND THE NEW STYLE. FOR THESE REASONS, THE IAU RECOMMENDED THE NEW DESIGNATION "UNIVERSAL TIME" (UT) FOR WHAT OTHERWISE WOULD HAVE TO BE CALLED GMT NEW STYLE. UT WAS QUICKLY ACCEPTED BY MOST COUNTRIES. THE ONLY EXCEPTION WAS BRITAIN (FOR OBVIOUS REASONS) AND THE USA WHICH FOLLOWED BRITAIN BECAUSE OF THE CLOSE COORDINATION OF THE ASTRONOMICAL AND NAUTICAL ALMANACS.

YET ANOTHER DEVELOPMENT HAS BEEN THE INTRODUCTION OF A DISTINCTION BETWEEN VARIOUS MEASURES OF TIME: FIRST THE TIME AS OBSERVED, THEN THE TIME CORRECTED FOR POLAR VARIATION (IN THE ORDER OF 100MS), FURTHERMORE A TIME CORRECTED AND AVERAGED IN RATE OVER A YEAR BY THE APPLICATION OF A SEASONAL CORRECTION, AND FINALLY THE TIME OF THE CLOCKS AND TIME SIGNALS. THE GMT DESIGNATION WHICH SIMPLY CONTINUED TO EXIST BECAUSE OF THE RELUCTANCE OF THE BRITISH AND AMERICAN AUTHORITIES TO CONFUSE THE NAVIGATORS (THAT IS THE MOST FREQUENTLY HEARD EXPLANATION) WAS NOT ADAPTED TO THESE NEW NEEDS. INSTEAD, THE IAU ESTABLISHED THE SYSTEM OF UNIVERSAL TIME WHICH COMPRISED THE UT0, UT1, UT2 AND UTC (UNIVERSAL TIME COORDINATED) IN THE MEANINGS AS LISTED ABOVE.

FINALLY WHEN OTHER PROFESSIONS ENTERED THE TIMING FIELD AND DEMANDED EVEN CLOSER INTERNATIONAL COORDINATION AND CONSULTATION, THE INTERNATIONAL TELECOMMUNICATIONS UNION (ITU WITH ITS CONSULTATIVE BODY THE CCIR), AND THE INTERNATIONAL BUREAU FOR WEIGHTS AND MEASURES AS PART OF THE METRIC CONVENTION, IN ADDITION TO THE SCIENTIFIC UNIONS IAU, URSI, AND IUGG, ESTABLISHED A SYSTEM OF DEFINITIONS AND CONVENTIONS WHICH DEAL EXCLUSIVELY WITH THE SYSTEM OF UNIVERSAL TIME, GMT BEING CONSIDERED AS OBSOLETE.

FOR PRACTICAL PURPOSES GMT MAY BE CONSIDERED AS THE EQUIVALENT OF THE GENERAL EXPRESSION UT. UT WITHOUT FURTHER INDEX IS IN USE WHEREVER A PRECISION OF 1 SECOND IS SUFFICIENT, OR WHERE NO GREATER PRECISION IS TO BE IMPLIED. FOR THE USE IN ALMANACS WHERE THE HOUR ANGLE OF CELESTIAL OBJECTS IS NEEDED, UT1 IS TO BE USED. FOR ALL GENERAL TIMING OF CLOCKS OR ELECTRONIC SYSTEMS, UTC IS THE APPROPRIATE REFERENCE.

THE OFFICIAL DOCUMENTS OF THESE RESOLUTIONS, RECOMMENDATIONS, AND DECISIONS, HAVE BEEN PUBLISHED BY THE BUREAU INTERNATIONAL DE POIDS ET MESURES (BIPM), AND BY THE CONSULTATIVE COMMITTEE FOR RADIO (CCIR AS A BODY OF THE ITU). THE CCIR DOCUMENTS ARE CONTAINED IN THE CCIR "GREEN BOOK" VOLUME VII.

ANY OF THESE DOCUMENTS MAY BE OBTAINED FROM THE USNO TIME SERVICE UPON REQUEST.

LITERATURE:
DEREK HOWSE (1980) GREENWICH TIME AND THE DISCOVERY OF THE LONGITUDE.
OXFORD UNIVERSITY PRESS, ISBN 0-19-215948-8
QB213 79-40052

Musings of the Members

Thoughts from NRC members ... the opinions expressed in this column are those of the individual writer and do not necessarily reflect those of the editors, publishers, or the National Radio Club, Inc.

Al Muick, Jr.
3500 Woodchase, #1310
Houston, TX 77042

Times are local per Muse.

Paul Swearingen - 2840 SE Illinois Ave. - Topeka, KS 66605 - Per a phone call to Al Muick, this week's Musings are somewhere between here and Texas in the custody of the USPS. Look for a fat one next week! As Father Sardini Guiducco would have said, "DX has been berry, berry good to me!" In spite of the unwritten rule that editors aren't supposed to have time to DX, since Thanksgiving and Christmas I've managed to tape 70 new stations for a current total of 605. Most of it has been clean-up and missed stations - #601 was XERF-1570, for example - with 90% of all SSS DX, my favorite. A lot of it has been "clear channel" stuff, like WOPA-1200, WGST-640, KIKR-880, XEAF-660, WBIU-1210, WMYX-720, etc. I'd sure like to know the calls and location of the Mexican on 770 kHz; no one has reported them, but loop bearing leads me to believe that they may be a frequency change for someone in or near Monterrey. Speaking of loop bearings .. by accident I have created a dynamite loop combo. I had mounted an unamplified Sanserino loop on my desk, and one day by accident stuck my amplified Martens loop inside of it just to get it out of the way. Whammo! The little Martens, of course, has super selectivity but limited nulling capabilities. Apparently, placing it inside the Sanserino sharpened up its nulling capability ... not as much as a 4-ft. NRC loop, but enough to eliminate most unwanted signals, except for KEWL-1440, which can be found anywhere on the dial above 1280, especially when I turn the amp on. By contrast, I can DX 570 kHz against WIBW-580, which has an extremely clean signal. Otherwise, I am plagued by only occasional QRM here. Am trying to add the likes of KROW-780, WQXR-1560, CRWX-1130, anyone in Oregon, and anyone in Panama to the log. Perhaps with the recent political events we'll see some changes in Panamanian radio.

