NATIONAL	The magazine of the National Radio Club —SINCE 1933— Volume 56, No. 21 - Monday, February 27, 1989 (ISSN 0737-1659)

Inside ...

2 .. No AM Switch; DDXD-E instead

5 .. DDXD-W

6 .. IDXD

7. WMHQ. WROW

8 .. LIL-1 Circuit 11 .. Antique radios

12 .. Radio: Lost

18 .. Musings

17 .. Formats 19 .. Goodies

14 .. GYA Special

16 .. City Quiz, KLAM

From the editor ...

The Graveyard Achievements Special on page 14 this issue really is special ... it's a list of long-time NRC member Roy Millar's accomplishments on the GY channels. Thanks to Roy and Bill Hale for what must have been thousands of hours of both DX'ing and typing to get this list to the pages of DXN.

that easily could have faded into obscurity, except for the dedication of Bill in keeping it alive. Speaking as one who has seen a once-popular column that he previously edited, IDXA, die for lack of an editor, my hat is off to Bill for making GYA both useful and interesting. The difference between a dving column and a vital one is often a committed editor, and Bill is an example of the dedicated NRC editor. Thanks for being a leader, Bill.

Musings ... Mike'n'Sue are eagerly waiting your contributions to Musings. We are still accepting applications for a permanent editor, although we've received several. If you can give up 2-7 hours of your time per week to type and edit Musings of the Members, please submit a typed application to myself or Mike, or both of us. Also, we'd like to hear from NRC'ers interested in reviving such columns as IDXA or in serving as backup editors.

DXChange ... We've had a couple of inquiries about the status of this infrequent column. For the time being, unless convinced otherwise, we feel that members who are trying to buy or sell items are served in a more timely fashlon if requests are sent directly to Topeka. Two entries this time: John M. Sheeley - 1240 Maricopa Drive -Oshkosh, WI 54904 would like to buy a Sony SRF A100 or Radio Shack TM152 AM Stereo receiver. Some RS stores may still have the TM152 on hand ... check for John, would you? And Thomas M. Cameron - 9 Ridgewood Dr. - Northfield, NJ 08225 [(609) 641-4106 between 2300-0300] is offering

an amplified Sanserino loop and a GE SuperRadio Il, both for \$100 plus \$15.00 shipping.

Milestone ... Jerry Starr is on vacation this week; hence, no AM Switch this issue. In a note. he added: "Last week I celebrated (?) 33 years of steady employment in the broadcasting industry. Perhaps this will explain my addled condition ... '

Publications ... Julian Anderson and It occurs to me that the GYA column is one Gabriel Ivan Barrera are still offering "The Art of LAm QSLing" for U\$3.00 or 6 IRC's. Sample phrases in both Spanish and English are included. as is some Portuguese. Write to them at Casilla 57, Suc. 40 - 1440 Buenos Aires, Argentina ... Don Erickson writes that the WRTH is currently for sale from him at \$20 or 5 for \$60 postpaid Book Rate (+6% CA residents), add \$2 per copy for Priority Mail. Back copies are available from 1981-86 at \$18, and after 5-15, 1989 WRTH's will go for \$13, Book Rate only. Inquiries welcome at (714) 687-5910. Century Print Shop, Dept. NRC - 6059 Essex St. - Riverside, CA 92504-1599.

DX Time Machine From the pages of DX News

Twenty-five years ago ... from the February 22. 1964 issue: Wayne Plunkett, Weston, ON, on 1-27 bagged WIBX-950, KSTT-1170, XEBS-1410, KLIF-1190, Bordeaux-1205, KRKD-1150, KBOM-1270; on 1-28 KAYL-990, plus on 2-2 KWAM-990, KRCB-1560, KPIK-1580, and KPRC-950 ... not to be outdone, Gary S. Collins, Cranford, NY, on 2-3 logged KRYT-1530, WINU-1510, KORL-650, CX28-10990, KYSN-1460, KDON-1460, KSOC-980, and CFPL-980 for a decent night of DX'ing.

Ten years ago ... from the February 26, 1979 issue: NRC member Marty Wright, Springfield, 1L, was to conduct a test and frequency check of his station, WCVS, on 2-26, as was member Dave Schmidt of his station, WCHE-1520, in West Chester, PA, on 2-27 ... Paul Mount contributed 60 entries to Rocket Ray Arruda's DDXD ... 41 contributers filled 12 pages with Musings ... Frank Wheeler, Erie, PA noted that he hadn't received KFl for months but did receive KSL. WOAI, and WWL.

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

Domestic DX Digest - East

William Hale

2160 Farm to Market Road Johnson City, NY 13790

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

MEDIUM WAVE rAMblings

- Welcome aboard, Dava Johnson of Gainesville, FL, who sent 4 pages of his DX. Unfortunately, much goes way back before our deadline for this issue, and much is foreign. But still, plenty to report.
- We may have a radio station owner in our midst: Eric Buenasan (etal) made an initial offer for KXEN-1010 St Lou. If the investors come up with dough, and the deal is made, changes will be coming at the 50 Kw daytimer. If the current owners accept the proposal, you'll read about here in DXN. Then Eric won't have any time for DX! Good Luck, guy.
- No more publicity will be given to THAT pirate in NY. Write to de boss (Mike Knitter) for reasons. He'll tell you stories that will curl your eyelsshes.
- Due to my inattentiveness, I mixed up Rick Dau's 1170 and 1580 news a couple of issues back. Apologies all around, except to the FCC, who should be smarter than to assign call letters of KSTT & KTSS to the same city!
- Remember our few rules: this column is for DOMESTIC DX (ie:stations licensed by FCC & CRTC) only, all others to IDXD; report in ELT; print neatly or type; current loggings only; list your loggings in frequency order; and remember... make it real DX. That's all we ask. Let's see what's been heard the past month or so.

SPECIAL

- 810 KCHG TX SOMERSET 2/1 format now GOS, from NOS; ID: Your Full Gospel Alternative (AB-TX)
- 930 WKY OK OKLAHOMA CITY while listening to the Grend Ole Opry on WSM, they announced the show is also heard on WKY (GH-KS)
- 1030 WJKZ TN WHITE BLUFF 1/31 0000-0100 CL change, ex: WBDX: C&W formet;
 IDs as: The all-new AM 1030 K-Z Country running max of 1 Kw; sked:
 0800-0100 (RJT-NC)
- 1130 WHGA GA MOULTRIE 1/30 1757 with community nx, Community Involved WHGA slogsn+AC mx by Robert Palmer; temp 62°, annot of power cut, WHGA Moultrie legal ID+CBS World Tonight; gone 6 1801; change from REL;
- somebody finally wised up! ;very good with traces of KWKH (EB-GA)

 1440 WSLE GA BREMEN 2/1 1st day back on; new XR; format: 0600+1200 Oldies;
 1200+1800 C&W; 1800+sign-off GOS (BA-GA)
- 1830 KGTN TX GEORGETOWN back on with OLD; slogen: The Roots of Rock 'n' Roll (AB-TX)
- 1800 WWBR TN HARRIMAN this station erroneously reported last week as SHN Stardust, is really Contemporary Christian format and has been OFF AIR since 10/17/88 dua to direct hit of lightning; I've used up my ONE mistake for 1989, hi (RJT-NC)

UNIDS AND UNIDS IDd

1090 UNID ?? ~ 1/24 1720 briefly with C&W mx by the Judds, then lost to WBAL; ID sounded like WKPE; WKTE, perhaps? Are they C&W (LMc-NY) 1560 UNID ?? ~ 1/6 1740 poor under WQXR with C&W mx, REL (LMc-NY)

DX/EQUIPMENT TESTS

- 1080 WKAC AL ATHENS 1/18 0300-0310 no chance...too much noise (LMc-NY)
 1480 WBET HA BROCKTON 1/2 0104-0130 fair thru local WGNA with NRC IDs
 (LMc-NY)
- 1590 WVNA AL TUSCUMBIA 1/23 0243 with ID: This is Radio Station WVMA, leter heard address with verie signer given; poor under noise/WAKR; 1st AL test caught this season (LMc-NY)
 - WVNA AL TUSCUMBIA 1/23 not heard; was fast aslaep for this one (EB-GA)

STEREO LIGHTS LIT

- 660 WFAN NY NEW YORK now with C-QUAM (EB-GA)
- 710 WOR NY NEW YORK now with C-Quem (EB-GA)
- 770 WABC NY NEW YORK now with C-Quae, dropping Kahn (EB-GA)
- 820 WBAP TX FT WORTH now with C-Quam, dropping Kahn (EB-QA)

PIRATE ACTIVITY

1621.3 WKND PA PITTSBURGH - 2/1 0044-0100 with this is commercial-free weekend radio AM Pirate Radio, now preparing for broadcasting from ???; very good (RJT-NC)

MIDNIGHT TO MIDDAY

- 660 CFOS ON OWEN SOUND 2/1 0645-0700 poor with AdCon; Canadian agri-nx @ 0648: 0652 AM 560-1490 annot (DS-WI)
- 580 CFRA ON OTTAWA 1/30 0135 ID by DJ, 1967-vintage song by the
- Tremeloes: fair+good (WPT-DC)

 NE OMAHA 2/3 0100-0138 with Ai Nx @ :00+C&W mx with DJ Tim or Jim Powers, several ads; fair+good with Cuban nulled; NE #2
- R20 WRJZ TN KNOXVILLE 12/30 Midnight sign-off noted in progress (HF-MI)
- 660 KTNN AZ WINDOW ROCK 2/5 0200 fair over WFAN/XERPH with sign-off in EE & Navajo; AZ was on of 16 states never heard from St Louis
- 720 WWII PA SHIREMANSTOWN 2/1 0606-0615 with WGN nulled with various ads & talk; mx after 0611 but too weak to identify what kind; fair+fadey (DS-WI)
- 740 WDFZ TN TULLAHOMA 12/26 0228 up briefly with Oldies & SNN Nx; no CBL noted; poor (HF-MI)
- CBL ON TORONTO 12/30 0109 sign~off noted in progress (HF-MI) 950 KPRC TX HOUSTON 2/1 0005-0040 with KPRC News+wx with Wayne ???
- +SID+Tom Snyder Radio Show: heavy WSPA QRM; TX #10 (RJT-NC)
 970 WBLF PA BELLEFONTE 12/30 0229 poor with Solid Gold WBLF, up out of
- the din, with ID!; poor (HF-MI)

 980 WSIX IN NASHVILLE 2/8 0228 good over WONE with Best of King, McGruff
 PSA, AM 980 WSIX Mashville ID+MBS Nx (EB-GA)
- 1050 WUKQ NY NEW YORK 12/28 0055 in SS with ID: Mil Cincuenta Radio Mil. EE & SS IDs; Oldies & POP-style mx in EE & SS; CHUH QRH noted
- 1150 WZBQ AL TUSCALOOSA 1/14 0422 fair+poor mono & signals with WJBO with Rockin' America Top 30 Countdown, promo for TV-101 on CBS-TV, ad for 0xy 10, request show promo, WZBQ-FM Jasper-Birmingham, WZBQ Tuscaloosa ID (EB-GA) [Note: this logging messed up in my word processor for Issue 18, and I didn't catch it before I read it in in DX News. This might be called a rerun?-WRH]
- 1170 KSTI IA DAVENPORT 2/1 all night with AORHWXLP-FM 96.9 Moline, IL; ID:
 KSTI, The Quad Cities' Home of Rock & Roll; no ment of FM!,
 however, sounded like the tail end of the FM ID snuck thru after
 the AM ID; frequent 97% ments; fair+good (DS-WI)
- 1290 KOIL NE OMAHA 12/31 0101 up from the din with Rock, Roll & Remember;
 - WQIN PA LYKENS 1/28 0655 fair→good with ada for the Pottsville Republican, and a gift shop in Millersburg (LMc-NY)
- 1310 WDOD TN CHATTANOOGA 1/8 0001 good copy; fair signal (DJ-FL)
- 1350 WHWH NJ PRINCETON 1/14 0825 poor with ID, song Muscrat Love; under WOYK (LMc-NY)
- 1440 WNPV PA LANSDALE 1/28 0805 fair with AP Nx, contest promo, ID (LMc-NY)
- 1580 WEAM GA COLUMBUS 2/2 0003 just caught sign-off annot. Join us again tomorrow for another uplifting day of broadcasting; QRM from WAMJ/CBJ; fair (HF-MI)
- 1800 WKWF FL KEY WEST 2/2 0005-0130 with SNN Nx @ :00 followed by EZL mx; I believe this is SNN Stardust format#WBBE 1580 Georgetoun, KY (RJT-NC)

MIDDAY TO MIDNIGHT

- 530 CJFT ON FORT ERIE 1/24 2320 with NBC University Theater drama; ID: Friendship Radio 530, Fort Erie, your over-50 flagship stn; QRM from NB North Bay beacon; fair (HF-MI)
- 540 CJSB ON OTTAWA 1/31 2200-2358 with Country & Rock mix; IDs es:54 Rocks; meny ments of Ottawa; only IDs @ :00; in heavy QRM from XEWA/WWCS (RJT-NC)
- 560 KWTO MO SPRINGFIELD 2/4 1810-1815 fair with WIND nulled; C&W→sports report, 56 Country KWTO ennet (DS-WI)
- 620 WRJZ TN KNOXVILLE 12/30 Midnight sign-off noted in progress (HF-MI)
 TX BALCH SPRINGS 2/3 1826-1902 with REL mx format, DJ Bob Wilson
 gave sway 2 record albums to the listener calling from the
 furtheat distance...I WON!!; very good, no WFAN (ROT-NC)
 - KSKY TX BALCH SPRINGS 2/4 1914-1917 very good with contemporary REL mx; 1917 ennor Shannon Gray sez they're going off the mir to work