"The Nation's Station" Allied

-via Jerry Starr
by John Price

You can tell when a man owns a powerful radio station. There's a bit of a swagger at the NAAB convention, which means either a 1-A clear channel or four years at West Point. There's a tendency to drop little gems: "Son, I spill more watts than on the floor just warmin' her up." And the habit of referring to lesser licenses as "coffeepots."

What follows is a fond recollection for the power trippers of Kilsby Avenue -- a look back at a station located at that bend of the river where Kentucky, Ohio and Indiana meet. It was called "The Nation's Station," a true statement in an industry prone to superlatives. It hummed out with enough watts (500,000) to literally dim the street lights. In an age free from layers of man-made hash, it got requests from the royal family of Britain, not to mention loyal families from Portland to Portland.

It was a one-station network with a rate card like the NBC Red, a cast of thousands, a Who's Who alumni club, a 750-acre farm and a heart as big as the buzzing, arcing giant out at the Mason, Ohio transmitter site.

Powel Crosley, Jr. never intended to be a broadcaster. Son Powel, III, in the very early twenties, pestered Dad for one of those wireless outfits. When they went shopping for what the elder Crosley considered a toy, they found only rich men's playthings.

Instead of spending \$100 for a wireless, they bought "The ABC's of Radio" for 25¢.

The next step involved parts for a crystal set. Then came a \$200 receiver, and soon a 20-watt transmitter.

And Powel Crosley playing such records as "Song Of India," thrusting his head down an

eight foot morning-glory horn to ask for listener reports, then playing the record again.

The first Crosley radio receiver, the "Harko," was only \$9.00. A ready-to-use crystal set, it was not too aware of the ether floating by. Nor were the models that followed. Inexpensive, but not sensitive. There was a simple solution: Make the ether stronger. And powder-minded Powel did just that:

- Summer, 1921: Department of Commerce issues license for 8CR as a "special land station." Power is 20 watts, transmitter by the Standard Precision Instrument Company, of Cincinnati at 710 kc.

- March, 1922: Call letters WLW assigned by the new Federal Radio Commission. WLW is 65th licensed radiotelephone station to go on the air. Letters are received from Colorado, Maine, Michigan, Wisconsin, Connecticut.

- June 1, 1927: WLW moves to 700 kc, sharing time with WMAF, Dartmouth, Massachusetts, and KFBU, Laramie, Wyoming. Former operates summers only, soon disappears. Later moves to another frequency, leaving WLW with a clear channel.

- January, 1925: WLW orders 50 kw Western Electric transmitter.

- October 4, 1928: WLW starts 50 kw operation from new transmitter site at Mason, northeast of Cincinnati. Longwire antenna puts "local" signal into Jacksonville, Florida, and Washington, D.C. WOR, Newark (710 kc) complains of co-channel interference. Federal Radio Commission station list dated November 11, 1928 shows four other 50 kw stations:

660 kc - WEAJ, New York
790 kc - WGY, Schenectady, limited time.

800 kc - WBAP, Ft. Worth, sharing time with KTHS, Hot Springs, Arkansas.

980 kc - KDKA, Pittsburgh

- KFI, Los Angeles; WSM, Nashville; WCFL, Chicago; WFAA, Dallas and WTIC, Hartford, have 50 kw construction permits.



Master Control — This control center fed programming down a bank of phone lines to the transmitter site. During 500 kw years, WLW program listings appeared in up to seventy-six newspapers from Texas to Connecticut. Programs were routed to WLW, WSAI, WBAI, the "New York Line" and various national networks.

Solons urged to reform license-renewal and improve sound

Variety
-via Pete Kemp

Washington Radio station honchos urged congressional support last week for legislation to help what they called an industry on the ropes.

Claiming that radio operators face "illogical regulation and antiquated standards," John Dille 3d, president of Elkhardt, Ind.-based Federated Media, urged the House

telecommunications subcommittee to reform the license-renewal process and improve radio's technical quality.

"What we need is licensed-renewal reform that provides a simplified, 2-step approach, where an incumbent is first and foremost graded on his performance, not

compared with the musings of a challenger," Dille said.

Art Suberbielle, prez/g.m. of KANE-AM New Iberia, La., said today's standards for AM radio date back to the 1940s. "Unless we can provide better-quality audio for AM, AM is lost as a viable radio service," said Suberbielle.

The House of Representatives is considering license-renewal legislation and a bill that could require that receivers sold in the U.S. with FM stereo to also have AM stereo.



Here Powel Crosley, Jr. is holding in his hand one of the smallest audio transformers formerly in use for WLW. Behind him is seen a portion of the huge audio transformer used in connection with the 500,000 watt transmitter. It weighs over 35 tons and is, by far, the largest in the world.

And Crosley's radio business is booming. By 1927, The Crosley Corporation grosses \$18 million with a profit of \$3,605,973. It has added patent medicines, scalp massagers, tire patches, the Shelvador refrigerator, the Cincinnati Reds and WSAI, a second station for local listeners.

The power of Positive Powel did not end with a mere 1-A clear channel and fifty thousand watts. Harold Vance, of the Engineering Products Division, RCA Manufacturing Company, remembers conferences about a 500 kw transmitter in May of 1932. While RCA, General Electric, and Westinghouse had experimented with up to 300 kw, there were no commercial designs for such an animal.

Evidently both parties were doing their homework, for RCA had a completed design by late that year. And in either December, 1932 or January, 1933 Crosley Broadcasting signed a contract for the beast.

And, in early 1933, the on-site installation did commence at Mason.