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(4)
           on their night transmitter; no sign of WFAN, either before or
           after KSKY killed their carrier (DS-WI)
 690 WVOK AL BIRMINGHAM - 1/10 1809 with nx, ID; fair under CAF (WPT-DC)
           GA ATLANTA - 1/20 1858 with talk show with Kathy Fishman (with
 750
     WSB
           replies by Larry Munson); AM 750 WSB Atlanta with frequent wx,
            depend on it; ID @ 1900+local nx; very good with no sign of
           Nicaragua (EB-MO)
 840 WKDI MD DENTON - 1/28 1505 with C&W song, USA Radio Network Nx (Terry
            Austin), wx report; fair (WPT-MD)
 850
     WYDE
           AL BIRMINGHAM - 1/10 1758 with GOS pgm, ment of Birmingham; XLNT
            (WPT-??)
 860 WDMG
           GA DOUGLAS - 2/1 2023 with ROK & ad for happenings @ Atlanta's
           Omni (BA-GA)
           KS PITTSBURG - 2/3 1738-1801 with CBS Nx @ :00; fair, in WLBG
           null, NO CJBC!; finally logged this one for KS #2; last heard in
           Hass in early '60s as KOAM (RJT-NC)
 870
     WQRX AL VALLEY HEAD - 2/4 1830 very good with full data sign-off, mentg
           10 kw & slogan: RX-870; no SSB; WWL nulled (DS-WI)
     WFKJ PA CASHTOWN - 1/28 1400 with Christian pgm (CCUSA), ID; XLNT
 890
            (WPT-??)
 960 WHAK MI ROGERS CITY - 12/27 1432 female with mix of C&W & POP mx; non-
           ID: AM 96; HBS spot; poor (HF-MI)
      WPCN PA MT POCONO - 1/24 1737 alone with All the Best in Oldies Mx
           slogan, song Strawberry Fields Forever (LMc-NY)
 980 CHEX ON PETERBOROUGH - 1/28 1733 with ads for Russell Toyote & Curry
           Tires: ID:)-80 CHEX: POP mx: poor, over/under CFPL (HF-MI)
1030 WUFL HI STERLING HEIGHTS - 12/27 1411 with REL programming; ex: WDRQ;
           XLNT (HF-MI)
      WJKZ? TN WHITE BLUFF - 2/1 2045-2120+ fair+very good with C&W; ex:WBDX,
           definitely new CLs, I think they said WJKZ, but not certain; many
           KZ Country slogans, also frequent NAshville-area ments: almost
            sounded too loud for 1 kw (DS-WI)
      KCTA TX CORPUS CHRISTI - 1/31 1900 with sign-off; no trace of good ol'
           WBZ; beautiful signal (BA-GA)
           NB MONCTON - 12/20 2245 with Late Wight Classics with Norris+CBC
1070 CBA
           Nx @ 2300; Inland & Marine wx 2304-2310 to BBD mx; fair over/under
           CHOK; QSL in 32 days (HF-MI)
1130 KWKH LA SHREVEPORT - 1/5 2304 fair copy, fair to weak signal (DJ-FL)
           FL DAYTONA BEACH - made it up for ID @ 2000, then+CBS Nx; 1st time
1150 WNDB
           for Daytona Beach since WROD-1340 back in NJ in the 60's (BA-GA)
      WJBO LA BATON ROUGE - 1/6 1843 fair signel strength, good copy
           (DJ-FL)
1180 KFHM TX SAN ANTONIO - 2/4 2200 very good with ID: KFHM, 10,000 watt Mega
           Stereo Stn; log sez 1 kw nites (GH-KS) [Yeah, but you know most
           stations don't kile to brag about cutting power at nite-WRH}
           UT SALT LAKE CITY - 12/30 2348 with ads for Wagstaff's, Lincoln
           Travel, & Western Institute of Psychiatry; call-in pgm; CBS Nx @
           Midnight; fair with QRM from WJJD/R. Taino (HF-MI)
1170 KV00
           OK TULSA - 2/1 1838 good leagl ID with C&W mx (BA-GA)
           TX DALLAS - 2/1 1815 with legal ID & power cut; way over WOWO. who
1180
     KLIF
            was very weak after! (BA-GA)
           PA HONTROSE - 1/24 1700 fair with sign-off (LMc-NY)
1250
     WPEL.
           DC WASHINGTON - 1/5 2342 with Larry King show; good copy, but
1260
     WWDC
           fading (DJ-FL)
     WNOO
           TN CHATTANOOGA - 2/4 1609 fair in WTJH null with Motown
           Oldies: WPBD-640, TC given as: It's 11 past the hour; Heart & Soul
           SMN feed; ads, WNOO (EB-GA)
           VA PETERSBURG - 1/24 1650 poor, briefly with AM 1290 WPVA non-ID
1290 WPVA
           (LMc-NY)
     WMOV
           WV RAVENSWOOD - 1/24 1625 with PSA, promo for sending in PSAs with
1360
           full address given; fair, mixing with WDRC (HF-MI)
1390 WLAN
           PA LANCASTER - 1/27 1655 with ID, Oldies; poor with WEOK (LMc-NY)
           OH CLEVELAND - 1/27 1700 with legal ID: Business Radio WHK.
1420
     WHK
           Cleveland (LMc-NY)
           PA CARBONDALE - 1/7 1700 fair, with dual, legal ID for
1440
     WCDL
           Carbondale/Honesdale (LMc-NY)
1470 WRGA GA ROME - 1/8 1834 fair signal strength, good copy (DJ-FL)
      WJDY MD SALISBURY - 1/6 1700 good with B/Sol mx, ID, CBS Nx (LMc-NY)
      WTTR MS WESTMINSTER - 1/27 1710 atop briefly with wx from the WTTR
           Weathercenter (LMc-NY)
1480 WHBC OH CANTON - 1/24 1554 fair with sports show promo, song Dancin' In
           the Moonlight (LMc-NY)
     WACHT MA WEST SPRINGFIELD - 1/26 1701 poor in jumble with ad for car
1490
           dealer in Springfield (LHc-NY)
1520 WSPZ GA DOUGLASVILLE - 2/4 1559 good over WZMG with GA Dept of Revenue
           PSA, WSPZ Douglasville ID+USA Network Nx; may have been on 500
           watt CH power @ 1800 (EB-GVA)
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KMPL MO SIKESTON - 2/1 2235-2300 fair+poor with MO vs KS BKB; 2258:poor KMPL Sikeston ID; also hrd 0635-0650+ running CBS Nightwatch; (no ID hrd; determined by calling stn afternoon of 2/2) (DS-WI) 1540 WWKH MI HARRISON - 12/26 1212 up from din with C&W mx; poor (HF-MI) 1550 WOKJ MS JACKSON - 1/28 with WOKJ Hillbilly Willie Show→C&W mx; You're in tune with the Big Rig, WOKJ at 1550 on the dial in Jackson, Miss ID+local nx; very good over mess (EB-GA) MS JACKSON - 2/4 2142 with C&W mx; annor said: WOKJ Super Country, temperature 29'; fair (GH-KS) 1580 WAHJ IN SOUTH BEND - 1/19 2050 with ad for Merrill Pharmacy; ID:WAMJ South Bend-Mishawaka; Michiana Tx [?-Ed.] Radio; MBS PM Nx @ 2100; promo for What's New in Medicine; SJR Talk Net before & after nx; CBJ QRM; U of Ill vs Northwestern BKB noted under CBJ @ 0407 [That musta been a re-play @ that hour-Ed.]; QSL received in 7 days; fair (HF-MI) 1600 WAAM MI ANN ARBOR - 1/30 1949 good with ad for an ANN Arbor shop, promo for BBD show on Radio 16 WAAM, ID Washtenaw County's Information Stn. WAAM Ann Arbor+Talknet (DS-WI) WPT-DC Willer Townshend//DXing at home//ICF-2010 WPT-MD William Townshend//DXing at office//Portavision-40 EB-GA Eric Bueneman//Woodstock, GA//DX-200, TM-152, SM-2 (2 reports) Eric Buenemen//St Louis, MO//DX-400 EB-MO Harold Frodge//Midland, MI//Icom R71A + 156' random wire LMc-NY Laurs McCusker//Ravena, NY//WROW Balloon Bill Aliseuskas//Douglasville, GA//Ford Caradio on a dirt road 1 mile from home Doug Smith//Madison, WI//new Superadio (got it for \$17 at a hamfest!) Gary Houdek//Munden, KS//Penasonic 9-bander GH-KS RJT-NC Robert Tiere//Hendersonville, NC// DJ-FL Dave Johnson//Gainesville, FL//Kenwood TS440S + wire antennas Domestic DX Nancy Hardy 2301 Pacific Avenue Digest - West Aberdeen, WA 98520 DX Catches in the Western U.S. and Canada, with 24-hr. ELT Deadlines are each Saturday! DX TEST 1590 WVNA AL TUSCUMBIA - 1/23 0034-0037 fair with Morse code IDs under KLLL & KVGB. AL #2. (JT-CO) MIDDAY TO MIDNIGHT 540 KNMX NM LAS VEGAS - 2/4 1946 s/off in English & Spanish. (JT-CO) DELTA - 2/4 2001 s/off, will s/on at 0800 with PSA 17.8 KNAK UT watts. (JT-CO) PUEBLO - 1/18 1959 s/off. (JT-CO) 690 KRMX CO SHOW LOW - 1/18 1915 "This is K-V-W-M, the voice of Show Low 970 KVWM AZ and the White Mountains." (JT-CO) MIDLAND - 2/1 2003 s/off with NA. (JT-CO) ТХ 1070 KWEL DILLON - 1/23 1859 s/off. (JT-CO) 1130 KHTH CO LITTLE ROCK - 1/23 2240 "Oldies with Peter Stewart," "1250, AR 1250 K**Z**OU Gold." (JT-CO) PAYSON - 1/25 2105 fair-poor with C&W. (JT-CO) 1420 KMOG AZ 1470 KSIR CO ESTES PARK - 1/18 1900 s/off. (JT-CO) MIDNIGHT TO MIDDAY

CALGARY - 1/26 0306 s/off with NA. (JT-CO) FORSYTH - 1/30 0800 s/on tone, then rooster crow. (JT-CO) SANTA FE - 1/27 0803 s/on "Good morning, this is K-V-S-F."(JT 1250 KIKC MT

1260 KVSF NM WY POWELL - 1/27 0759 s/on with NA. (JT-CO)

KPOW KS LAWRENCE - 1/30 0703 s/on with NA. (JT-CO) 1320 KLWN

DENVER - 1/30 0659 s/on "News you can use." (JT-CO) 1390 KDZR

REPORTER

JT-CO/Jeff Tynan, Parker, CO/Sony 20002 with JT-5 loop

Chuck Hutton

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

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

Just a little reminder: the new address (effective NOW) is 983 St. Charles Ave. #1, Atlanta GA 30306. The phone is now 404-892-6211 before 11 PM; if after 11 PM it better be awful important! And lastly, GMT is ELT minus 5 hours not 4 hours.

I'll get everything from the old address, however there will be a delay of a day or so.....

710 CUBA R. Rebelde 1/27 0545 simulcast w/670; good sigs, stronger than WHB which is 80 miles. (Brandenburg)
830 CUBA R. Taino 1/29 0325 EZL mx, mentioned Radio Taino several times in SS, very loud signal // 1160. (Brandenburg) 1400-1700 1/29 good reception at 1700 - checked back at 1700 UTC (noon) and it was still there! Considerably weaker, but still readable. What is more remarkable was that semi-local WNYC was on at the

same time. It was nulled by my phasing unit. 1700 1/30 even better than 1/29, very good copy at 12 noon. (Hakiel) Interesting.... I wonder what the mileage on this is. Gotta be

- some sort of midday DX record. PJB next, hi Chuck 981 COLOMBIA Zulio HJJV 2340 12/14 off freq echoed Radio Punto ID,
- fair. (Hakiel)
 985t PERU Lima OBX4J 0434 1/20 LA mx, SS talk, poor, no ID. (Hakiel)
 980 COSTA RICA TIRI R. Impacto 1/22 0435-0510 and later. Good IDs,
 - frequencies and call letters. Very professional, just like the SW, as I gather its parallel. No // that night. Romantic vocals and IDs at 0500. Fair reception, have heard since on two occasions. (Mellberg)
- 990 VENEZUELA YVRT Ĉaracas 0345 12/2 LA mx, R. Tropical ID. (Hakiel) 1020 PANAMA Panama 0320 1/13 LA vocals, R. Ritmo ID, fair, over Radio Margarita. (Hakiel)
- 1040 CUBA R. Taino 1/30 0408 // 830 and 1160 w/SS music and annets, very strong signal equal to WHO. (Brandenburg)
- 1160 CUBA R. Taino 1/27 0500 fair to good sigs, signoff annet "Tour Radio in Havana" by woman in EE. (Brandenburg)
- 1170 COLOMBIA Cartagena HJNW 0230 1/19 SS talk, R. CARACOL ID, fair. (Hakiel)
- 1220 COLOMBIA Barranquilla HJAT 0440 1/26 LA mx, R. Reloj ID, good, new catch. (Hakiel)
- 1255 UNID 0341 1/13 SS talk by man, nothing listed, poor. (Hakiel) VENEZUELA Maracaibo YVTI 0051 1/7 LA rhythms, Catatumbo
- Internacional ID, fair. (Hakiel)
 1415 UNID 1/29 just past 0000 an LA with newscast with items about
- 1415 UNID 1/29 just past 0000 an LA with newscast with items about Venezuela etc. Before I could ID the station, we had company and I had to quit listening. (DeLeurere)
- 1530 CUBA Moron CMIM 0022 1/22 LA tunes, R. Moron ID, fair. (Hakiel)
 1570 TURKS AND CAICOS ISLANDS 1/30 0349 good signal in XERF null,
 program by preacher with address in Georgia. (Brandenburg)

Todd Brandenburg - Silver Lake, KS G. Harley DeLeurere - Hendricks, WV George Hakiel - W. Islip, NY

DX440 ??? Racal 6790, R71A, LWs, loops, phasing unit R71A, 51J4, wedge loop, LW

Fritz Mellberg - Hawarden, IA

- 590 CUBA 12/20 0634.R. Reloj SS, OK copy // 1100. (Johnson-G) 590 UNID 12/19 0132 time sig ticks and SS talk. (Johnson-G) Gotta be
- Cuba Chuck 600 CUBA R. Rebelde 12/21 0013 // 620 with SS, both freqs strong.
- 600 CUBA R. Rebelde 12/21 0013 // 620 with SS, both freqs strong. (Johnson-V)
- 620 CUBA R. Rebelde 12/19 0130 rough copy somewhat weak. (J'son-G) 12/31 0013 // 600, both strong with SS until 0022 when 620 faded. (Johnson-V)
- NETHERLANDS ANTILLES 0429 12/24 Bonaire good copy, extremely strong sigs, // 11930 KHz. (Johnson-V)
- 830 CUBA R. Taino 12/18 0004 "Radio Taino, under the sunset" heard, strong sigs. (Johnson-G)
- 1100 CUBA 0634 12/20 SS, OK copy // 590. (Johnson-G)
- 1260 CUBA? R. Suarez? SS, mentions Cuba a lot 0442 1/6. (Johnson-V) 1310 CUBA R. Caribe 1/6 0453 La Fe, fading but fairly strong sigs at times. (Johnson-V)

- 1386 USSR Kaliningrad in with a rather good signal at 0330 on 2/1. Woman in RR and cl orchestra mx. (Dangerfield)
- DOMINICAN REPUBLIC 12/18 2317 HIAD tentative "Radio San Juan, San Juan de la Maguana"; I think this is what was said. Weak sigs. (Johnson-G)
- 1476 AUSTRIA Vienna fair signal on 2/1 from 0315 to after 0330. Didn't exactly pin the S meter! (Dangerfield)
- 1503 POLAND another just barely audible signal on 2/1 around 0330, language recognizable as Slavic. (Dangerfield)
- 1530 VATICAN heard on 2/1 0345 to 0400, quite clearly under WCKY and seemed to be // with 1611. (Dangerfield)
- 1570 TURKS AND CAICOS ISLANDS "Total Christian Radio", good copy, very strong 2328 1/6. (Johnson-V)
- 1611 VATICAN this one was almost like a semi-local for a while on 2/1, especially between 0315 and 0400. A first for me; I've heard only hets before. At 0320 a woman was speaking in what is scheduled as Romanian; religious mx and an announcement in II at 0345, then into what was supposed to be Russian. Seemed to be // to 1530 KHZ. WRTH lists this as 15 KW. (Dangerfield)

Ben Dangerfield Philadelphia, PA HQ180, ?????
Dave Johnson-V Gainesville, FL TS440S, LW's
Vero Beach, FL TS440S, LW's

And remember the NRC's best kept secret is "what is Ben Dangerfield's antenna for the HQ180??"

Simulcaster tops ratings

By Will Hughes

Staff writer

Simulcasting may have paid off for some local broadcasters, according to the latest Arbitron ratings

WROW-FM. (95.5) began simulcasting (carrying the same programs on more than one station) in September and that increase in listenership may have been enough to push the station to the top of the Capital Region heap among, listeners 12 years, and older, Monday through Sunday, 6 a.m. to midnight.

WROW-FM garnered a 10.7 rating, up 1.7 from last fall, to squeak past WPYX (106.5 FM), which was steady at 10.6 in Arbitron's fall book.

WROW-AM (590) lost audience, dropping to 2.2 from 3.3 last fall.

WGY (810 AM) logged the biggest drop, 8.9 from last fall's 14.1.

WGNA-FM (107.7), which simulcasts country and western music, picked up 1.7 points to move into fourth place. WGNA-FM had an 8 rating, up from 6.3 last [all].

Eighth-ranked WQBK (103.9 FM) picked up a point while its ninth-ranked sister station, WQBK-AM (1300), lost 1.2, reflecting the national trend of shrinking AM listenership.

WQBK-FM had a 4.8, up from 3.8 last fall: WQBK-AM had a 4.6, down from 5.8 last fall.

Arbitron, introducing its new diary to the Capital Region market, surveyed listeners Sept. 22 to Dec. 14.

Among the changes to the diary, according to Nan Myers, director of public relations for the rating service, was the introduction of a fourth listening location. "At work" was added to "at home," "in the car" and "other places" in the new diary.

Additionally, graphics were improved and subtle changes in language were made. For example, people are now asked what station they "heard" rather than "listen to."

Myers said Arbitron tested the new diary two years ago but said it is too early to gauge its impact.

"The tests indicated that we get a little better response, not in terms of quantity, but in quality." Here are the top 10 area stations, according to Arbitron:

according to Arbitron:

1) WROW-FM — 107, up from 8.5 in the summer and 9 last fall.

2) WPYX-FM — 106, down from 11.7 in the summer, steady from last fall.

3) WGY-AM — 89, down from 10.8 in the summer and 14.1 last fall.

4) WGNA-FM = 8, up from 5.8 in the sur

4) WGNA-FM — 8, up from 5.8 in the sur and 6.3 last fall. 5) WFLY-FM — 7.6, up from a 7.4 is summer and down from 8.6 last fall. 6) WKLFM — 6.6, up from 5.9 in summer and 5.8 last fall. 7) WGY-FM — 5, up from 4.9 in the sur and down from 6.1 last fall.

8) WQBK-FM — 4.8, up from 4.2 in summer and 3.8 last falt. 9) WQBK-AM — 4.6, down from 5.3 ir summer and 5.8 last falt. 10) WTRY-AM — 3.7, down from 5.5 ir summer and 7 last falt.

The Times Union

Daily Record
-via Paul Mount

Finances force radio station to pull the plug

RANDOLPH TWP. — Radio station WMHQ signs off for the last time today, succumbing to linancial strains.

"It simply was a high-cost opcration we couldn't make profitable," said Michael Gettings, vice president of Atlantic Morris Boandeasting Inc., which owns "MHQ. He declined to elaborate aboat the expenses incurred at the station.

WMHQ will cease operation at 530 p.m. by simply stopping transmission, Gettings said. Up to a dozen people had been employed by the station, but Gettings declined to say how many were still working and would have to be lad off today.

The station, purchased by Atlantic Morris in March 1987, broadcast live and satellite oldies programming at 1510 AM during the day and evening.

Although it maintained the

WMMQ will cease operation at 5:30 p.m. by simply stopping transmission. Up to a dozen people had been employed by the station.

oldies format, some variations were tried, with limited success, Gettings said. Attainte Morris owns other small stations that have been prosperous against radio giants, but this market was especially competitive.

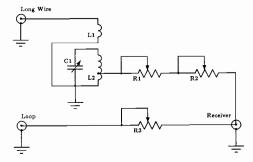
The company will turn over the license to the Federal Communications Commission and ask the commission to find another because Gettings said

Gettings declined to comment about other business plans, such as the future of the studios on Millbrook Avenue

- ALISSA SCHRAMM

LIL-1 ... Dallas Lankford - 903 Sherwood Drive - Ruston, LA 71270

The LIL-1 is a new circuit for combining a loop and inverted L antenna to generate a cardioid response pattern at medium frequencies, 540-1600 kHz. An ideal loop has two nulls, 180 degrees apart, and perpendicular to the plane of the loop. An inverted L antenna is essentially omnidirectional at medium frequencies. Theory predicts that if an ideal loop and an omnidirectional antenna which produce equal signal levels are combined 90 degrees out of phase, the resulting response pattern will be a cardioid. A cardioid is a heart shaped curve, with a flat bottom rather than a point. Mathematically, a cardioid response satisfies $V = V_{max}(1 + \cos \theta)$ where θ is the angle between the plane of the loop and the direction of an electromagnetic wave. In other words, in one direction of the plane of the loop there is a maximum response, in the oposite direction there is a null, and off the sides (perpendicular to the plane of the loop) there is somewhat reduced response.



The LIL-1 schematic is shown above. The circuit was constructed in an RF tight metal box, about 9" by 5" by 6" (W by H by D). UG-290/U female BNC connectors were used. R1 is a 200 ohm, 2 watt, linear potentiometer. R2 and R3 are 10K ohm, 1 watt, linear potentiometers. C1 is a straight line frequency air variable, about 15 - 375 pf. L1 and L2 were home made. L1 is 96 turns of #31 enameled copper wire close wound on an Amidon T-106-2 iron powder torroid core, tapped 6 turns from the bottom, with an 8 turn link at the top. C1 is driven by a Jackson Brothers dual ration 6:1 and 30:1 vernier ball drive, type 4511-DRF. The vernier drive and shaft are coupled with a Millen type 39002 flexible coupler.

It would probably be impossible to duplicate my prototype exactly, so let me suggest some alternate components. Provided the air variable capacitor is not too large, a Hammond 1590E diecast box, 7.3" by 4.7" by 3.2", should be large enough. BNC connectors are not required. PL-259 and SO-239 connectors could be used instead. It merely depends on what type of connectors you have available or want to use. R1, the 200 ohm potentiometer, was a junk box item and is difficult to obtain except from major electronics parts vendors, such as Newark. R2 and R3 were Radio Shack catalog # 271-715. C1 was a large air variable obtained from Fair Radio about 6 years ago. It is no longer available. The Fair Radio WS-88 catalog lists several air variables on page 28 which should be suitable. For example, catalog # 97400 is two sections, 10 - 275 and 18 -90. With both sections used the maximum capacitance is 365 pf. Or one 20 - 365 pf section of catalog # 5740 could be used. Do not use a cheap, flimsey air variable capacitor. There are many alternate possibilities for L1 and L2. Almost any adjustable inductor which can be adjusted to about 275 microhenrys can be used. Additional turns will have to be added at the bottom and top. Keep approximately the same turns ratios. The exact number is not critical. I recommend using #31 enameled wire because it is available at Radio Shack. If you have litz wire on hand, that would be fine. The Jackson Brothers dual vernier drive, Millen coupler, and Hammond box are available from Radiokit. Don't wince when you see the prices. Those three items will set you back about \$40. The total cost for parts should be under \$60.

My inverted L antenna consists of a 65 foot horizontal section, about 20 feet above the ground at one end, sloping down to about 10 feet off the ground at the other end, and about 15 feet of bare lead-in. I do not use coax lead-in. My loop is a home made, 2 foot square, balanced, amplified air core loop which includes a Jackson Brothers dual vernier drive. The loop signal levels are about equal to the inverted L signal levels. I have used LIL-1 with both R-390A's and

© February 14, 1989

HQ-180A's. It works equally well with either receiver. I do not know how LlL-1 would work with other antennas or other receivers. It may not work well with a loop which does not have a sturdy tuning capacitor and reduction tuning.

The theory of LIL-1 operation is as follows. The parallel LC tuned circuit L2-C1 and the loop tuned circuit are used to adjust the phase difference of the two signals to 90 degrees. The potentiometers are used to adjust the signal levels of the loop and long wire to equal levels.

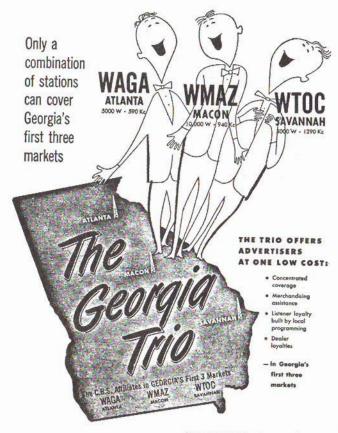
Actual LIL-1 operation consists of the following steps. R1 is set to minimum resistance and R2 is set to maximum resistance. This reduces the signal levels from the long wire to a low level. R3 is set to minimum resistance and a strong signal is tuned with the loop so that maximum signal strength is at about the center of the 30:1 reduction range. The Jackson Brothers dual speed vernier drive has about one turn of 30:1 reduction. As you turn the vernier drive shaft further in each direction it reverts to 6:1 reduction. You must tune past the maximum signal level about one half turn to put the maximum signal level at about the center of the 30:1 reduction range. Rotate the loop to find the normal loop null. Then rotate the loop 90 degrees for maximum normal loop reception. After the loop is adjusted, set R3 for maximum resistance to reduce the signal level of the loop to a low level, and set R2 to minimum resistanceto bring the signal from the long wire up to its normal level. Tune C1 so that maximum signal from the long wire is at about the center of its 30:1 tuning range. Set R2 to minimum resistance to bring the signal from the loop up to its normal level. Next detune the loop higher in frequency while detuning the long wire lower in frequency. You may have to try this several times. At some position of the tuning controls you should notice a sharp or sudden decrease in signal level. Carefully adjust one tuning control and then the other for any further decrease in signal level. Adjust R2 or R3 for further reduction in signal level. If no sharp reduction in signal level is found at any position of the tuning controls with the loop detuned high and the long wire detuned low, try detuning the loop lower in frequency and the long wire higher in frequency. Or try adjusting R2 or R3 while detuning the loop or long wire. For daytime use the setting of R2 or R3 is usually very critical so that R1 must be used as a fine adjustment. For nighttime use R1 is usually not needed because the setting of R2 or R3 is often not as critical for skywave signals.

If it sounds difficult to generate a cardioid response pattern using a loop and a long wire, that is because it is. The difficulty is not unique to LIL-1. I tried several loop and long wire phasing circuits, including variants of Ron Schatz's LSCA-1, and Paul Swain's series tuned circuit from "A Loop [And] Longwire Combined Antennae," but was disappointed with the results. LIL-1 is easier to use, and produces deeper nulls than other loop and long wire phasing circuits 1 have tried. However, it is possible that the other circuits were dependent on circuit layout, antennas, or receivers, and that I did not duplicate them to the degree necessary for best performance.

The main DX application of a cardioid response antenna is that it permits you to null interfering signals which are in the opposite direction from a desired signal. For example, WLS on 890 kHz is approximately due north of my location, while most interesting DX is to the south. When WLS is nulled with a conventional loop, already weak Central American signals are are further reduced. LIL-1 allows me to null WLS 40 db or more which is enough to give me a DX window to the south on 890 kHz. In the past while demonstrating LIL-1 I have gotten excellent reception of R. Fresnillo, XEYQ which also identifies as 'Q'. And this evening R. Nacional (Cuba?, Panama?, Chile?) has surfaced several times in the WLS null. I almost abandoned writing this to spend a few hours DXing with LIL-1. At my location other frequencies where LIL-1 has been used effectively include 650, 670, 700, 720, 750, 820, 830, 840, 850, 870, 1040, 1120, and 1200 kHz. One curious aspect of the DX produced by LIL-1 (or any similar cardioid response antenna) is that it frequently reminds me of strongly fading SW signals. A slow AGC release time often significantly improves intelligibility, and a synchronous detector sometimes further enhances reception quality.

A little known advantage of a cardioid null over a conventional loop null is that a cardioid null is much wider than a conventional loop null. For example, the angular width of an ideal conventional loop null which is at least 60 db deep is about 0.1 degree, while the 60 db angular width of a cardioid mull is about 7 degrees. For nulls at least 40 db deep the angular widths are about 1.1 degrees for a conventional loop and about 23 degrees for a cardioid response. Thus, a cardioid null is often more effective, especially on nighttime (skywave) signals.

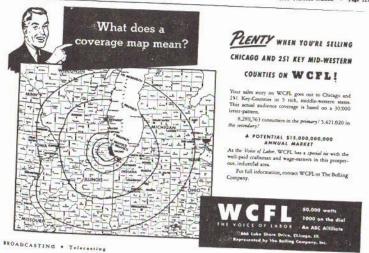
LlL-1 has some disadvantages. The difficulty of generating a cardioid response pattern has already been discussed above. This means that it is extremely difficult, and sometimes virtually impossible to generate a cardioid pattern on frequencies where many signals are present. Also, the LIL-1 cardioid pattern (and any cardioid pattern generated by similar methods with a tuned loop) is frequency dependent, especially for daytime (groundwave) signals. With a carrier nulled about 80 db sidebands are usually much stronger than they would be with a conventional loop. This means that a conventional loop often produces more effective nulls for daytime (groundwave) signals, not only on the primary frequency, but also on adjacent channels. Nulls with LlL-1, especially at night (for skywaves), generally are not stable for long periods of time. This means that you may need to readjust the controls frequently to maintain maximum null depth. Nevertheless, LIL-1 adds a new dimension to MW DXing by permitting me to log DX which would be impossible to hear with a conventional loop. The advantages far outweigh the disadvantages.



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BROADCASTING . Telecasting

1950 Yearbook Number * Page 123



1950 Yearbook Number . Page 129

Bringing back radio days for profit - and fun Binghamton Press & Sun Bulletin -via William Hale

By FRED WILLIAMS **Business Writer**

At Scott Phillips Sr.'s shop, an RCA Victor rises from the floor to about waist height, its walnut veneer gleaming. The dial of the late 1940s-era radio provides both "standard," or AM band selections, and short-wave bands marked for point of origin: Mexico City, Havana, Moscow, Boston, Philadelphia and Tekyo.

The customers at Phillips' busi-ness, For Your Listening Pleasure, are just as diverse.

"On any certain day, somebody from France might show up, or somebody from England, he

They're drawn to the Clinton Street shop by a collection of more than 300 antique and collectible radios - sleek, Bakelite table sets from the '40s and '50s, Depression-era "cathedral" radios housed in wood, and floorstanding consoles from the '20s.

It has been Phillips' business to restore old radios to their original condition, both inside and out, for the past three years. But it's been his hobby much longer.

"Twe been doing it since I was nine years old," says Phillips, 43.



A 1929 floor-standing Atwater Kent radio shows the skillfully carved grille and "tombstone shape common to the period.

"I couldn't tell you how many fuses I blew in my dad's house."

The hobby didn't turn into a ll-fledged business urtil about 1985. Before that, the chief business of Scott and Sue Phillips was Scott's TV, a repair and restora-tion shop for television sets that opened at 368 Clinton St. in 1972.

People would keep asking uswon't you please do a radio. Phillips says. "We'd kind of shy away from it. Then we started to realize that a lot of people want these repaired."

Bruce L. Kelly, director of the Antique Wireless Association based in Holcomb, N.Y., agrees.

Interest in restoring old radios or simply owning a restored radio — has grown greatly in the past several years, Kelly says. The first "meets," or combination flea markets and auctions sponsored by the association, drew about 100 antique radio enthusiasts to Canandaigua in the early 1970s. Now, Kelley says, the No vember event draws more than 1,000 people, and similar meetings have sprung up around the

"We have to start thinking about moving it — Canandaigua may not be able to hold the crowd any more," Kelley said.

In attendance are radio enthufiasts from Sweden to Japan, tinkerers who enjoy the challenge of getting a rusty, obsolete radio to work, and collectors who are enchanted by the graceful lines of a restored cabinet.

Phillips is what Kelly calls a die-hard: someone who restores both the cabinet and the electronic equipment, using authentic parts throughout. Phillips is also one of the few who pursues restoration as a full-time business.

Phillips takes pride in the thor oughness of the job.

"I could take some knobs off of one and put them on another to make it look pretty - we don't do that," he says.

A full restoration takes three weeks on average, Phillips said He and four workers refinish cab inets and replace worn electronic components inside.

Because vacuum tube amplification has been obsolete for NRC AM

about 25 years, some parts are very scarce, Phillips says. Extremely rare tubes sold by dealers can cost several hundred dol ars; other tubes just can't be found. "There are some people who collect only tubes," Phillips said. The store has a hoard of about 30,000 tubes, which, together with his tools and inventory of radios and parts, cost about \$65,000.

The scarcity of tubes is one factor in the price of restoration, which ranges from \$48 to \$225 for basic electronic repairs. A com-plete overhaul, including restoration of the cabinet and replacement of worn electronic parts, costs as much as \$795 for the largest radios. The business restores between six and 10 sets a week, Phillips said.

Many restored sets on sale at the shop don't come cheap either

— a 1945 Art Deco-style radio
housed in rare Catalin plastic costs \$960. Sets in abundant sup ply sell for as little as \$60, while the oldest and rarest sets cost more than \$1,000. Phillips buys radios in various states of disrepair from dealers, estate sales, lea markets and other sources.

Antique radios share space with modern televisions and vi deo cassette recorders in the Phil-lips' shop. About half the busi-ness is devoted to repairing modern televisions, half to restor ng old radios, Scott Phillips said. There's little question where his preference lies.

"There's nothing like getting an old radio. That Truetone was a basket case," he says, pointing to a set on a workbench.

Radio Log The most up-to-date listing of domestic MW stations available. anywhere! 200 pages. three-hole punched. \$12.95 each, to U. S. NRC members: \$13,95 Canadian NRC

Members:

others

write.

Send orders

to Pub Cen-

ter

Need to renew? Expired? The mailing label will tell you.



Scott Phillips Sr. with shelves of restored radios for sale at his Clinton Street store. The top shelf holds post-war radios in the Art Deco style; the bottom shelf holds Depression-era models in wooden cabinets.

By Jonathan Rowe

Stoff signer of The Christian Science Monto

NEW YORK =

I BROWN is a producer, and you are his stage. To portray a Paris street, television might need to fly a crew across the Atlantic. Hiram Brown payement, snatches of patter from a

"You dress the actors. You create the scenery," he says, like a man who has spent a lifetime trying to get people to see the obvious

Mr. Brown has been called "the Norman Lear of radio." He produced the radio shows that had a whole generation huddled around Sanctum," "The Shadow," and others. Back then, radio listings were as they work even better than on TV). copious as TV listings are today. So pictures with their voices, that fans would come just to hear them read.

Now, as Brown sits in his 26th Street studios in New York, brisk

and dapper in a plaid sport coat, it's in one word: television. In a video tempting to think him a relic, like age, in which seeing is taken to be the Orson Welles tapes that have perceiving, aural atmospherics is been playing at the Museum of about the only role radio has left. Broadcasting uptown.