Some questions go unanswered at this point. Was Powel alone in his journey up the power tower? Was his application for "special authority" one of several? Many? Why was WLW singled out for the grand experiment?

Up went an 831-foot Blaw-Knox diamond-shaped "vertical radiator" next to the WLW longwire. It would be a half-wave antenna, ended, and the fat middle's purpose was to handle the point of highest RF current. The downward pressure of the tower and its pre-stressed bridge-cable guys was over 200 tons, and one giant insulator took it all. The station's call letters twinkled in neon across the mid-section, which was as wide as a four-story building is high.

To carry a predicted ninety amperes of RF current, a coaxial line about ten inches in

(Continued on Next Page)

ALLIED

Lawmakers on the subcommittee panel, chaired by Rep. Edward Markey (D-Mass.), expressed sympathy for the plight of AM radio, which will be the subject of a full day of hearings before the Federal Communications Commission Nov. 16.

However, both Markey and Rep. Al Swift (D-Wash.) said they remain opposed to allowing radio license-renewal without sign of meritorious service by broadcasters. —Dennis Wharton

diameter was mounted on concrete pilings across the grassy lawn of the site. The outer conductor was of aluminum, with spring-loaded expansion joints every twenty feet or so. A mica material suspended the heavy center conductor.

But the big job was at the transmitter building. The back wall was torn out, and a new room about twenty by forty feet was added, complete with an extension on the basement. Out front, a pond 75-feet square was excavated and lined with cement. A crane on the side of the building could swing large loads into garage doors on either floor.

Up at Camlen, a lot of original research would soon get a test. The 500 kw would act as a power amplifier, using RF generated by the Western Electric 50 kw rig. Since only low-level modulation was used then, it would have its own modulator section. Imagine the look on the engineer's face who calculated the final weight of the double modulator transformers: 35,700 pounds each, including 725 gallons of oil!

The final power amplifier would actually be three PAs in parallel, a decision which was to prove most fortunate. Each PA would house four UV-898 RCA tubes — that's twelve. Add to it four more in each of the two modulator sections. Then there was the power supply, sort of a DC Incredible Hulk. The tubes required DC for their filaments. This would be supplied by several big generators. Cincinnati Gas & Electric ran two 33,000-volt lines toward Mason and a special substation on the WLW property. There was an automatic switchover out there, assuring power from one line or the other. 2,300 AC volts actually entered the building.

All of this original design was fitted into a cabinet about fifteen feet high and thirty feet wide. A catwalk about three feet from the floor led to tube compartments. Five double-shielded wooden doors, complete with interlocks, granted access to the rear.

Enough dials and meters for a small Boeing covered the front panels.

And several unusual bits of apparatus took their place here and there: a water still, which would manufacture all the distilled water for the inside cooling system. To isolate the high-voltage B+, this water would circulate through Pyrex tubing instead of metal pipes. A heat exchanger in the basement would warm a secondary system using tap water. This was routed through more big Westinghouse pumps to the outside cooling pond, where fountains helped lower its temperature before a return trip.

And oil-filled transformers would turn sour eventually, so acidity-testing and removal equipment was ready. (This may be the first transmitter in your memory which needed an oil change.)

Finally, there was a big brass nameplate. It credited the rig to RCA, although it was actually the joint effort of RCA (design), GE (RF) and Westinghouse (control). It also proclaimed a digit often quoted: "Serial Number 1."

Although Harold Vance told the FCC that installation chores were completed early in 1934, this was not the sort of thing that plugs in and plays. There were many hours of testing that winter and spring, and we can only sur-

ALLIED

CHR registering most rev growth

Hollywood The rush of radio stations into the contemporary hit-radio, or top 40, format seems destined to continue because of revenue growth for the genre, according to figures compiled by the accounting firm of Miller, Kaplan, Arase & Co. through the first three quarters of 1989.

Traditional CHR and the more

dance-oriented Power format both enjoyed double-digit revenue growth across the U.S., especially in terms of national advertising, where growth topped 20% for both categories.

Total figures for all categories underscored the robust growth of radio advertising, as total cash was up 8%, with a 6.6% increase in local support (the lion's share of the business) and a 12.8% boost in national spending.

The largest percentage growth was recorded by new age stations

such as The Wave, up 58.3%, reflecting a dramatic increase in the number of stations switching to the format during the past year.

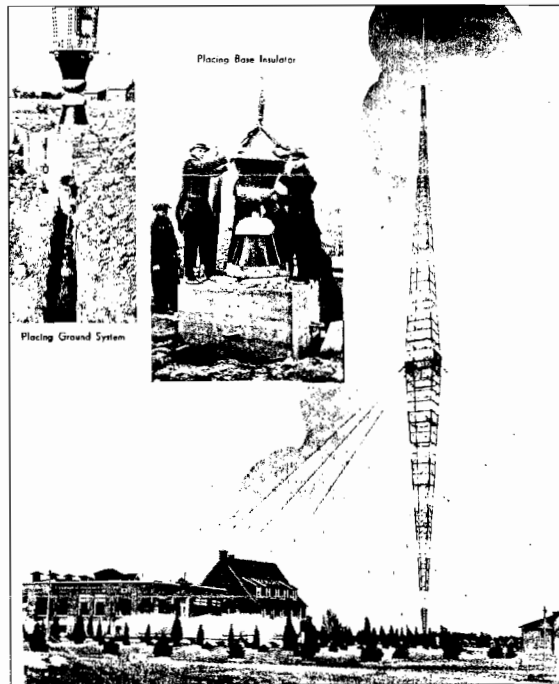
In terms of more established genres, however, the leader was the Power format (up 15.8%), followed by news/talk stations (13.4%), CHR (13.3%), oldies (11.2%) and soft-light adult contemporary (10.2%).

Other formats are clearly lagging behind in terms of revenue, reflective of either moves away from those formats or demograph-

ics that aren't as salable to advertisers.

Urban contemporary proved the only format to exhibit an overall decline, down 4.3%, while several others fell well below the total 8% growth rate.