"People no longer listen to ra-Except he isn't. And not just be- dio," says Helen Dudman, the cause he's worked successfully in owner and manager of AM and FM TV and film. Almost unnoticed, a stations in Ellsworth, Maine. "It's radio revival has been taking shape just there as background."

on the nation's airwaves. Brown's Yet it wasn't simply that people "CBS Mystery Theater" ran as long suddenly lost interest in radio when as TV's "MASH"; and, though the television burst upon the scene. At network took it off the air in 1983, it the same time, ad agencies and nets back through another distributor. works lost interest in providing it. A Garrison Keillor-type variety There wasn't an independent radio show called "End of the Road" industry determined to meet the TV debuted - of all places - on AM challenge. The new TV industry was radio nationwide this fall. And old- the radio industry. Owners simply time drama shows are arising coast took their radio profits and plowed to coast, on stations ranging from them into TV. "The agencies and WEEI-AM in Boston to KNX-AM in the networks lay down and let TV Los Angeles. Even New England roll over radio," says Alan Sloane, a art deco sets: "Dick Tracy," "Inner Telephone has transposed its affect- radio writer who went on to win ing mini-drama ads to radio (where television Emmys.

The reason, says Mr. Sloane, is Not that Top-40 playlists and that television was a "more potent skilled were the actors at conjuring prime-time sitcoms are going to dis-selling medium." He recalls the Pall appear any time soon. Brown knows Mall cigarette ads on the radio and that. Still, he speaks cautiously of a TV versions of a show he wrote "renaissance of the spoken word." called "The Indictment." "When it To people like Brown, the stakes went to TV, you saw a character are high. "It's not just that radio - a take a deep drag, and a look of satisproduct of the imagination - is suf- faction come over his face."

fering," says Sam Dann, a writer who has worked often for Brown. THE ad money prompted a stampede of radio talent to "It's that the imagination in general is suffering."

TV - Jack Benny, Arthur
Radio is the lost continent of Godfrey, and others. Hi Brown TV - Jack Benny, Arthur American media. It is present every- went, too, with a TV version of "Inwhere, but noticed hardly at all. ner Sanctum." Brown isn't totally There are twice as many radios as down on TV. He has kind words, for people in the US. Americans listen example, for "L.A. Law." But he while they shower, drive, cook, even found he just couldn't do as much while they jog. Yet while local news- with pictures as he could with words papers list television schedules in and sounds. His trademark on "Inminute detail, radio gets a tiny sta- ner Sanctum," for example, was a tion roster. There's virtually no way creaking door. "Consider what that to find out what's on. Commentary does in your mind," he says. "I about radio is rare compared to TV. couldn't create that kind of ambi-For the most part, this invisibility ence in TV.

So while he produced TV shows vast expanse of canned and neu- and documentary films, Brown kept tered rock, with occasional islands knocking on doors. Finally, in 1974, of public radio, news, or talk. Many a man named Sam Cooke Diggs at stations are turning to packaged CBS embraced a Brown proposal. ("Had there been no Sam Diggs," Sloane says, "radio would have discarols," laments Peggy Charren of appeared.") The result was "CBS Mystery Theater," a brazenly ambitious undertaking involving one-The prevailing view explains this hour dramas seven nights a week.

A crystal set got Brown started

ADIO careers frequently take strange and fortuitous turns. This was especially true in the early days. Hi Brown was a high school actor in New York who became enthralled with radio through his crystal set. He wangled a job at a station by telling "a bagful of lies," he recalled recently. The result was a poetry show called "Hi Brow

Later he heard about a new network called NBC, where he ended up reading fairy tales in a Jewish dialect. After the second show, he got a call from a "domineering" Bronx woman named Gertrude Berg, who said she had written some scripts. Soon thereafter Brown became Jake, Molly's husband, on "The Rise of Molly Goldberg." Berg dumped him when the show became a success, a move Brown, now counts as a blessing because it propelled him into production. The radio business - like the medium itself - could be intimate and familial in those days.

"In 45 years working with Hi Brown, I never had a contract," says Alan Sloane, one of Brown's writers. "I never had to sign a piece of paper."

Brown has few kind words for modern station owners, distothe people at National Public Radio, whom he thinks neglect radio drama. He speaks wistfully of England, where under the BBC, such drama has thrived. "I'm doing my own public radio," he says, of the way he pours his own money into drama projects. His latest: a series on the daily trials of older Americans, called "We, the Living," for which he is seeking an outlet. The University of Georgia has named a new audio center after Brown, which he hopes to use in his production work.
"I hate the phrase, 'Golden Age of Radio,' " Brown says, "I

want the 'Golden Age of Radio' to be 1990."



MYSTERY THEATER: Brown (left) directing an episode for CBS.

Writing to people's hearts

is deserved. The radio dial today is a

soundtracks from satellites.

after a holiday drive.

couldn't even get good Christmas

Action for Children's Television,

DEOPLE like Hi Brown are not surprised that radio drama still works. If television makes the world smaller, they say, radio makes it larger - "as limitless, as free of boundaries and constraints, as the human mind," Jonathan Yardley wrotein the Washington Post.

Tony Schwartz, the media guru and ad man, points out that radio evokes our own thoughts. "The content of radio is us," he says, which explains the intimate, soothing quality of radio voices on dark highways late at night,

People who grew up with shows like "Inner Sanctum," who knew baseball greats Babe Ruth and Dizzy Dean from a broadcaster's voice, recall these with a warmth that TV rarely arouses. "I felt I was writing directly to peoples' hearts," says
Alan Sloane of his radio work. "I miss that in television. I really

Sam Dann points out that television's classic period - shows like "Studio One" and "Playhouse 90" - in the early '50s was when the medium was closest to radio. Schwartz notes that, even today, television is "predominately sound." Schwartz listens to TV news on a radio monitor in his car, and says the weather map is really the only information he misses. - J. R.

Radio: Media's Lost Continent

Producer Hiram Brown keeps aiming for a radio revival



HI BROWN: Could broadcast 500 hours



THE CHRISTIAN SCIENCE MONITOR

Monday, January 23, 1989

Orson Welles (below) during a 1938 broadcast of 'American School of the Air.



ence of 5 million. Ray Barnett, who not a position I took." was station manager at KNX-AM in video-centric Los Angeles, calls "Mystery Theater" "without doubt one of the most consistently successful vehicles we ran on the air. It doubled, tripled, or quadrupled the audience [for programming] before and after it.

Even more significant, perhaps, was who this audience was. CBS had expected a nostalgia draw. "What we weren't prepared for was the amount of young people," says Dick Brescia, who was with CBS Radio at the time and is now handling "Mystery 'Theater' independently.

Of course, "Mystery Theater" was not the only sign of a radio revival. Garrison Keillor was updating the old variety format on public radio's "Prairie Home Companion." Offbeat voices continued to appear in the gooks and crannies of local radio, such as "The Bama Hour," a sort of bluesy, inner-city "Prairie Home Companion" on WPFW in Washington, D.C.

In New York, public station WNYC started a kids program with the inspired title "Small Things Considered" (later syndicated as "Kids America"). "A lot of grownups were addicted who didn't have kids," says Mary Perot Nichols,

profit. Accountancy was on the rise censes for free.) at CBS, however. When Diggs retired, "Mystery Theater" lost its perimental medium, But the ex- they are most free to experiment. protector. The decision was to "take pense of buying a station today can- Another advantage of radio is its

At its peak, the show appeared on "Mystery Theater" and put it into music formats to deliver very spe-360 stations and had a weekly audi-sports," Brescia recalls. "That was cific audiences to advertisers.

> battle. And not just because TV habits are not easily broken.

passion. They are investors, who tends to be secondary. hire consultants to tell them what to WRKO-AM in Boston. "These people are into making money. They of that, do the kind of programming don't try new talent."

ing," as Sam Dann puts it. "It's a radio on Saturday morning

serves, young executives at ad agencies - who decide where ad dollars flow - grew up on TV and often regard radio as a foreign country.

view of many, was the lifting of fed- are willing to try something new. eral guidelines under the Reagan Administration. In theory, deregulation of broadcasting would bring a AM. The show stars Tom Bodette, a flowering of free-market diversity. In practice, it has often done the lives in Homer, Alaska, in the Garriopposite. Especially harmful has son Keillor role, John Quick, station been the rampant speculation in president of WNYC. Only 26 sta- broadcast licenses, something Washtions picked up the show, however, ington no longer restrains. One the past several years has gotten partly because Arbitron ratings L.A. station sold for \$18.5 million in don't include listeners under age 12. 1983, then sold again for \$79 mil-"CBS Mystery Theater" didn't lion in June, 1988. (The federal govmake big dollars, but it did return a ernment originally bestows such li-

Radio should be a low-cost, exthe money we were investing [in cels that, Instead, owners tailor economy, "I could be on the air for of fantasy,

"There's a lot of money at stake," It was, however, a reminder that says Mike Ewing, station manager at Hi Brown and others face an uphill KRLD in Dallas. Owners are "more

"Radio stations have become commodities," says Sam Smith, a "HE people buying major sta-tions today generally are not recently sold his family's radio stapeople for whom radio is a tion in Philadelphia. "Broadcasting

At the same time, however, reput on the air. "The bean counters vival advocates see a lot of things in have taken over," says Gene Burns, their favor. For one thing, cable has the erudite talk-show host on disrupted the cozy world of network TV. "Radio should take advantage it did years ago," says Douglas They are "people who don't care O'Brien of WNYC. For example, "I anything about what you are do- think TV is vulnerable to children's

AM radio may well lead the way. At the same time, Brown ob- In recent decades, station owners shifted their money into FM, leaving AM to decline. Now, FM has fallen into tight commercial formats, a victim of its own success, while AM Making matters worse, in the stations, hungry for young listeners,

This is why Brescia developed "End of the Road" especially for writer and NPR commentator who manager of WCCO in Minneapolis -Keillor's old base - says "nothing in near the response

Most radio stations make their money during morning and afternoon "drive time," moreover, So a story. That's the whole thing." the evening hours - television's "prime time" - are precisely when

500 hours for what one episode of 'Miami Vice' costs." says Brown. "This is what is so incongruous." (While dirt cheap compared to television, however, radio drama is relacomfortable in a very tight format." tively expensive compared to rock music formats.)

But perhaps the most hopeful sign has been the enthusiasm of young people. They defy the common assumption that products of the video age will reject anything without a picture.

T'S not just the response to shows like "Mystery Theater," or "Kids America." The Museum of Broadcasting, for example, has a Saturday program in which children actually produce a radio mystery. It's been sold out since October. After a recent class, one girl said, "You could picture it in your own mind, and you didn't have to see it like everyone else sees it."

Robert M. Batscha, museum president, says kids come back to the museum to listen to tapes of old shows. "Once they have exposure," he says, "it is as fascinating as any form of amusement." Sam Dann talks about students in his writing classes at New York University. "Film students who never heard of radio sit there and are enthralled."

This is why Hi Brown isn't giving "The little boy or little girl climbs up on Mommy or Daddy's lap and says, "Tell me a story," Brown says, "Not show me a story. Not tell me a story in color. Or stereo, Tell me

He cites a letter from the mother of a young "Mystery Theater" fan. "Thank you," this mother wrote, "for giving my child back the world

Graveyard Achievements

William Hale

2160 Farm to Market Road Johnson City, NY 13790

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

About three or four years ago, John $\forall ilkins$ sent me his entire Graveyard log, which then appeared in \underline{DX} News.

"Before it's too late", Roy Willer has sent $\underline{\text{his}}$ extensive loggings on the elusive GY frequencies.

To ensure this feat does not go unnoticed, I am proud to present these listings for your perusement and enjoyment. Truly a marvelous achievement of a man who, obviously, enjoys the hobby of DXing.

Loggings from Bellevue are in the "Prior to Jan 1, 1960" category, while those from Marysville are in the "Jan 1, 1960 to Present" era.

Those listings in **bold** are <u>new records</u>, Λ "t" indicates a <u>tie</u> for the record. Roy already held many records, which are not annotated.

Anyone wishing to submit their lists, please do so. But be sure to indicate which "era" they fall into. And please put them into alphabetical order by states. That saves me mucho time.

1230		ROY MILLAR	₹	KDLK		Del Rio	1711	KRDO	co	Colorado S	
OTH:		levue, WA		KEUZ		Houston	1896				1070
KKIF KFPU		Sitka	850	KOSA	***	Odessa	1522 702	KSLV		Monte Vist	
KSUB		Ft Smith Bisbee	1673	KOAL		Murray Price	808	UEOU		a.	1075
KGPH	AZ.	Flagstaff	1297 1020	KOTY	[-1 A	Everett	33	WFOY	FL	St Augusti	
KAAA		Kingman	958	KLAN	WA	Renton	10				2522
KEAN		Kingman	958	KKRE		Renton	10	WLAG WBNI.	6A	La Grange	2199
KRIZ			116t	ELYK		Spokane	224	EAR!	-	Hacon	2288
KERO	CA	Bakersfield		KSPO		Spokane	224	MANT	ΙD	Coeur d'Al	
KUTC	v.	Barstov	920	KREV		Sunnyside	136	KJRL		Pocatello	259 573
KIBS		Bishop	735	WNOR	VA	Norfolk	2473	KVIK		Pocatello	573
KXO		El Centro	1083	CFCW		Camrose	563	KVEI		Veiser	347
KDAC		Ft Bragg	569	CKDH		Dauphin	1032	MEDC	т.	Chicago	1748
KGFJ		Los Angeles		CFRG	5K			KAKE		Vichite	1441
KPRL		Paso Robles		CHCO		Havana	2818	WFTM		Maysville	2041
KRDG		Redding	485	JOHR		Soporro	4717	KANE		New Iberia	
KWG		Stockton	669					WCEM		Cambridge	2420
KRAI	co	Craig	862	1230	kHz	ROY MILLA	R	KXLW		Clayton (E	
KEXO		Grand Junct	tion	QTH:	Mar	ysville, WA					1729
			909	KGEE		Bakerafiel	d 854	KBAY	HT	Billings	665
WEAR	FL	Pensacola	2227	KLAV	NV	Las Vegas	871	KBLL		Helena	491
WBIA	GA	Augusta	2322	KCBK		Reno	555	KXLJ		Helena	491
KBAR	ID	Burley	544	KRDR	OR	Gresham	138	KELK	WV	Elko	570
KBIO		Burley	544	KDOV		Talent	361	KVBC	WH	Farwington	1049
KORT		Grangeville	276	KTDO		Toledo	218	KCOV	OR	Corvallis	219
KRIK		Rexburg	567	KHOR	UΤ	Murray	697	KFLY		Corvallis	219
WHICO		Spar ta	1772	KWYZ	WA	Everett	5	(112)		Hedford (E	B\$)
WHIR		Danville	2020	KRSS		Spokane	223				363
E LIC		Honroe	1911	KVOC		Casper	838	KKID		Pendleton	225
ELVT		Lebanon	1658	CKOR	BC	Castlegar	248	KWRC		Pendleton	225
KANA	MT	Anaconda	455	CKTK		Kitimat	531	KPRB		Redwond	237
KBMN		Bozeman	545	CJNL		Merritt	194	KSGA		Redmond	237
EXLO		Levistown	604					KRXI.		Roseburg	306
KLCB		Libby	319		kHz	ROY MILLA	Ŕ	WBIR	TN	Knoxville	2139
KIYI		She1by	488	QTH:		levue, WA		KVLF		Alpine	1559
KHAS		Hastings	1281	WOWL.		Florence	2007	KTAJ		Jasper	1901
KALG		Almagordo	1135	KBYR		Anchorage	1453	KOCA		Kilgore	1812
WNIA	NY	Cheektowaga		KWJB	AZ	Globe	1154	KILE	WA	El leneburg	97
KELY	MU	Ely	2145 685	EOLD		Yuma	1106	KGY		Olympia	51
	NV			KPLY	~	Yuma	1106	ELO0		Yakima (EBS) 110
KLAS		Las Vegas Reno	877 562	MPL.I		Crescent C		KFBC	WY	Cheyenne	973
KVRI		Reno		KRDU		D4	414	KASL		Mevcastle	907
KIAL	OP	Antoria	562 123	KHUM		Dinube Eureka	774	KTHE		Thermopoli	s 729
EVAS	UK	Astoria	123	KEBY			480	CKL	BC	Melson	776
KRMS		Burns	319	KPPC		Montarey Pasadena	759 955	CJAV		Port Alber	ni
KOOS		Coos Bay	303	KRKS		Ridgecrest					162
KOIK		Lakeview	303 391	KROY		Sacramento	624	CFPR		Prince Rup	ert
KYJC		Medford	363	KRNO		San Bernar					581
KGOE		Oragon City				Deliger.	969				
KOD4.		The Dalles	148	KSON		San Diego	1064				
KSII	TZ	Corpus Chri		KSUA		Santa Mari					