Variety via Pete Kemp



Blaw-Knox Vertical Radiator (Gayd Type) Broadcasting Station WLW, Cincinnati, Ohio, 831 ft. high. The most powerful broadcasting station in the United States.

Bill Schwesinger remembers the night of May 2, 1934 well. The Crosley transmitter log remembers him well, too — his handwriting is all over it. A signal pair had been ordered to terminate at 1600 Pennsylvania Avenue, where a man whose fireside chats had made him well aware of the power of radio was prepared to assist. The golden key which Woodrow Wilson had used to open the Panama Canal was connected.

That log shows a final high-power test from 5:15 to 6:30 p.m.

9:02 p.m. Cut to remote line from

Washington. President Roosevelt: "I have just pressed the key to formally open Station WLW . . ."

Far from the downtown festivities, I'll bet quite a cheer went up at the transmitter house. Bill made his entry in the log. Over in Mason, the street light dimmed just a bit. And around the world, folks found a new friend on their radios: *The Nation's Station*.

If WLW was a one-station network, it jolly well acted the part:

1 - There were no recordings on the station. None, except for sound effects. Later, some ET

in 1938, station manager James Shouse set the payroll at 159 full-time, 31 part-time in the production department alone.

3 - From 1927, when WLW started originating "The Crosley Hour" for the NBC Red network, the station became a growing source of network programming. During one season, twenty-two shows per week were sent to various nets. The station's own affiliation was something of a grab-bag, however; the nets needed it more than it needed them. Consequently, WLW took its pick from several. The 1936 *Broadcasting Yearbook* shows it as an affiliate with the Red, the Blue and Mutual. WCKY, WSAI and other Cincinnati stations evidently picked up what WLW couldn't fit into its schedule.

4 - Perhaps the most famous WLW program of all was called "Moon River," and it wasn't the Audrey Hepburn or Andy Williams variety at all. It began in 1930 to showcase the three-manual seventeen-rank Wuritzer dedicated to the memory of Powel Crosley's mother.

Cue the Clooney Sisters with "Deep Purple." Cue announcers like Jay Jostyn and Don Dowd and Ken Linn with poems such as "The Roses," by John Smith, or "The Shooting of Dan McGrew."

"Dan McGrew! Who read Dan McGrew? Fire the bastard!" But sir, it was a request from a regular listener. "No listener is going to dictate . . ." The Duchess of Edinburgh, sir. She cabled us last night . . .

Meanwhile, back at the transmitter, the "special problems" to which Mr. Vance had alluded did not go away by themselves. Director of engineering Jim Rockwell, who had replaced Joe Chambers, told the FCC that WLW had 63 engineers and operators. Jim

THE CROSLLEY RADIO CORPORATION
OVERSEAS (WORLD) TRANSMISSION RELEASE

Date	Time	From	To	Remarks
May 2, 1934	5:15 p.m.	WLW	WLW	Final high power test
May 2, 1934	9:02 p.m.	WLW	Remote	Test to remote control
May 2, 1934	9:15 p.m.	WLW	Remote	Test to remote control
May 2, 1934	9:30 p.m.	WLW	Remote	Test to remote control
May 2, 1934	9:45 p.m.	WLW	Remote	Test to remote control
May 2, 1934	10:00 p.m.	WLW	Remote	Test to remote control
May 2, 1934	10:15 p.m.	WLW	Remote	Test to remote control
May 2, 1934	10:30 p.m.	WLW	Remote	Test to remote control
May 2, 1934	10:45 p.m.	WLW	Remote	Test to remote control
May 2, 1934	11:00 p.m.	WLW	Remote	Test to remote control
May 2, 1934	11:15 p.m.	WLW	Remote	Test to remote control
May 2, 1934	11:30 p.m.	WLW	Remote	Test to remote control
May 2, 1934	11:45 p.m.	WLW	Remote	Test to remote control
May 2, 1934	12:00 a.m.	WLW	Remote	Test to remote control

An Era Begins — Transmitter log for May 2, 1934, shows 500 kw testing from 5:15 to 6:30 p.m., official superpower operation starting at 9:02 p.m., by remote control from the White House. Antenna current (circuit jumps from 10 to 72 amperes. Bill Schwesinger's notes also show effects of unlimited audio peaks during dedication program. (Note: WSAI was co-owned by Crosley Broadcasting, so was shortly thereafter.) Later, simultaneous with WLW later programmed Spanish-language fare beamed to South America.)

Wagner understands that up to seventeen men manned the transmitter site at times.

Why? Well, this was all virgin territory, and there had to be some measure of design deficiencies. For one, the massive power supply seemed to be both good and bad news:

ALLIED

US Marshals Seize Pirate Radio Station Brooklyn NY As part of a continuing effort to shut down pirate radio broadcasters, US marshals and FCC staff seized equipment belonging to a pirate station here on 9 November.

The equipment, housed in Borough Park, was used to

unbelievable as it seems in this day of multi-stage audio processing, there was no limiter amplifier — they just weren't used until the late thirties. Couple this with the sudden peaks that are bound to sneak through on 100% live programming.

Somebody would let fly with one, and the big rig would call "power!" all the way back to CG&E. During a moment of overmodulation, an AM carrier all but loses its negative side, so there you were, all powered up with no place to go. Something had to give, and it did.

WLW had a "transmitter control room" with an operator who acted as the final gain rider, and who typed a running log of what did and didn't get on the air. These are fascinating documents, for they not only show the program schedule for the station, but show the problems that continued, more-or-less, through the 500 kw period:

May 4, 1934 . . .

... Ma Perkins OK. 500 kw Ann OK. Muldowney - Refrigerator Adv-off-on 2:12:12. PA #7: same one again 2:12:55; — closing ann peaked 30. Low Down - off-on 2:29:30. PA #7 again. Sputter And Whine - off-on 2:33:40. PA #7 and PA #8 — off-on 2:40:53. Took couple seconds 2:45 to isolate PA #2, and #1 PA isolated shortly after. #2 PA rushed back in service 2:47:30, neutralizing condenser in #1 PA blew . . .

... 6:57:50 ten sec lost due antenna gap holding arc . . .

... 7:01 transmitter off to find trouble in coupling house, thinking it was a fire there . . .

The wisdom of foresight caused each power amplifier to have an "isolate" circuit, which would power it down after so much internal trouble. It left the station with some, if not all of its superpower.

Bill Schwesinger recalls especially eerie happenings when angry amperes teamed up with mother nature. Lightning loved the big Blaw-Knox, and would let loose with enough power to not only arc across the arrester gap at the base, but around the guy wire insulators, too. Once started, the RF energy would keep the arcs alive until the transmitter was shut down. Nighttime time-exposure photos exist of this sight.

Finally, a photocell device was mounted in a box, with a lens trained on the arrester gap. Wired into the interlock system, it gave the transmitter an off-on to break the arc.

Inside the building, flash-overs sounded like pistol fire. Bill remembers the huge mercury-vapor rectifiers "rattling the place" when they arced.

And not all the fireworks came from the transmitter farm. Foes cried "foul!" for both technical and economic reasons. Loudest of all were WOR, Newark, (at 710 kc) and CFRB, Toronto, (at 690). Since CFRB was 375 miles distant compared to Newark's 500, it was decided that The Nation's Station would go directional to protect the maple leaf.

In fact, CFRB howled so loudly that on December 21, 1934, WLW returned to 50 kw at local sunset until the directional could be completed.

Two quarter-wave self-supporting towers were erected across the road to the south, in

Radio World
via Jerry Starr

operate an unlicensed station on 91.9 MHz under the illegal call sign WJPL, according to the FCC. Another Brooklyn pirate station, WHOT, was shut down in July.

the middle of Everybody's Farm, which was also owned by Crosley Broadcasting. An open-wire transmission line made from streetcar trolley wire rambled across the fields. No phasing equipment was used — the line length was adjusted to that job. When it was finished, WLW had a nice null to the north-northeast. Power tripper note: radiation in the null direction was only 50,000 watts!

The WOR problem wasn't so easy to solve. Ed Dooley, now the chief at WLWT, was in the Crosley propagation department. He describes a team, armed with portable ET cutters, receivers and signal-strength meters. The team traveled from Alabama to New England, cutting discs of the first quarter of each evening hour: alternate four-minute segments of WOR, then WLW, then WOR. The discs are still extant, and give a wonderful overview of what radios were receiving as we climbed out of the Depression.

The kitchen got hotter and hotter, but Powel Crosley was committed to stay for the duration. He was not alone: by May 1, 1938, *Broadcasting* was able to report fifteen other applications for superpower. From KDKA, KFI, KNX, KSL, WBZ, WGN, WGY, WHAS, WHO, WJW, WJZ, WOAI, WOR, WSB and WSM. And apparently every six months, the Crosley counsel battled through another six-month extension of that 500 kw "special authority."

And no wonder. Romance of the superpower aside, the business of WLW required lots of black ink. It's silly to assume that the fiscal reward to be derived from ten times the power of anybody else's radio station never crossed Powel Crosley's mind.

Testing before the FCC, one E. J. Ellig, controller for the Crosley Corporation, charted these figures for their fiscal year 1937: Gross Revenue, \$2,662,704; Net Income, \$702,954 and a Net Profit of 26.4%.

Not bad for a business "recovering" from the Great Depression.

Broadcasting for June 1, 1934, carried an item to be the effect that WLW's rates would be increased by ten per cent on July 1, and another ten per cent or so in October. The current evening rate was listed at \$990 per hour, \$660 per half and \$440 per quarter. After the second increase, that hour would cost about \$1,200.

Opponents of WLW (and of superpower in general) were sure to have made notes in their little black books.

The business of broadcasting descended on Cincinnati that year as the NAB's annual convention got rolling September 16th — the Chesapeake and Ohio Railway taking space in the trades to advertise air conditioned comfort via its George Washington, Sportsman and FFV runs.

Meanwhile, across the street, WCKY, Cincinnati, ran a series of double-trucks using the brave line "Doing the real job" of radio in Cincinnati. L. B. Wilson, WCKY's owner, signed a somewhat capricious effort in December, 1934, which read:

We are proud that our neighbor, WLW, is the greatest broadcasting station in the world. We are happy in the tribute that WCKY is accepted as the next choice for covering the Cincinnati market.

(Continued on next page)

WCRV
AM 640
YOUR CHRISTIAN RADIO VOICE
SERVING THE SOUTHEAST

Undoubtedly, number two was trying harder.

Radio's Who's Who could be written from the WLW pay records. True Boardman, of "Famous Jury Trials." Jay Jostyn, who would later protect our life, liberty and the pursuit of happiness as Mister District Attorney. Jane Froman sang on "Moon River," and so did the Clooney Sisters — Rosemary and Betty.

When Mrs. Crosley's Wurliizer in Studio A wasn't providing music for Ma Perkins, one Thomas "Fats" Walker used to experiment with it. He was fired when discovered playing one of his jazz tunes on it. . .ironically, one he called "Ain't Misbehaving."

And Doris Kappelhoff (later Day) sang with Jimmy Wilber's Little Band.

Red Skelton originated his "Avalon Time" from the studios for one of the networks. (Anyone remember Avalon cigarettes?) There was Singin' Sam. The Lawnmower Man, before Harry Frankel moved to New York and Barbasol.

Little Jack Little. The Mills Brothers ("Four boys and a guitar"). The King, The Jack and The Lester: that got shortened to The Ink Spots.

Red Barber did a mean play-by-play. Durood Kirby did a smooth anything. Later there was Rod Serling, Eddie Albert, Dick Noel, Andy Williams, Frank Lovejoy — and don't forget the McGuire Sisters.

to ride the waves of the big transmitter.