Susanville 503

KSUE

1941

1240	kH2	ROY MILLA	R	KHEL.		Venstchee	101	WEDT	T.11		
		sville, WA		KVNV		Venatchee	101	WKPT WGAP	IN	Kingsport Maryville	2116
KNRY		Hon terey	752	KOWB	WY	Laramie	927	KRUM	TT	Ballinger	2142 1593
KDGO		Durango	1026	KWOR		Worland	780	KBYG	•-	Big Spring	
KMCL	ID	McCall	348	CKDA	BC		74	KVOP		Plainview	1423
KFLI		Mountain Ho	ome	CJOB		Winnipeg	1158	KCSU	UT	Provo	735
			439	CKOM	SK	Saskatoon	766	KIXX		Provo	735
KLTZ		Glasgow	729		BCN.	weyburn Mexicali	855	KFDR	W۸	Grand Coul	ee
KTIX	OR	Pendleton	220	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	DON	Mexicali	1093				156
KQEN KVRS	₩.	Roseburg	306	1340	kHz	ROY MILLA	R	KEDO		Longview	104
FAKS	•I	Rock Spring (EBS)	ge 766	QTH:		ysville		KALK		Longview	104
CFVR	RC:	Abbottafor		KATA		Arcata	467	KTNT		Tacosa	32
CFEK		Fernie	360	KAOR		Oroville	553	KYAK		Yakima	110
CKOO		Овоуоов	166	KWSL	CO	Grand Jct	904	KODI	wy		673
CFNI		Port Hardy	317	KSKI	ID	Hailey	466	CESW	35	Swift Curr	ent 690
CKWL		Williams La		KAIN		Nampa	391				690
			324	KSGR		Nampa	391	1400	kHz	ROY MILLA	P
				KYLT		Missoula	389	QTH:		ysville, WA	
1340	<u>kHz</u>	ROY MILLA	R	KNDE		Aztec	1037	KXIV		Phoenix	1116
QTH:		le <u>vue</u> , WA		KBET		Reno	555	KVOY		Yusa	1106
KCL.S	ΑZ	Flagstaff	1020	KBBR WKGN		North Bend	297	KPAT	CA	Berkeley	667
KRUX		Glendale	1116	KDUB	TN	Knoxville	2138	KOMS		Redding	485
KNOG		Noga les	1277	KPDN	1.	Lubbock Pampa	1439	KSLY		San Luis O	
KIBH		Seward	1402	KLKI	W▲	Anacortes	1375				855
KWFC	AR	Hot Springs		KOTY	4 11	Kennewick	79 173	KHOE		Truckee	581
			1774	KUUU		Wena tchee	173 99	KFTH	CO	FT Morgan	1053
KE IL	CA	Arcata	473	CIBO	AR	Brooks	518	KBZZ		La Junta	1161
KHAK		Freeno	761	CBRY		Alert Bay	298	WEOA		Evansville	1884
KAVL		Lancaster	921	CHNL2		Ashcroft	226	UFPR		Harmond	2080
KSFE		Needles	968	CFKC		Creston	208	KAHL.		Marshall	1291
KMOR KCMJ		Oroville	560	CKCF		Grand Forks		KFRU		Columbia	1634
KCHJ		Palm Spring	9 98	CBUF		Ocean Falls		KDRG	MT	Deer Lodge	452
KATY		Sen Luie O		CKCR		Revelstoke	304	KARR		Great Falls	
WWII		San Luis O	855	CIVH		Vanderhoof	459	KJJR	-	Whitefish	381
KIST		Santa Barba						KBGG	UK	Cave Junct	
		Danie Darb	919	1400	k#z	ROY MILLA	3	KIVR		Cave Junct	380
KHUB		Watsonville		QTH:	Bel I	levue, WA		FIAK		Cave Junct	
KOMY		Watsonville		WVCQ			5	-			380
KOMY KDEN	CO	Watsonville Denver	e 739			Kodiak AFR	5 1 44 2	KNIND		Cottage Gr	OVe
KDEN	C0	Denver	e 739 1023	KSEV	AK	Kodiak AFR					274
KDEN Kmyr	CO	Denver Denver	e 739 1023 1023	KSEV KCLF	AK	Kodiak AFR	1442	KJDY	SC	John Day	274 272
KDEN	C0	Denver	e 739 1023 1023	KSEW KCLF KONI	AK	Kodiak AFR	1442 850	KJDY WCOS		John Day Columbia	274 272 2354
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KDEN KMYR KGLN WROD		Denver Denver Glenwood S Daytona Be	e 739 1023 1023 pgs 936 ach 2572	KSEW KCLF KOWI KTUC KYMA KRE	AZ	Kodiak AFRS Sitka Clifton Phoenix Tucson Yuma Berkeley	1442 850 1217 1116 1222 1106 667	KJDY WCOS WLSB KUNO	TN	John Day Columbia Copperhill Corpus Chr	274 272 2354 2151 isti 1941
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KDEN KMYR KGLN WROD		Denver Denver Glanwood S Daytona Be- Palm Beach Decatur	e 739 1023 1023 P95 936 ach 2572 2741 1723	KSEW KCLF KOWI KTUC KYMA KRE KCRE	AZ	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci	1442 850 1217 1116 1222 1106 667 1ty 414	KJDY WCOS WLSB KUNO	TN	John Day Columbia Copperhill Corpus Chr. Pecos Stamford	274 272 2354 2151 isti 1941 1552
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KDEN KMYR KGLW WROD WWPG WSOY KVOX	FL IL MN	Denver Denver Glenwood Se Daytona Be Palm Beach Decatur Moorehead Helena	e 739 1023 1023 P95 936 ach 2572 2741 1723	KSEW KCLF KOWI KTUC KYMA KRE KCRE	AZ	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485	KJDY WCOS WLSB KUNO KIUN EDUT KTEM	TN TX	John Day Columbia Copperhill Corpus Chr. Pecos Stamford	274 272 2354 2151 isti 1941 1552 1558 1751
WROD WWPG WSOY KVOX KCAP	FL IL MN	Denver Denver Glenwood S Daytona Beach Palm Beach Decatur Moorehead Helena Kalispell	e 739 1023 1023 P95 936 ach 2572 2741 1723 1206 491 380	KSEW KCLF KOWI KTUC KYMA KRE KCRE KREO KSDA KCOY	AZ	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Senta Haria	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 880	KJDY WCOS WLSB KUNO KIUN EDUT KTEM	TN TX	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple	274 272 2354 2151 isti 1941 1552 1558 1751
WROD WWPG WSOY KVOX KCAP KGEZ	FL IL MN	Denver Denver Glenwood S Daytona Be- Palm Beach Decatur Moorehead Helena Kalispell Livingston	e 739 1023 1023 P95 936 ach 2572 2741 1723 1206 491	KSEW KCLF KOWI KTUC KYMA KRE KCRE KREO KSDA KCUY KSPA	AZ	Sitka Clifton Phoenix Tuma Berkeley Crescent Ci Indio Redding Senta Haris Santa Pauls	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 880 931	KJDY WCOS WLSB KUNO KIUN EDUT KTEM WHLF	TN TX	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto	274 272 2354 2151 isti 1941 1552 1558 1751 on 2346
KDEN KMYR KGLW WROD WWPG WSOY KVOX KCAP KGEZ KPRK	FL IL MN	Denver Denver Glenwood S Daytona Beach Palm Beach Decatur Moorehead Helena Kalispell	e 739 1023 1023 P98 936 ach 2572 2741 1723 1206 491 380 595	KSEW KCLF KOWI KTUC KYMA KRE KCRE KREO KSDA KCOY	AZ	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Senta Maria Santa Paula Ukiah	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 1 880 1 931 586	KJDY WCOS WLSB KUNO KIUN EDUT KTEM WHLF	TN TX	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale	274 272 2354 2151 isti 1941 1552 1558 1751 on 2346 139
KDEN KMYR KGLN WROD WSOY KVOX KCAP KGEZ KATL KRJF KBTK	FL IL MN	Denver Denver Glenwood S Daytona Be- Palm Beach Decatur Moorehead Helena Kalispell Livingston Hiles City	e 739 1023 1023 P98 936 ach 2572 2741 1723 1206 491 380 595	KSEW KCLF KOMI KTUC KYMA KRE KCRE KREO KSDA KCDY KSPA KUKI	AZ CA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Haris Santa Paula Ukiah Visalia	1442 850 1217 1116 1222 1106 667 144 1101 485 880 931 586 794	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ	TN TX	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello	274 272 2354 2354 2351 151 181 1941 1552 1558 1751 2346 139 163
KDEN KMYR KGLN WROD WSOY KVOX KCAP KGEZ KPRK KATF KBTK KQTE	FL IL MN MT	Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Biles City Missoula	e 739 1023 1023 P98 936 ach 2572 2741 1723 1206 491 380 595 777	KSEV KCLF KOMI KTUC KYMA KRE KCRE KREO KSDA KCOY KSPA KONG	AZ CA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Senta Maria Santa Paula Ukiah	1442 850 1217 1116 667 1ty 414 1101 485 1 880 1 931 586 794 1070	KJDY WCOS WLSB KUNO KIUN KTEM WHLF KLCK ERSC EITZ EITZ EPMA	TN TX	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Tacoma	274 272 2354 2151 isti 1941 1552 1558 1751 on 2346 139 163 21 32 32
KDEN KMYR KGLW WROD WSOY KVOX KCAP KGEZ KPRK KATL KBTK KBTK KQTE KSID	FL IL MN MT	Denver Denver Denver Glenwood S Glenwood S Daytona Beach Pealm Beach Decatur Moorehead Helena Kalispell Livingston Hiles City Missoula Missoula Sidney	e 739 1023 1023 936 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056	KSEW KCLF KOMI KTUC KYMC KRE KCRE KREO KSDA KCDY KSPA KUNI KONG KRLW	AZ CA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Haria Santa Paula Ukiah Visalia Canon City	1442 850 1217 1116 1222 1106 667 144 1101 485 1 880 1 586 794 1070 1161	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ EPMA WATW	TN TX VA WA	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Tacoma Ashland	274 272 2354 2151 deti 1941 1552 1538 1751 on 2346 139 163 21 32 32 32
KDEN KMYR KGLW WROD WSOY KVOX KCAP KGEZ KPRK KATL KRJF KBTK KQTE KSID KORK	FL IL MN MT	Denver Denver Denver Glenwood Statement Statement Decatur Moorehead Helena Kalispell Livingston Hiles City Missoula Missoula Sidney Las Vegas	e 739 1023 1023 998 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877	KSEW KCLF KOWI KTWC KYMC KCRE KREO KSDA KCOY KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KSPA KSPA KSPA KSPA KSPA KSPA KSPA	AZ CA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Harie Santa Paula Ukiah Visalia Canon City La Junta	1442 850 1217 1116 1222 1106 667 144 1101 485 1 880 1 586 794 1070 1161	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EPMA WATW KATI	TN TX VA WA	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Tacoma Ashland Casper	274 272 2354 2151 isti 1941 1552 1558 1751 2346 139 163 21 32 32 1480 840
KDEN KHYR KGLW WROD WSOY KVOX KCAP KGEZ KPRK KATL KBTK KOTE ESID KORK KATO	FL IL MN MT	Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Biles City Missoula Sidney Las Vegas Reno	e 739 1023 1023 P98 936 ach 2572 2741 1723 1206 491 380 595 777 390 390 1056 877 562	KSEW KCLF KOWI KTWC KYMC KCRE KREO KSDA KCOY KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KUKI KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KONG KSPA KSPA KSPA KSPA KSPA KSPA KSPA KSPA	AZ CA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Harie Santa Paula Ukiah Visalia Canon City La Junta	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 1 880 1 931 1 586 794 1070 1161	KJDY WCOS WLSB KUNO KIUN KTUN WHLF KLCK EITZ EITZ EPHA WATU KATU CFLD	TN TX VA WA	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Tacoma Ashland Casper Burns Lake	274 272 2354 2151 issti 1941 1552 1538 1751 on 2346 139 163 21 32 1480 840 849
KDEN KMYR KGLW WROD WSOY KVOX KCAP KGEZ KPRK KATL KRJF KBTK KQTE KSID KORK	FL IL MN MT	Denver Denver Denver Glenwood Statement Statement Decatur Moorehead Helena Kalispell Livingston Hiles City Missoula Missoula Sidney Las Vegas	e 739 1023 1023 998 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877 562	KSEW KCLF KOWI KTUC KYHA KRE KCRE KCOP KSDA KCDY KSPA KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KURI KONG KONG KONG KONG KONG KONG KONG KONG	AZ CA CO GA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baria Santa Paula Visalia Canon City La Junta Gainesville Bacon Idaho Falls	1442 850 1217 1116 1222 1106 667 144 1101 485 880 1 931 1 974 1070 1161	KJDY WCOS WLSB KUNO KIUN EDWT KLCK ERSC EITZ EPHA WATW WATW CFLD CKGR CINL	VA WA WY BC	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Tacoma Ashland Casper Burns Lake Golden Frinceton	274 272 2354 2151 issti 1941 1552 1558 1751 2346 139 163 21 32 1480 840 849 351 153
KDEN KMYR KGLW WROD WSOY KVOX KCAP KGEZ KATL KATL KATE KSID KORK KATO ESIL	FL IL MN MT	Denver Denver Denver Colored Section 15: Daytona Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silver City	e 739 1023 1023 998 936 ach 1723 1206 491 380 595 777 777 390 390 1056 877 562	KSEW KCLF KOWI KYMA KRE KCRE KREO KSDA KCDY KSPA EURI KONG KONG KONG WHEN KUNI KONG KOUN KONG KOUN KONG KONG KONG KONG KONG KONG KONG KON	AZ CA CO GA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Harie Santa Paula Ukiah Visalia Canon City La Junta Gainesville	1442 850 1217 1116 1222 1106 667 144 1101 485 880 1 931 1 974 1070 1161	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ WATW KATU CFLD CKGR CINL	VA WA WY BC	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Othello Silvardale Tacoma Tacoma Ashland Casper Burns Lake Golden Princeton	274 272 2354 2151 168ti 1941 1558 1751 2346 139 163 21 32 32 1480 840 494 494 153
KDEN KMYR KGLW WROD WSOY KVOX KCAP KGEZ KPRK KATL KSIT KORK KATO ESIL KLOO	FL IL MN MT	Denver Denver Denver Conver Co	e 739 1023 1023 9936 ach 1723 1206 491 380 595 777 390 390 1056 877 562	KSEW KCLF KOWL KYHA KRE KCRE KREO KSDA KCOY KSPA KONG KURI KONG KRLW KBRZ WDUW KBRZ WDUW KIFI KART KORL KORL KORL KORL KORL KRLW KRIL KORL KRIL KRIL KORL KRIL KRIL KORL KRIL KORL KRIL KORL KRIL KORL KORL KORL KORL KORL KORL KORL KOR	AZ CA CO GA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baria Santa Paula Visalia Canon City La Junta Gainesville Bacon Idaho Falls	1442 850 1217 1116 1222 1106 667 144 140 1485 1 880 1 931 1 930 1 1070 1161	KJDY WCOS WLSB KUNO KIUN KTEM WHLF KLCK ERSC EITZ EITZ EYMA WATU KATI CFLD CFLD CKRP	TN TX VA WA WI WY BC	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ta	274 272 2354 2151 issti 1941 1552 1558 1751 2346 139 163 21 32 1480 840 849 351 153
KDEN KMYR KGLM WROD WSOY KVOAP KGEZ KPRK KATL ERJF KBTK KORK KORK KORK KORK KORK KORK KORK KO	FL IL MN MT	Denver Denver Denver Glenwood Statement Statement Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silvar Cit; Corvallis Corvallis	e 739 1023 1023 2572 2741 1723 1206 491 380 595 777 777 390 1056 877 567 219	KSEW KCLF KOWI KYMA KRE KCRE KREO KSDA KCDY KSPA EURI KONG KONG KONG WHEN KUNI KONG KOUN KONG KOUN KONG KONG KONG KONG KONG KONG KONG KON	AZ CA CO GA	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Maris Santa Paula Ukiah Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 1 880 1 931 586 794 1070 1161 2219 2288 573 573 519	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ WATW KATU CFLD CKGR CINL	TN TX VA WA WI WY BC	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Othello Silvardale Tacoma Tacoma Ashland Casper Burns Lake Golden Princeton	274 272 2354 2151 168ti 1941 1558 1751 2346 139 163 21 32 32 1480 840 494 494 153
KDEN KMYR KGLW WROD WSOY KVOX KVAP KGEZ KPRK KATL KATL KATL KATL KORK KATO KORK KATO KUL KUL KIHR	FL IL MN MT	Denver Denver Denver Corvallis Hood River City	e 739 1023 1023 1028 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877 562 1269 1219 219 219	KSEW KCLF KOWI KTUC KYMA KREO KSDA KCDY KSPA KURI KONG KRLE WDUM WHEX KIFI KART KPRL KSPT	AZ CA CO GA ID	Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baris Santa Paula Ukiah Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Moscow Sand Point Ft Dodge	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 880 1931 586 794 1070 1161	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK EITZ EITZ EPMA WATW KATI CFLD CKGR CJNL- CKRP 2PK	TN TX VA WA WY BC	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Othello Silverdale Tacoma Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton	274 274 272 2354 2151 168ti 1941 1558 1751 500 2346 139 163 21 32 32 1480 840 494 494 153 153 153 153
KDEN KHYR EGLM WROD WROD KVOX KCAP KGEZ KCAP KGEZ KOTE ESID KORK KATO ESIL KLOO KRUL KIR KFIR	FL IL MN MT MT WE NV WE OR	Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Biles City Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Gorvallis Hood River North Bend	e 739 1023 1023 1023 998 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877 562 7 1269 219 219 136 304	KSEW KCLF KOWL KYHA KREO KSDA KCOY KSPA KONG KUKI KONG KUKI KONG KILI KONG KING KING KING KING KING KING KING KI	AZ CA CO GA ID	Sodiak AFRS Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Cs Indio Redding Santa Harie Santa Paula Ukiah Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Hoscow Sand Point Ft Dodge Glendive	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 880 1931 1586 794 1070 1161 2219 2288 573 519 258 270 1417 821	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EPHA WATW KATII CFLD CINL CJNL CKRP 2PK	TN TX VA WA WI WY BC -1 MSW kHz	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ta	274 274 272 2354 2151 168ti 1941 1558 1751 500 2346 139 163 21 32 32 1480 840 494 494 153 153 153 153
KDEN KMYR KGLM WROD WSOY KVOAP KGEZ KPAK KATL KRJF KBTK KORK KATL KIJF KORK KATL KURS KUL KIJF KURS KUL KIJF KUL KUL KIJF KUL KUL KUL KUL KUL KUL KUL KUL KUL KUL	FL IL MN MT MT WE NV WE OR	Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallia Corvallia Hood River North Bend El Paso	e 739 1023 1023 998 936 2572 2741 1723 1206 491 380 595 777 777 390 1056 877 567 219 136 304 1382	KSEW KCLF KOWL KYHA KREO KSDA KCDY KSPA KONG KLBWZ WDUW WHEX KIFI KAPL KSPT KYFD KXLK KXLK	AZ CA CO GA ID	Solika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baris Santa Paula Visalia Canon City La Junta Gainesville Bacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls	1442 850 1217 1116 1222 11106 667 114 1101 485 1 931 586 794 1070 1161 2219 2288 270 1417 821 821 821 821 83 84 85 85 85 85 85 85 85 85 85 85 85 85 85	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK EITZ EITZ EITZ CFLD CKGR CINL CJNL CKRP 2PK 1450 GTH:	TN TX VA WA WI WY BC -1 MSW kHz Bell	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Parkes ROY MILLAR evue, WA	274 272 2354 2151 issti 1941 1552 1558 1751 2346 139 163 21 32 32 1480 8494 351 153 153 153 153 8298