And there was Smilin' Ed McConnell, all three hundred pounds of him. Has reality dimmed to legend, or did Smilin' Ed pitch the first radio per-inquiry deal for the Olson Rug Company that Sunday morning? And did so many listeners hear and follow this pied piper that the Olson Rug Company nearly went through receivership for one program that cost what a 13-week schedule did on the rate card?

Radio frequency people can do funny things, if there is enough of it. There was, and it did. Some of the WLW "resonance" stories are hard to believe, but you want to believe them anyway.

Of course, the lights in farmhouses and barns near Mason burned without the aid of CG&E. Of course, the tin roofs — indeed almost any length of wire (water pipes, fences, bedsprings) — could talk at you on a humid summer night. And the little old lady who heard voices in her head. They probably did go away after the dentist adjusted her bridgework.

There is an elderly employee of CG&E who used to man the substation which fed one of WLW's two 33 kv industrial lines. He could tell, he says, when the station was on his line at 500 kw. The final voltmeter would dance ever so slightly in time to the music. Wow!

There were too many foes crying "foul" with ferocity. There may (or may not) have been a

claiming "Stay Refused, WLW Returns to 50 kw," *Broadcasting* announced the end of The Nation's Station. "WLW," stated the article, "announced the power reduction February 28 to its audience with a simple news statement."

The street light in Mason would dim a few more times during the war years, and Der Feuhrer would be heard to curse "those bastards in Zinzinnati."

Last January 19th, the warm and well-lit studios at 3 East Fourth Street sent a well-modulated Dolly Parton through solid-state program amplifiers, but the eighth floor of the Crosley Building at 1329 Arlington was dark and damp.

The play-by-play was smooth and professional, but there was no sound in the studio where the Crosley Organ used to paint its lazy stream of dreams.

Out at Mason, a discriminant audio processor and a screen-modulated Doherty circuit created a maximum modulation envelope, but the big rig in the back room wasn't speaking to the Duchess.

The Nation's Station is from another time and place. 500 kw doesn't compute on a microprocessor. And yet, alone in the darkened back room, it seemed that the faintest red glows came from deep within dusty glass.

Thanks go to Jim Hampton, WLW's current vice president/engineering, for permission to prowl the nooks and crannies of the big rig. And to Jim Wagner, his sidekick and unofficial tour guide, whose interest in The Nation's Station led to a job as engineer there. And to Bill Schwesinger and Ed Doolley, who were there when it happened, and can remember. To John Bruning, of WCET in the Crosley Communications Center, who let me and my camera in after hours to photograph the name plate for the 500 kw. And to Dick Perry, author of the delightful "Not Just A Sound: The Story of WLW" (Prentice-Hall, 1971) which should be on your shelf if you call yourself a broadcaster.

This article from 1979 is one of many the author hopes to put into book form. Do you have any interesting historical radio stories to contribute? If so, please send to: Real Radio, John Price, Dept. 45, P.O. Box 1487, Richmond, IN 47375.

John asked us to note that during the Super Power era, in 1938, the FCC ran a survey wherein it was learned that WLW was the #1 station in 33 states and #2 in 6 more states.

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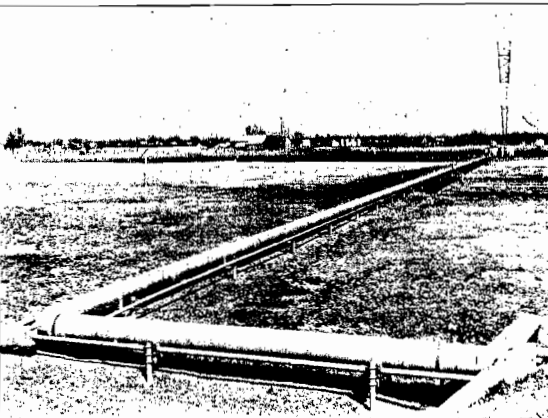
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ALLIED

We need your help with Station Addresses

We are in need of the following station's addresses. Look thru your latest veries, phone book or listen to the station for their address. Then once you've done that send that info to the NRC Headquarters. Thanks.

SS Freq	Calls	Location	ST	SS Freq	Calls	Location	ST
100.3	KMVC	Wishek	ND	88.1	WEFR	Erie	PA
93.5	WBNV	Barnesville	OH	88.5	WMCA	Erie	PA
104.9	WNGV	Caldwell	OH	90.7	WVMM	Grantham	PA
89.3	WVXC	Chillicothe	OH	95.7	WAXH	Olyphant	PA
97.1	WZTX	Coal Grove	OH	94.7	WHUM-FM	Fatton	PA
105.9	WZOM	Defiance	OH	94.9	WNSY	Port Allegany	PA
102.5	WZOD-FM	Edgewood	OH	105.7	WKXU	Portage	PA
107.5	WFSD-FM	Fort Shawnee	OH	99.5	WDSN	Reynoldsville	PA
98.3	WJMR	Fredericktown	OH	96.9	WMKB	Ridgebury	PA
95.7	WRED	Gibsonburg	OH	95.5	WKHL	Salladasburg	PA
101.1	WVCD	Grove City	OH	106.3	WORM	Smethport	PA
103.5	WSWZ	Lancaster	OH	92.5	WKGB-FM	Susquehanna	PA
107.7	WLMA	Loudonville	OH	93.3	WKGV	Tioga	PA
91.7	WOSV	Mansfield	OH	107.9	WGBE	Williamsport	PA
107.7	WSNV	Nelsonville	OH	92.9	WZLA-FM	Abbeville	SC
107.7	WHMQ	North Baltimore	OH	89.1	WLJK	Aiken	SC
99.7	WKSD	Paulding	OH	105.5	WIJY	Hilton Head	SC
95.7	WBJY	Shadyside	OH	106.3	WNMX	Newberry	SC
96.9	WTRJ	Troy	OH	99.7	WHTK	Port Royal	SC
99.9	WTUZ	Uhrichsville	OH	97.1	KPSD-FM	Faith	SD
98.9	WXMX	Upper Arling	OH	91.9	KQSD-FM	Lowry	SD
89.5	WVXM	West Union	OH	104.3	KTOG-FM	Rapid City	SD
91.7	WYTN	Youngstown	OH	103.7	KVCU	Redfield	SD
107.9	KEYB	Altus	OK	94.5	KPLO-FM	Reliance	SD
105.7	KCTL	Alva	OK	100.5	KSMJ	Salem	SD
99.7	KCCX	Commerce	OK	100.1	KCFS	Sioux Falls	SD
97.7	KLAK	Durant	OK	99.3	KREH	Sisseton	SD
94.3	KICZ	Elk City	OK	93.1	WNBE	Alamo	TN
98.5	KTIJ	Elk City	OK	90.7	WSMC-FM	Collegedale	TN
92.5	KPRV-FM	Heavener	OK	104.5	WGFX	Gallatin	TN
89.3	KCCU	Lawton	OK	95.7	WAYB	Graysville	TN
90.3	KVRS	Lawton	OK	105.3	WLSZ	Humboldt	TN
105.1	KBLP	Lindsay	OK	88.3	WHGG	Knoxville	TN
106.7	KYNZ	Lone Grove	OK	101.5	WTWL	Mc Kinnon	TN
92.1	KZKQ	Mangum	OK	98.7	WXVO	Oliver Spring	TN
94.3	KNFB	Nowata	OK	93.9	WSIB	Selmer	TN
104.9	KMYB	Pawhuska	OK	96.3	WMEY	Seymour	TN
102.3	KTOW-FM	Sand Springs	OK	102.3	WFXS	Soddy-Daisy	TN
91.1	KFOM	Sulphur	OK	93.9	WAYA	Spring City	TN
100.3	KCDY	Taft	OK	88.3	WUTZ	Summertown	TN
93.5	KIMY	Watonga	OK	104.3	WOTH	Surgoinsville	TN
102.3	KWDQ-FM	Woodward	OK	101.3	WECD-FM	Wartburg	TN
101.3	KPMA	Altamont	OR	106.3	KHXS	Abilene	TX
89.1	KSMF	Ashland	OR	103.1	KRGN	Amarillo	TX
91.1	KPAB	Astoria	OR	98.3	KKHR	Anson	TX
91.9	KJVS	Baker	OR	94.1	KULF	Brenham	TX
104.7	KCMB	Baker	OR	90.5	KBTT	Bridgeport	TX
91.3	KDAB-FM	Bend	OR	95.1	KJJB	Caldwell	TX
98.3	KIDD-FM	Bend	OR	101.3	KJKS	Cameron	TX
92.7	KKRS	Burns	OR	103.1	KEZP	Canadian	TX
90.9	KSKF	Klamath Falls	OR	92.1	KCZO	Carrizo Spring	TX
100.1	KWRL	La Grande	OR	93.5	KQMG	Carrizo Spring	TX
103.5	KOPE	Medford	OR	98.9	KTUX	Carthage	TX
97.9	KLUB	Milton-Freewater	OR	91.5	KCBZ	Clarksville	TX
90.9	KEWP	Newport	OR	103.3	KWOW	Clifton	TX
107.5	KLRR	Redmond	OR	88.7	KFBB	Corpus Chris	TX
92.1	KSYD	Reedsport	OR	107.1	KDNC	Denver City	TX
91.5	KSRS	Roseburg	OR	95.1	KWTA	Electra	TX
107.1	KBKD	Sweet Home	OR	95.1	KBRW	Friona	TX
104.3	KIRQ-FM	Tri City	OR	104.9	KRTX	Galveston	TX
99.9	WHOE	Avis	PA	107.7	KJWL	Georgetown	TX
102.9	WOKW	Curwensville	PA	92.1	KCLW-FM	Hamilton	TX
93.7	WDLS	Dallas	PA	101.9	KAGU	Huntington	TX



The RF transmission line was 775 ft. long and had a surge impedance of 100 ohms. The outer tube had a diameter of 9.78 inches.

And the hills were alive with the sound of hillbillies: Mimmie Pearl, Ernie Lee, pre-Grandpa Jones, Skeeter Davis, Marge Bowes, Cowboy Copas, Bonnie Lou, Shug Fisher, Merle Travis, Lulu Belle and Scotty, Red Foley, Whitey Ford ("The Duke of Paducah"), George Gobel and Kenny Price. And wonderful old Pa and Ma McCormick, who tended the flock.

The "legitimate" musicians, with their union cards, looked askance at the hillbillies with their fiddles, guitars and banjos. But the money for Western music rolled in from sponsors eager

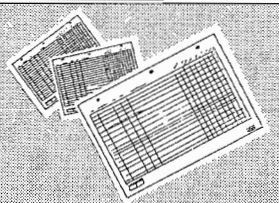
to ride the waves of the big transmitter. And there was Smilin' Ed McConnell, all three hundred pounds of him. Or, a sizable contribution made to the wrong party at the wrong time.

In any case, the regular application for another six-month superpower extension was set for hearing in 1938. Duke Patrick, former general counsel for the Radio Commission, waded into a hearing and presented WLW's case in the bro-u-ha-ha that took a good deal of that hot summer season.