KDEN KHYR EGLM WROD WROD KVOX KCAP KGEZ KCAP KGEZ KOTE ESID KORK KATO ESIL KLOO KRUL KIR KFIR	FL IL MN MT MT WE NV WE OR	Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Biles City Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Gorvallis Hood River North Bend	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 390 1056 877 777 762 1269 219 219 219 219 219 2186 304	KSEW KCLF KOWL KYMA KRE KCRE KREO KSDO KSDO KSDO KONY KSPA KONG KRLW KURI KONG KRLW KURI KONG KRLW KURI KONG KRLW KURI KONG KIFI KART KIFI KART KEPL KEPL KSPL KSCO KSCO KONG KONG KONG KONG KURI KURI KURI KURI KURI KURI KURI KURI	AZ CA CO GA ID IA HT	Solika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Marie Santa Paule Ukich Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Alliance	1442 850 1217 1116 1222 11106 667 1ty 414 1101 485 1 880 1 931 586 794 1070 1161 2219 2288 573 573 519 258 270 1417 821 1512 1512 1512 1512 1512 1512 1512	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ EPMA WATW KATI CFLD CKGR CJNL- CKRP 2PK 1450 QTH: WDIG	TN TX VA WA WI WY BC -1 MSW kHz Bell	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Parkes ROY MILLAR evue, WA Dothan	274 274 272 2354 2151 168ti 1941 1558 1751 500 2346 139 163 21 32 32 1480 840 494 494 153 153 8298
KDEN KHYR KGLN WROD WRODY KVOX KCAP KGEZ KOAP KGEZ KATL KRJF KATL KATE ESID KORK KATO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KILO KILO KILO KILO KILO KILO KI	FL IL MN MT MT WE NV WE OR	Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Hood River North Bend El Paso Port Arthur	e 739 1023 1023 1023 Pgs 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877 562 7 1269 219 219 136 304 1382	KSEW KCLF KONIL KYHA KRE KCRE KREO KSDA KCDY KSPA KCDY KSPA KONI KSRI KONIL KSRI KBRZ WDUN WHEX KIFI KSPT KYFL KSPT KYGH KXGH KXGH KXGH KXGH KXGH KXGH KXGH KX	AZ CA CO GA ID IA HT	Kodiak AFRS Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Cs Indio Redding Santa Haria Santa Haria Santa Haria Canon City La Junta Gainesvilla Hacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Allianac Roswell	1442 850 1217 1116 1222 11106 667 1141 1101 485 880 1 586 794 1070 1161 2219 2288 573 519 258 270 1417 821 5112 1031	KJDY WCOS WLSB KUNO KIUN KUNT KTEM WHLF KLCK ERSC EITZ EPHA WATW KATII CFLD CKRP 2PK 1450 QTH: WDIG WFUN	TN TX VA WA WI WY BC -1 MSW kHz Bell	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ta	274 274 272 2354 2151 1381 1941 1552 1751 2346 139 163 21 1480 494 351 153 153 153 153 153 153 252 153 263 273 273 273 273 274 275 275 275 275 275 275 275 275 275 275
KDEN KMYR KGLM WROD WSOY KVOAP KGEZ KCAP KGEZ KATL KRJF KBTK KORK KATL KURS KRUL KIHR KFIL KIHR KFIL KING KRUL KIHR KFIL KING KRUL KIHR KFIL KING KRUL KIHR KORK KRIL KING KRUL KIHR KING KRUL KIHR KING KING KING KING KING KING KING KING	FL IL MN MT MT WE NV WE OR	Denver Denver Denver Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallis Hood River North Bend El Paso Port Arthur San Angelo	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 595 777 777 390 1056 877 219 219 136 304 1382 r 2006	KSEW KCLF KOWIL KWIL KWIL KWIL KWIL KWIL KWIL KWIL K	CO GA ID IA HT	Kodiak AFRS Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Senta Harie Santa Paula Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Alliance Roswell Tucumcari	1442 850 1217 1116 1222 11106 667 114 1101 485 1 931 586 794 1070 1161 2219 2288 573 573 579 250 270 1417 821 1361 1361 1361 1361 1361 1361 1361 13	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ EPMA WATW KATI CFLD CKGR CJNL- CKRP 2PK 1450 QTH: WDIG	TN TX VA WA WI WY BC -1 MSW kHz Bell	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Parkes ROY MILLAR evue, WA Dothan	274 272 2354 2151 issti 1941 1552 1558 1751 2346 139 163 21 32 32 1480 840 494 351 153 153 8298
KDEN KHYR KGLN WROD WRODY KVOX KCAP KGEZ KOAP KGEZ KATL KRJF KATL KATE ESID KORK KATO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KRIL KILO KILO KILO KILO KILO KILO KILO KI	FL IL MN MT ME NV MN TX	Denver Denver Denver Denver Glenwood Si Daytona Be Palm Beach Decatur Moorehead Helena Kalispell Livingston Hiles City Missoula Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria	e 739 1023 1023 1023 Pys 936 ach 2572 2741 1723 1206 491 380 390 1056 877 777 562 1269 219 219 219 2196 304 1382 r 2006 1619 1892	KSEW KCLF KOWLC KYMA KRE KCRE KREOA KCOY KSPAI KONG KRLW KURI KONG KRLW KURI KONG KRLW KURI KURI KURI KURI KURI KURI KURI KURI	AZ CA CO GA ID IA HT III NV	Solika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baria Santa Paula Ukiah Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Hoscow Sand Point Ft Dodge Glendive Great Fella Alliance Roswell Tucumcari Carson City	1442 850 1217 1116 1222 11106 667 1ty 414 1101 485 1 880 1 931 586 794 1070 1161 2219 2288 3 573 519 258 270 2117 821 1031 1361 1296	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ EPMA WATW KATU CCFLD CKGR CCFLD CKGR CTHL CJNL CJNL CHP ZPK 1450 QTH: WDIG WFUN WLAY	TN TX VA WA WI WY BC -1 MISSU kHz Bell AL	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Princeton Parkes ROY MILLAR Evue, WA Dothan Runtsville Buscle Shoe	274 274 272 2354 2151 168ti 1941 1558 1751 501 2346 139 163 21 32 32 1480 840 494 494 494 153 8298 8298
KDEN KMYR KGLM WROD WSOY KVOX KVAEZ KPKL KATL KATK KATK KATK KATK KATK KATL KLOO KIHR KFIR KSET KOLE	FL IL MN MT ME NV MN TX	Denver Denver Denver Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallis Hood River North Bend El Paso Port Arthur San Angelo	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 595 777 777 390 1056 877 219 219 136 304 1382 r 2006	KSEW KCLF KONIA KRE KYHA KREO KSDA KCDY KSPA KONIA KONIA KSPI KSPI KSPI KSPI KSPI KSPI KSPI KSPI	AZ CA CO GA ID IA HT III NV	Sotika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Harie Santa Paula Ukiah Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Hoscow Sand Point Ft Dodge Glendive Great Falls Alliance Roswell Tucumcari Carson City Benderson	1442 850 1217 1116 1222 11106 667 1141 1101 485 880 1 586 794 1070 1161 2219 2288 579 258 270 1417 821 519 1091 1091 1091 1091 1091 1091 1091	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ERSC EITZ EITZ ETHZ WATW KATI CFLD CKGR CINL CKRP 2PK 1450 QTH: WDIG WFUE WLAY	TN TX VA WA WI WY BC -1 ESW kHz Bell AL	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ta	274 274 272 2354 2151 1681i 1941 1558 1751 2346 139 163 21 1480 840 494 351 153 153 153 153 153 153 21 1480 22 273 2061 188
KDEN KHYR KGLN WROD WROD KVOX KCAP KGEZ KOAP KGEZ KATL KRJF KBTK KATC ESIL KLOO KRUL KIHR KSET ESIL KIHR KSET ESIL KIL KIHR KSET ESIL KIL KIL KIL KIL KIL KIL KIL KIL KIL K	FL IL MN MT ME NV SH OR TX	Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Biles City Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria	e 739 1023 1023 1023 Pys 936 ach 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877 562 y 1269 219 219 219 219 219 219 219 219 219 21	KSEW KCLF KOWIC KYHA KRE KCRE KREO KSDA KCDY KSPA KONG KRUKI KONG KRINI KONG KONG KRINI KONG KRINI KONG KRINI KONG KRINI KONG KRINI KONG KRINI	AZ CA CO GA ID IA BT WE HIM NV	Solika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Harie Santa Paula Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Alliance Roswell Tucumcari Carson City Benderson Winnemucca	1442 850 1217 1116 1222 11106 667 114 1101 485 1 880 1 931 586 794 1070 1161 2219 2288 270 1417 821 1361 1361 1361 1361 1361 1361 1361 13	KJDY WCOS WLSB KUNO KIUN EDWT KTEMWHLF KLCK EITZ EITZ EITZ EITZ EITZ EPMA WATW KATII CFLD CKRP 2PK 1450 QTH: WDIG WFUH KAWT	TN TX VA WA WI WY BC -1 ESW kHz Bell AL	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Princeton Purkes ROY HILLAR evue, WA Dothan Huntaville Huncle Show Cordova Douglas	274 272 2354 2151 issti 1941 1552 1558 1751 2346 139 163 21 32 32 1480 840 494 351 153 8298
KDEN KMYR KGLM WROD WSOY KVOAP KGEZ KCAP KGEZ KATL KRJF KBTK KORK KATL KUR KUL KIHR KFIL KSET KUL KIHR KSET KOLE KYLL KYLL KYLL KYLL KYLL KYLL KYLL KY	FL IL HN HT WE NV SHE OR TX	Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria Vernal Vernal	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 595 777 777 390 1056 877 807 1269 219 136 304 1382 r 2006 1619 1892 807	KSEW KCLF KONIA KRE KYHA KREO KSDA KCDY KSPA KONIA KONIA KSPI KSPI KSPI KSPI KSPI KSPI KSPI KSPI	CO GA ID IA HT ME IN NV OR	Solika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baris Santa Paula Ukish Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerose Moscow Sand Point Ft Dodge Glendive Great Fells Alliance Roswell Tucumcari Carson City Benderson Winnemucca Ashland	1442 850 1217 1116 1222 1106 667 1ty 414 1101 485 880 931 586 794 1070 1161 2219 2288 573 519 258 270 2117 821 1091 1361 1296 913 1361 1296 913	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK EITZ EITZ EITZ EPMA WATW KATU CCFLD CKGR CCGR CCGR CTH: WDIG WFUN WLAY KAMT KAWT ELWOT	TN TX VA WA WI WY BC -1 ESW kHz Bell AL	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Princeton Parkes ROY HILLAF evue, WA Dothan Buntsville Euscle Shoo Cordova Prescott	274 274 272 2354 2151 168ti 1941 1558 1751 501 2346 139 163 21 32 32 1480 840 494 494 494 153 8298 8298
KDEN KMYR KGLN WROD WSOY KVOX KKGEZ KPRK KATL KRJF KBTK KATL KLOO KIHR KFIR KSET KULL KIHR KFIR KSET KOLE KYLL KYLL KYLL KYLL KYLL KYLL KYLL KY	FL IL HN HT WE NV SHE OR TX	Denver Denver Denver Denver Glenwood S Glenwood S Daytona Be Palm Beach Decatur Moorehead Helena Kalispell Livingston Hiles City Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria Vernal Vernal Orange	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 390 1056 877 777 562 219 219 219 219 380 1382 21 2066 1619 1892 807 2332	KSEW KCLF KOWIC KYMA KRE KCRE KREDA KCOY KSPAI KONG KRUMI KONG KRUMI KUMI KUMI KIFI KART KYFD KXGK KCOW KGFI KYFD KXGK KCOW KGFI KYFD KXGK KCOW KGFI KYFD KXGK KOW KGFI KYFD KXGK KOW KGFI KYFD KXGK KOW KGFI KYFD KYFD KYFD KYFD KYFD KYFD KYFD KYFD	CO GA ID IA HT ME IN NV OR	Solika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Harie Santa Paula Visalia Canon City La Junta Gainesville Hacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Alliance Roswell Tucumcari Carson City Benderson Winnemucca	1442 850 1217 1116 1222 11106 667 1101 485 8 893 1 586 794 1070 1161 8 2219 2288 573 258 270 1417 821 519 258 270 1417 821 519 519 519 519 519 519 519 519 519 51	KJDY WCOS WLSB KUNO KIUN KUNT KTEM WHLF KLCK ERSC EITZ EPHA WATW KATII CFLD CKRP 2PK 1450 QTH: WDIG WFUN WLAY ELAN KAWT ENOTO	VA WA WA WY BC -1 MSW AL AZ	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Punceton Princeton Punceton Punceton Cordova Douglas Prescott Tuccoma	274 274 272 2354 2151 1381 1941 1552 1751 2346 139 163 21 1480 494 351 153 153 153 153 153 21 1153 21 122 2273 2061 188 2012 1305 1314 1038
KDEN KMYR KGLN WROD WROD KVOXP KGEZ KOAP KGEZ KATL KRJF KBTK KATE ESID KORK KATO ESIL KLOO KRUL KIHR KSET ESIL KUD KIHR KSET ESIL ESIL ESIL ESIL ESIL ESIL ESIL ESIL	FL IL HN HT WE NV SHE OR TX	Denver Denver Denver Denver Glenwood S Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Biles City Missoula Sidney Las Vegas Reno Silver City Corvallis Corvallis Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria Vernal Orange Anacortes	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 595 777 777 390 390 1056 877 562 7 1269 219 219 219 219 136 304 1382 12006 1619 1892 807 807 2332 72	KSEW KCLF KOWIC KYMA KRE KCRE KREDA KCOY KSPAI KONG KRUMI KONG KRUMI KUMI KUMI KIFI KART KYFD KXGK KCOW KGFI KYFD KXGK KCOW KGFI KYFD KXGK KCOW KGFI KYFD KXGK KOW KGFI KYFD KXGK KOW KGFI KYFD KXGK KOW KGFI KYFD KYFD KYFD KYFD KYFD KYFD KYFD KYFD	CO GA ID IA HT WE WIN NV OR	Kodiak AFRS Sitka Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Senta Haria Santa Paula Ukiah Visalia Canon City La Junta Geinesville Hacon Idaho Falls Jerome Moscow Send Point Ft Dodge Glendive Great Falls Alliance Roswell Tucumcari Carson City Benderson Winnemucca Ashland Cottage Gro	1442 850 1217 1116 1222 11106 667 114 1101 485 1 931 1 586 1 794 1070 1161 2 2288 2 573 3 519 2 258 2 70 1417 8 219 2 288 2 70 1417 8 219 2 1091 1 296 1 562 9 13 1 296 1 562 9 13 1 296 1 562 9 13 1 274	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK EITZ EITZ EITZ EPMA WATW KATU CCFLD CKGR CCGR CCGR CTH: WDIG WFUN WLAY KAMT KAWT ELWOT	VA WA WA WY BC -1 MSW AL AZ	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Princeton Parkes ROY HILLAF evue, WA Dothan Buntsville Euscle Shoo Cordova Prescott	274 274 272 2354 2151 168ti 1941 1558 1751 501 2346 139 163 21 32 32 1480 840 494 494 494 153 8298 8298
WPG WSOY KVOY KVOY KVOY KGEZ KCAP KGEZ KATL ERJF KBTK KGTE ESID KORK KFIL KLOO KRUL KIHR KFIL EVIL EVIL EVIL EVIL WJAA EAGT	FL IL HN HT WE NV SHE OR TX	Denver Denver Denver Denver Glenwood S Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silver City Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria Vernal Vernal Orange Anacortes Pasco	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 595 777 777 390 1056 877 867 219 219 1382 r 2006 1619 1892 807 2332 177	KSEW KCLF KOWI KYHA KRE KCRE KREOA KCDY KSPAI KONG KRUKI KONG KRIJ KONG KRIJ KONG KRIJ KONG KRIJ KARL KSPT KVFD KVFD KVFD KVFD KVFD KVFD KVFD KVFD	CO GA ID ME ME NV OR	Sotika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baris Santa Paula Visalia Canon City La Junta Gainesville Bacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Alliance Rowell Tucumcari Carson City Benderson Winnemucca Ashland Cottage Gro Oceanlake	1442 850 1217 1116 1222 11106 667 119 414 1101 485 1 880 2 931 586 794 1070 1161 2 2219 2 2288 3 573 2 573 2 578 2 779 1417 8 21 1 561 1 296 1 291 1 361 1 296 1 291 1 371 1 3	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK ETTZ ETTZ ETTZ ETTZ ETTZ ETTZ ETTZ ETT	VA WA WA WY BC -1 MSW AL AZ	John Day Columbia Copperhill Corpus Chr. Pacos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Princeton Purkes ROY HILLAR evue, WA Dothan Huntaville Huncle Show Cordova Douglas Prescott Tuccoon Blythe	274 274 272 2354 2151 168ti 1941 1558 1751 500 163 2346 139 163 21 32 32 1480 840 494 351 153 8298 2273 261 273 2061 381 2012 1305 1305 1305 1305 1305 1305 1305 1305
KDEN KMYR KGLM WROD WSOY KVCAP KGEZ KPRK KATL ERJF KBTK KORK KATL ESID KORK KIHR KFIRT ESID KORK KFIRT ESID KORK KFIRT ESID KORK KFIRT ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID KORK KSET ESID ESID ESID ESID ESID ESID ESID ESID	FL IL HN HT WE NV SHE OR TX	Denver Denver Denver Denver Glenwood Si Daytona Be Palm Beach Decatur Moorehead Helena Kalispell Livingston Miles City Missoula Missoula Sidney Las Vegas Reno Silvar City Corvallis Corvallis Hood River North Bend El Paso Port Arthur San Angelo Victoria Vernal Vernal Vernal Orange Anacortes Pasco Raymond	e 739 1023 1023 1023 2572 2741 1723 1206 491 380 390 1056 877 777 562 219 219 219 219 219 1382 21 206 1619 1892 807 2332 772 177 2332 772	KSEW KCLF KOWI KYHA KRE KCRE KREO KSDA KCDY KSPAI KONG KRUKI KRUKI KONG KRUKI K	CO GA ID ME ME NV OR	Sotika Clifton Phoenix Tucson Yuma Berkeley Crescent Ci Indio Redding Santa Baris Santa Paula Visalia Canon City La Junta Gainesville Bacon Idaho Falls Jerome Moscow Sand Point Ft Dodge Glendive Great Falls Alliance Rowell Tucumcari Carson City Benderson Winnemucca Ashland Cottage Gro Oceanlake	1442 850 1217 1116 1222 11106 667 114 1101 485 1 931 1 586 1 794 1070 1161 2 2288 2 573 3 519 2 258 2 70 1417 8 219 2 288 2 70 1417 8 219 2 1091 1 296 1 562 9 13 1 296 1 562 9 13 1 296 1 562 9 13 1 274	KJDY WCOS WLSB KUNO KIUN EDWT KTEM WHLF KLCK EITZ EITZ EITZ EITZ EITZ WATW KATW KATW CFLD CKGR CCHR CJNL- CKRP ZPK WDIG WFUN WLAY KAWT EUDT EUDT KOPO KYOR	VA WA WA WY BC -1 MSW AL AZ	John Day Columbia Copperhill Corpus Chr. Pecos Stamford Temple South Bosto Goldendale Othello Silverdale Tacoma Ashland Casper Burns Lake Golden Princeton Princeton Princeton Princeton Princeton Parkes ROY HILLAF evue, WA Dothan Buntsville Buscle Shou Cordova Douglas Prescott Tuccon Blythe Escondido	274 274 272 2354 2151 168ti 1941 1558 1751 500 163 2346 139 163 21 32 32 1480 840 494 351 153 8298 2273 261 273 2061 381 2012 1305 1305 1305 1305 1305 1305 1305 1305