On March 1, 1939, under a headline pro-

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92.3	KFFX	Killeen	TX	94.3	WRLF	Fairmont	WV
98.1	KVOQ	Lorenzo	TX	100.9	WTBZ	Grafton	WV
98.1	KKCL	Lorenzo	TX	107.1	WKZG	Keyser	WV
91.7	KAMY	Lubbock	TX	106.7	WVKM	Matewan	WV
91.3	KXPZ	Lytle	TX	96.5	WRKP	Moundsville	WV
96.1	KIXF	Madisonville	TX	102.3	WRZZ	Ravenwood	WV
92.3	KSER	Marshall	TX	100.1	WJJB	Romney	WV
103.5	KTJB	New Boston	TX	105.7	WXKI	Salem	WV
96.1	KQTX	Odessa	TX	100.1	WDMX	Vienna	WV
96.9	KDHB	Pittsburg	TX	102.9	WELC-FM	Welch	WV
90.7	KDTD	Flainview	TX	96.3	WLWR	Brillion	WI
97.7	KBMI	Roma	TX	100.5	WNAM	Columbus	WI
97.1	KBAL	San Saba	TX	105.9	WMJB	Evansville	WI
92.7	KJJI	Shamrock	TX	90.3	WHBM-FM	Park Falls	WI
104.1	KWSM	Sherman	TX	104.9	WMBU	Stevens Point	WI
92.7	KESO	South Padre	TX	104.7	WZXA	Sturtevant	WI
104.9	KDDA	Tulia	TX	94.5	WZFR	Tomah	WI
88.5	KHHF	Victoria	TX	91.9	KHEF	Buffalo	WY
100.9	KEPG	Victoria	TX	95.7	KZJH	Jackson	WY
90.5	KCRN	Wichita Falls	TX	99.1	KRLU	Lost Cabin	WY
100.7	KHSB	Brigham City	UT	104.1	KMBU	Powell	WY
95.7	KIPP	Delta	UT				
95.7	KLGG	Delta	UT				
96.7	KOFI	Moab	UT				
92.7	KCDH	Nephi	UT				
92.3	KTCE	Payson	UT				
98.5	KBWL	Roosevelt	UT				
94.1	KWQC	Canaan	VT				
99.7	WZQK	Coeburn	VT				
95.7	WSNQ	Danville	VT				
98.3	WGMT	Lyndon	VT				
104.1	WRQL	Rupert	VT				
96.1	WSBH	Warren	VT				
107.5	WVNH	West Rutland	VT				
102.7	WZST	Appomattox	VA				
105.1	WRDJ-FM	Bridgewater	VA				
89.3	WVTU	Charlottesville	VA				
100.7	WFNR-FM	Christiansburg	VA				
93.1	WDIC-FM	Clincho	VA				
98.3	WPKZ	Elkton	VA				
98.5	WPKZ	Elkton	VA				
101.7	WLQM	Franklin	VA				
90.3	WWLC	Lynchburg	VA				
88.9	WCVF-FM	Richmond	VA				
99.9	WZBB	Rocky Mount	VA				
92.1	WXZY	Ruckersville	VA				
90.1	WQCR	Waynesboro	VA				
107.9	WPT6	West Point	VA				
91.1	KNBF	Aberdeen	WA				
91.7	KZAZ	Bellington	WA				
90.7	KSER	Everett	WA				
102.3	KIVS	Goldendale	WA				
94.3	KKEE	Long Beach	WA				
95.3	KAAR	Medical Lake	WA				
104.9	KMJY-FM	Newport	WA				
97.7	KZLN-FM	Othello	WA				
99.5	KZLZ-FM	Pullman	WA				
89.1	KFAE-FM	Richland	WA				
99.5	KXAA	Rock Island	WA				
91.1	KYWB	Yakima	WA				
104.1	WDCI	Bridgeport	WV				
92.5	WZAC-FM	Danville	WV				
94.5	WBES-FM	Dunbar	WV				

Farmers want radio tower down

By Donald Schultz
for the Telegraph-Herald

MONTFORT, Wis. — When FM Christian radio station WJTY when on the air in 1983, it didn't expect static from nearby farm-

ers. However, a recent storm of protests — from area farmers who claim electricity from the radio tower has disturbed their cows' milk production — has increased to a crackling level.

A group of Montfort area farmers is seeking the removal of the tower for the Lancaster-based station. The WJTY tower, owned by Joy Public Broadcasting, is located just off U.S. 18 about three miles west of Montfort.

Station manager Lowell Bush, Lancaster, answered a summons Monday morning from Richard DiVall, whose farm home is located across the highway from the tower. DiVall owns the land on which the 400-foot tower stands.

The summons was part of a small claims action brought by DiVall, which seeks to force Bush to move the tower. The hearing was held Monday in Grant County Circuit Court before Judge John Wagner. The trial is scheduled for 9 a.m. Jan. 10. DiVall, along with farmers Dale Vogel and Carlos Winters, contend that the station causes ground currents that make their livestock "fidgety, nervous and under stress." The Vogel and Winters farms are south of the tower.

Vogel has a videotape of Winters' cattle, dated October 1989, which he claims proves the existence of stray voltage. The cattle are fidgeting and swishing their tails, he said, even though there are no flies to bother them.

The station leased the tower site from DiVall, but the lease expired Oct. 31, 1987. Since the ex-

piration, the station has been paying \$450 per month in rent.

Robert P. VanDeHey, Lancaster attorney for Bush, told Wagner that he is seeking a "reasonable time" for moving the tower.

Bush argued that an examination on Aug. 5 provided no evidence that stray voltage or ground currents originate from the tower. Present at the examination were DiVall, Vogel, Bob Vosberg of the Grant Electric Cooperative in Lancaster and James M. Crooks, president of Broadcast Communications in Verona.

Vosberg said in an interview Friday that the cooperative had data and information of a stray voltage and ground-current problem, but would not release it without permission of cooperative members.

The Crooks report states that before grounding, the electricity level at Vogel's garage was 40 microvolts per meter, and 30 microvolts per meter at the milk barn.

When the cooperative installed grounding rods at each tower anchor and at the tower base on Aug. 7 and 8, 1989, a measure of the voltage showed 75 microvolts per meter at the garage and 80 at the milk barn. DiVall then disconnected the grounding rods.

"I believe the problem facing Mr. Vogel is extremely serious, and answers need to be found which will explain the strange happenings," Bush said. "But I find no direct tie-in to the AC power lines or radiation from the tower."

Vogel countered with the report from Duane Dalberg, a physics teacher at Concordia College in Moorhead, Minn., that 2,000 amperes of electricity was detected flowing down one of the guy wires.

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