(16)										
KTIP		Porterville 81	5 1450	kHz	ROY MILLA	R	WEIDC		Philadelph	ia
ESAN		San Francisco	QTH:	Mar	ysville, WA	_				2029
		77	7 KSOL	CA	San Franci	sco	KBOV		Butte	573
KROG		Sonora 67				670	KBON		Omaha	1373
KVÉN		Ventura 93			Yuba City	579	KAEA	黃斑	Hobbs	1445
KAGR		Yuba City 58		ID	Bonner's F	erry 313	KRSI		Los Alamos	
WILM		Wilmington 240			Payette	351	KRTE	MIL	Raton	1172
WYPB		Miami 277		MH	Albuquerqu		WOLF		Syracuse	2266
KPID KEEP	ΙD	Payette 35 Twin Falls 52			•	1186	KNDC WSRS		Hettinger Cleveland	937
KVBV	re.	Hutchinson 140	™ KMDT		Great Fall	s 511	#5115	OII	Cleverand	2040
KSIG		Crowley 200	KGHY		Missoula	390	KBKR	OR	Baker	288
WTIX		New Orleans	- KRG2		Missoula	390	KRNR		Roseburg	306
W / 1/2		211	3 KRBN		Red Lodge	654	KBZY		Salem	186
WELY	MN	Ely 141	- WORK		Whitefish	382	KOCO		Salem	186
WROX	MS	Clarkedale 189	° KTXI 8 KGC4		Whitefish	382	WJJM	TN	Lewisburg	2019
UROB		West Point 203			Rugby Eugene	1034 238	KVOW	ТX	Littlefiel	d
KXLQ	нт	Bozeman 54	- 11		Eugene	238 238				1402
KXXL		Bozeman 54			Eugene	238	KVOG		Ogden	674
KBGF		Great Falls 51			Klamath Fa		KBRO	WA	Bremerton	21
KUDI		Great Falls 51				371	KELS KLOG		Kelso Kelso	106
KXLL		Missoula 39		TX	Junction	1680	KETE		Toppenish	106 126
KOME		Reno 56	2 KAYO	WA	Aberdeen	80	KTEL		Walla Wall	
WCTC	ĦĴ	New Brunswick	_ KJUN		Puyallup	24	KGOS	ωv	Torrington	
W1 00		242			Puyallup	24	KWOR		Worland	780
KLOS	NП	Albuquerque	KUPY		Puyallup	24				, 00
		119	1 CFBC	: AB	Canmore	392				_
KIMY		Cleyton 124	-				1490	kHz	ROY MILLA	١R
KLMX		Clayton 124	5 CBXC	:	Coleman	458			RUY MILLA Bville, WA	NR.
KLMX Kobe Keun		Las Cruces 133	5 CBXC	:	Coleman Jamper	458 413	QTH: M	ary		
KOBE	OR	Las Cruces 133 Portales 135	5 CBXC 7 CKYR 7 CBXB	:	Coleman	458 413 ek	QTH: M KWAC KRKC	ary	sville, WA Bakersfiel King City	d 854 782
KEUM	OR	Las Cruces 133	5 CBXC 7 CKYR 7 CBXR 3	BC	Coleman Jasper Cooper Cre	458 413 ek 261	QTH: M	ary	sville, WA Bakersfiel	d 854 782 shoe
KOBE KEUM KWRO	OR	Las Cruces 133 Portales 135 Coquille 30	5 CBXC 7 CKYR 7 CBXB 3	BC	Coleman Jamper	458 413 ek 261	OTH: M KWAC KRKC KOWL	CA	Bakersfiel King City S. Lake Ta	d 854 782 shoe 602
KOBE KEUM KWRO KORE KFLW	OR	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 37	5 CBXC 7 CEXTS 7 CBXE 3 4 CKSF	BC	Coleman Jasper Cooper Cre Summerland	458 413 ek 261 187	OTH: M KWAC KRKC KOWL KBOL	CA CO	sville, WA Bakersfiel King City S. Lake Ta Boulder	.d 854 782 shoe 602
KOBE KEUM KWRO KORE KFLW	OR	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 37 La Grande 26	5 CBXC 7 CEXTS 7 CBXE 3 4 CKSF 6 1490 0 QTH:	BC kHz	Coleman Jasper Cooper Cre Summerland ROY MILLA	458 413 ek 261 187	OTH: M KWAC KRKC KOWL	CA CO	Bakersfiel King City S. Lake Ta	.d 854 782 shoe 602 995
KORE KWRO KORE KFLW KLBM KBPS		Las Cruces 133 Portains 135 Coquille 30 Eugene 24 Klamath Falls 37 La Grande 26 Portland 13	5 CBXC 7 CKYR 77 CBXR 3 4 CKSP 6 1490 0 QTH: 8 KYCA	kHz Bel	Coleman Jasper Cooper Cre Summerland	458 413 ek 261 187	QTH:M KWAC KRKC KOWL KBOL KLGR	CA CA CO MN	Bville, WA Bakersfiel King City S. Lake Ta Boulder Redwood Fa	.d 854 782 shoe 602 995
KOBE KEWH KWRO KORE KFLW KLBM KBPS WLAR	178	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 37 La Grande Portland 13 Athens 207	7 CEYR 7 CEYR 3 4 CESF 8 1490 9 QTH: 8 KYCA	kHz Bel	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA	458 413 ek 261 187	OTH: M KWAC KRKC KOWL KBOL	CA CA CO MN	sville, WA Bakersfiel King City S. Lake Ta Boulder	.d 854 782 shoe 602 995
KOBE KEUH KWRO KORE KFLW KLBM KBPS WLAR KRIC	178	Las Cruces 133 135	5 CBXC 7 CEYR 7 CBXE 3 4 CKSF 8 1490 9 QTH: 8 KYCA KAIR 63 KDRS	kHz Bel AZ	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould	458 413 esk 261 187 R 1038 1221 1824	QTH:M KWAC KRKC KOWL KBOL KLGR	CA CA CO MN	Boulder Redwood Fe Dillon	782 thoe 602 995 alls 1322 491
KOBE KEWH KWRO KORE KFLW KLBM KBPS WLAR	178	Las Cruces 133	5 CBXC 7 CEYR 7 CBXE 3 4 CESP 8 1490 0 QTH: 8 KYCA KAIR 3 EDRS	kHz Bel AZ	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn	458 413 eak 261 187 R 1038 1221 1824 609	CTH:M KWAC KRKC KOWL KBOL KLGR KDBM KDBI KLYN KLNG	CA CO MN HT	Bouille, WA Bakersfiel King City S. Lake Te Boulder Redwood Fe Dillon Dillon	d 854 782 thoe 602 995 alls 1322 491 491
KOBE KENH KWRO KORE KFLW KLBM KBPS VLAR KRIC KBEM	178	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Elamath Falls 37 La Grande 26 Portland 135 Athens 207 Beaumont 195 Carrizo Spring 175	5 CBXC 7 CEYR 7 CBXE 3 4 CKSP 8 1490 0 QTH: 8 KYCA 14 KAIR 13 KDRS 14 KPAS	kHz Bel AZ	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning	458 413 ek 261 187 R 1038 1221 1824 609 987	OTH:M KWAC KRKC KOWL KBOL KLGR KDBM KDBI KLYN	CO MN HT	Byille, WA Bakersfiel King City S. Lake To Boulder Redwood Fo Dillon Dillon Laurel	d 854 782 thoe 602 995 alls 1322 491 491 660 1371
KOBE KENH KWRO KORE KFLW KLBM KBPS WLAR KRIC KBEM	TRI TX	Las Cruces 133	5 CBXC 77 CBXE 3 4 CKSP 6 1490 0 QTH: 8 KYCA KAIR 3 KDR3 1 KDR3 1 KPAS	BC Bel AZ AR	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Benning Bijou	458 413 eak 261 187 R 1038 1221 1824 609 987 937	OTH:M KWAC KRKC KOWL KBOL KLGR KDBH KDBI KLYN KLNG KOVC	CO MN MT	Boulder Boulder Redwood Fa Dillon Dillon Laurel Omaha Valley Cit	d 854 782 shoe 602 995 alls 1322 491 491 660 1371 ty 1137
KOBE KENH KWRO KORE KFLW KLBM KBPS VLAR KRIC KBEM	TRI TX	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Elamath Falls 37 La Grande 26 Portland 135 Athens 207 Beaumont 195 Carrizo Spring 175	5 CBXC 7 CEYR 7 CBXE 3 4 CESP 8 1490 0 QTH: 14 KAIR 13 EDRS 14 KOWL 11 KOWL	BC Bel AZ AR	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Banning Burbank	458 413 esk 261 187 R 1038 1221 1824 609 987 960	GTH:M KWAC KRKC KOWL KBOL KLGR KDBM KDBI KLYN KLNG KOVC	CO HN HT NE ND	Bakersfiel King City S. Lake To Boulder Redwood Fo Dillon Dillon Laurel Omeha Valley City	d 854 782 thoe 602 995 this 1322 491 491 660 1371 ty 1137 670
KOBE KEWH KWRO KORE KFLW KLBM KBPS WLAR KRIC KBEM KCTI KURA	TRI TX	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 37 La Grande 26 Portland 13 Athena 207 Reaumont 195 Carrizo Spring 179 Conzales Roab 86	5 CBXC 77 CEYF 78 CBXF 73 4 CKSF 78 1490 80 QTH: 88 KYCA 84 KAIR 85 EDIA 11 KOWLA 15 KICO	kHz Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico	458 413 esk 261 187 R 1038 1221 1824 609 987 937 960 1093	WAC KRKC KOWL KBOL KLGR KDBH KDBI KLYN KLNG KOVC	CO HN HT NE ND	Boulder Redwood Fa Dillon Dillon Laurel Omaha Valley Cit	d 854 782 shoe 602 995 alls 1322 491 660 1371 ty 1137 670 100
KOBE KEMM KWRO KORE KEFLW KLBM KBPS WLAR KRIC KBEM KCTI KURA KEYY	TRI TX	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 37 La Grande 26 Portland 13 Athens 207 Beaumont 195 Carrizo Spring 179 Gonzales 206 Roab 873	5 CBXC 7 CEXTE 7 CBXE 3 4 CESF 8 1490 0 QTH: 8 KYCA 4 KAIR 11 KPAS 11 KOWL 11 KDAS 5 KKFP	kHz Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma	458 413 ek 261 187 R 1038 1221 1824 609 987 937 960 1093 647	GTH:M KWAC KRKC KOWL KBOL KLGR KDBM KDBI KLYN KLNG KOVC	CO HN HT NE ND	Bakersfiel King City S. Lake To Boulder Redwood Fo Dillon Dillon Laurel Omeha Valley City	d 854 782 thoe 602 995 stills 1322 491 491 660 1371 ty 1137 670 100
KOBE KEMM KWRO KORE KEPLW KLBM KBPS WLAR ERIC EBEM KCTI KUTA KEYY KMEU	TR TX UT	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 30 La Grande 26 Portland 13 Athena 207 Beaumont 195 Carrizo Spring 175 Conzales 206 Hoab 88 Provo 73 St George 85	5 CBXC 7 CEYF 7 CBXE 3 4 CESF 8 1490 0 QTH: KYCA 4 KAIR 1 EPAS 1 KOWL 1 KBLA 5 KAFP 6 KAFP 6 KAFP 6 KAFP 6 KAFP 6 KAFP 6 KAFP	kHz Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma Red Bluff	458 413 413 261 167 R 1038 1221 1824 609 987 960 1093 647 512	QTH:M KWAC KRKC KOWL KBOL KLGR KDBM KDBI KLYN KLYN KLYN KUYC KVAC KEYG	CO MN MT NE ND	Boulder Redwood Fe Dillon Dillon Laurel Omeha Valley Cit Ogden Forks Grand Cout	d 854 782 whoe 602 995 wills 1322 491 491 660 1371 ity 1137 670 100 100
KOBE REM KWRO KORE KFLW KLBM KBPS WLAR ERIC EBEM KCTI EUTA KETY EMEU KDXU KBK KCLX	TR TX UT	Las Cruces 133	5 CBXC 7 CEYF 7 CBXF 3 3 4 CESP 8 HYCA 4 KAIR 9 KOLA 11 EPAS 11 KOWL 11 KOWL 11 KAFP 12 KDL 12 KDL 13 KDL 14 KDL 15 KDL 16 KDL 16 KDL 17 KDL 17 KDL 18 KDL 18 KDL 18 KDL 18 KDL	kHz Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma	458 413 ek 261 187 R 1038 1221 1824 609 987 937 960 1093 647 512 ara	QTH:M KWAC KRWC KOWL KBOL KLGR KDBH KLYN KLNG KOVC EJON KVAC KEYG CJPR	CO MN MT NE ND	Boulder Redwood Fa Dillon Dillon Laurel Omaha Valley Cit Ogden Forks Grand Coul Blairmore	d 854 782 shoe 602 995 stlls 1322 491 491 660 1371 EY 1137 670 100 lee
KOBE EDM KWRO KORE EFLU KLBM KBPS WLAR ERIC EBEM KCTI EURA EETU KBKW KCEK KSEM	TR TX UT	Las Cruces 133	5 CBXC CKYR CCSYR 3 CKSP 6 1490 6 1490 6 KYR KYCA KYCA KYCA KYCA KYCA KYCA KYCA KYCA	BC Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma Red Bluff	458 413 413 261 167 R 1038 1221 1824 609 987 960 1093 647 512	QTH:M KWAC KRKC KOWL KBOL KLGR KDBH KLYN KLYN KLYN KLYN KLYO KEYG CJPR CBXY	CO MN MT NE ND UT WA	Boulder Boulder Redwood Fe Boulder Redwood Fe Dillon Dillon Laurel Omaha Valley Cit Ogden Forks Grand Coul Blairmore Falher	.d 854 782 shoe 602 995 shlls 1322 491 660 1371 ty 1137 670 100 lee 157 459 614
KOBE EDM KWRO KORE KFLW KLBM KBPS WLAR ERIC EBEM KCTI KURA KEYY KMEU KBKW KCLX KSEM KRSC	TR TX UT	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Klamath Falls 37 La Grande 26 Portland 13 Athens 207 Reaumont 195 Carrizo Spring 179 Conzales 206 Roab 86 Provo 73 Provo 73 Provo 73 Aberdeen 24 Moses Lake 14 Othello 14	5 CBXC CKYR CCSP 3 CKSP 6 1490 9TH: 8 KYCA 4 KACA 11 EPASS 11 KOWL 11 KBLA 5 KAFP 12 KBL 12 KBL 13 KBL 14 KBL 15 KAFP 16 KBL 16 KBL 17 KBL 18	kHz Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY HILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma Red Bluff Santa Barb	458 413 413 413 415 261 187 8 1221 1824 609 937 960 1093 647 5112 ara 919	QTH:M KWAC KRWC KOWL KBOL KLGR KDBH KLYN KLNG KOVC EJON KVAC KEYG CJPR	CO MN MT NE ND UT WA	Boulder Redwood Fa Dillon Dillon Laurel Omaha Valley Cit Ogden Forks Grand Coul Blairmore	.d 854 782 shoe 602 995 shlls 1322 491 660 1371 ty 1137 670 100 lee 157 459 614
KOBE KEMM KWOO KORE KFI-W KLBM KBPS WLAR KRIC KBEM KCTI KURA KETI KURA KETU KDKU KOLX KSEM KKSEM	TR TX UT	Las Cruces 133	5 CBXC CEYF CBXE 6 1490 9TH: 8 KYCA KAIR 11 KOWL 11 KBLA 5 KAFP 13 KOWL 15 KAFP 16 KBL 6 KAFP 16 KBL 6 KAFP 17 KBL 6 KAFP 18 KBL 6 KAFP 18 KBL 6 KAFP 18 KBL 6 KBL 7 KBL	kHz Bel AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma Red Bluff Santa Barb	458 413 413 261 167 R 1038 1221 1824 609 987 960 1093 647 512 ara 919 406	QTH:M KWAC KRKC KOWL KBOL KLGR KDBH KLYN KLYN KLYN KLYN KLYO KEYG CJPR CBXY	CO MN MT NE ND UT WA	Boulder Boulder Redwood Fe Boulder Redwood Fe Dillon Dillon Laurel Omaha Valley Cit Ogden Forks Grand Coul Blairmore Falher	d 854 782 shoe 602 95 sills 1322 491 660 1371 ty 1137 670 100 lee 157 459 614 River
KOBE EEM KWRO KORE EFLW KLBM KBPS WLAR ERIC EBEM KCTI KURA KEYEU EDKU KBKW KKSEM KRSC KONP KAYE	TR TX UT	Las Cruces 133 Portales 135 Coquille 30 Eugene 24 Elamnth Falls La Grande 26 Portland 13 Athens 207 Beaumont 195 Carrizo Spring 179 Conzales 206 Roab 88 Provo 73 Provo 73 St George 85 Aberdeen 8 Colfax 24 Moses Lake 14 Othello 16 Port Angeles 6 Puyallup 2	5 CBXC CEYF CBXE 6 1490 OTH: 8 KYCA 6	BC Bell AZ AR CA	Coleman Jasper Cooper Cre Summerland ROY MILLA levue, WA Prescott Tucson Paragould Auburn Banning Bijou Burbank Calexico Petaluma Rad Bluff Santa Barb Yreka Lihue Blackfoot Caldwell	458 413 413 413 415 416 416 417 418 418 418 418 418 418 418 418 418 418	QTH:M KWAC KRKC KOWL KBOL KLGR KDBH KLYN KLYN KLYN KOVC EJON KVAC KEYG CJPR CBXY CFWB	CO MN MT NE ND UT WA	Boulder Redwood Fa Boulder Redwood Fa Billon Dillon Laurel Omaha Valley Cit Cogden Forks Grand Coul Blairmore Falher Campbell F	10 854 782 1000 602 995 1118 1322 491 491 660 1371 19 1137 670 100 100 100 100 100 100 100 100 100 1
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John S. Bowker, Valparaiso, IN

QUIZ # 23

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?

950 1340 1480 1540

Here is a hint; it is one of these: Waterloo, Fort Worth, Philadelphia (The answer will appear at the end of the next City Quiz in DX News.) The enswer to City Quiz # 22: Oklahoma City

CORDOVA - A listener wrote radio station weather from the Cordova station. The Cordova way of broadcast much farther than 10 mated distance of 4,000 to 5,000 miles: Arother miles, so local fans could just as well phone. Finnish DKer also wrote KLAM that she picked up their signal, at about the same than 10 miles away — from Finland, to be exact.

as Nileksela, Hannu Nilleksela, a "DXer," or radio hobby

KLAM, 1450 AM, recently and said he was Times reprinted the letter Nilleksela, 36, of "full-heartedly enjoying the station's colorful Vantaa, Finland, sent to KLAM. He enclosed a way of broadcasting." The small, 500-watt cassette confirming the reception from an esti---via Rod O'Connor

ist who tries to pick up remote signals had set up a string of radio antennas at a relinder farm in Lapland. Using a specially modified receiv- Daby News staff writer Shells Toomey desiributes.

er, in early November he picked up a sevent the report from Sevoonge. minute broadcast of country music, news an

WDUN GA Gainesville

Tony Fitzherbert

356 Jackman Avenue Fairfield, CT 06430

Changes in programming status; reported by NRC members and others

Eric Bueneman, The M Street Journal, and your editor (who actually found some time to DX!) have teamed up to bring you this edition of Formats, as the often dynamic, and always exciting world of radio continues to come up with surprises. The biggest one here came on a phone call to the PD at WJBX (who was going to be a speaker at the middle school career day where the editor is PTA president) to arrange for a broadcast of the midday show from right outside the cafeteria (for engineering fees only!). Everything was set until this call... "Change of plans, Tony, the station has been sold". And, sad to say, this very fine oldies station will become a Spanish station for Bridgeport's substantial Hispanic population. Here is today's show...

- AC, LK (EB).

```
WFRB MD Frostburg
                             - CWM//FM (TF).
560
                             - Adds business news AM drives(M).
570
     WMCA
          NY New York
               Hanford
                             - Ethnic variety(M).
610
     KCLQ
           CA
                             - CWM//FM,24 hours(M).
           WA
     KHDI.
               Opportunity
630
                             - REL, mornings, Spanish PM (EB).
     KSTL
           MO
               St. Louis
690
                             - BBD, up for sale (EB).
     WEW
           MO
               St Louis
770
                             - Christian "Love 82" (TF).
820
     WGGM
           VA
               Chester
     WTAC
           МŦ
               Flint
                             - To be REL (M).
850
                                  - CWM (EB).
               Jefferson City
950
     KLIK
           MO
                             - Drops CWM for EZL(M).
           VA
               Richmond
950
     WXGI
                             - Classical music, moved from FM
           OR Portland
970
     KYTE
                             which is New Age (M).
                             - Adult standards. (M).
     KEAP
           CA Fresno
980
                             - Soon to be here from FM, Talk,
     WEVD NY New York
1050
                             Ethnic, Variety, Adult standards
                             - Now AC. CBS News (EB).
     WMGA GA Moultrie
1130
                             - Contemporary Christian (M).
     WSAO MS Senatoba
1140
                             - "Christian Radio", another former
1150
     WRUN
           NY Utica
                              rocker is lost, was once tops in
                             the Utica market!!!!(TF).
                             - Now Sun Network Talk (EB).
1150 WGOW
           TN Chattanooga
                              - Heard Jazz show in PM while
1220
     WGNY NY Newburgh
                              DX'ing, new format??(TF).
1230 WKHT CT Manchester
                              - Drops CWM for BRN Business
                              news(M).
                              - Spanish (M).
1230
     KOZA TX Odessa
                              - Spanish (M). So the Pasadena
     KPPC CA Pasadena
1240
                              Presbyterian Church has changed
                              formats??(TF).
                              - Now news/talk (EB).
     WTAX IL Springfield
1240
                                  - Adult standards (EB).
     KWOS
            MO Jefferson City
1240
                              - Ex-WORL, UC, now business news
            FL Eatonville
1270
     WBZS
                              - Was all Elvis, now silent (M).
            OR Portland
1290 KLVS
                              - SMN Kool Gold - oldies (M).
1300 KNYO
           CA Fresno
                              - ABC Talkradio 1900-0100,
1310
     WDOD
            TN Chattanooga
                              otherwise // FM / CWM (EB).
                              - Religion (M).
1320 WSCR PA Scranton
                              - Back on the air with Adult
            VA
               Richmond
1320
     WANI
                              Standards (M).
                              - AC, NBC Talknet, // FM 0600-1000
      WDEF
            TN Chattanooga
                              - BRN Business News for the
1380 WFLK CT Naugatuck
                              Naugatuck Valley (M).
                              - Black News/Talk (M).
1390 WGCI IL Chicago
                              - Silent, again (EB).
            GA Alphraretta
1400 WWXX
                              - Reported silent (M).
                Knoxville
      WEMG
            TN
1430
                              - Reported silent (M). I think that
      WORI
            TN
                Oak Ridge
1430
                              this is an error - two stations in
                              the same area?...or did they share
                              the frequency??(TF).
                              - Rock oldies (EB).
1450 WCVS IL Springfield
     WCLM VA Highland Springs - Back on the air w/ AC (M).
1450
                              - Sold, to be Spanish (TF).
      WJBX CT Bridgeport
1450
                              - Now ABC Talk (M).
      KYOS
           CA Merced
1480
```

- Oldies (M). 1480 KALV OK Alva - Rock oldies (EB). 1490 WDXB TN Chattanooga - SMN Heart and Soul (M). 1490 WPEX VA Hampton - CWM again ! (EB). Dallas WKRP GA 1500 New Smyrna Beach - Oldies (M). 1550 WCCZ FL- Nostalsia (EB). WCHU TN Soddy-Daisy 1550 - Spanish "La Favorita" (EB). Austell 1600 ROAW GA - As the call suggests, Adult WBBD WV Wheeling 1600 standards as of 2/15 (M).

All for this timeand good DX to all!!!

Musings

Mike and Sue Knitter P. O. Box 24

Cambridge, WI 53523-0024

of the Members Times are local per Muse.

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.

Dave Whatmough - 284 Main St. West - Hamilton, ON L8P 1J8

Even though not much DXing has been done I guess its time for a Musing so everyone will know I'm still around and semi-active at least. By the time you read this I will have celebrated my 50th birthday - Feb. 3rd to be exact. [1 anda 2 anda Happy Birthday to you....] Only one verie received this season mainly because I've only sent one report -KFNW-1200 v/l [verification letter] for 11/23 reception. A few new loggings - also 11/23 WFHR-1320 at 4:15PM. Two others on 1320 - WGET Gettysburg and after many tries WOBL Oberlin on 1/9 at 9:13AM. A surprise on 12/9 to find WDOT-1390 on top at 4:10PM. Locally - WRIE-1330 Erie seems to have bit the dust again silent now for nearly a month leaving WSPQ Springville audible here daytime and WHOT/WFBC at night. We now have a station in the area which has learned how to program some great music (format 1954 to 1963) -WGKT-1400 Buffalo ex WPHD/WYSL. All kinds of Rock and Roll obscurities doo-wop, etc. Unfortunately their signal in Hamilton leaves a little ot be desired with WLKK Erie so close as well. Not too much else to report except that I will not be making the NRC Convention in 1989 as I've just booked a 3 week trip to England and Ireland for the end of August. [You taking your van over?] I do however expect to be at the WTFDA Convention in Syracuse (or whatever it turns out to be). Things are getting quite busy now as tax time approaches so to all those I owe tapes, letters and bumper stickers, I haven't forgotten you and hope to be caught up in the next few weeks. 73's for now.

Paul Swearingen - 2840 SE Illinois Avenue - Topeka, KS 66605-1427

For what it's worth, Mike'n'Sue type up Musings received at Cambridge on an Apple IIGS and mail them on a 3.5" disc to me. I convert them from Appleworks to Microsoft Works on the Macintosh SE (at school), format them add my two cents worth, and then print them off on a LaserWriter II printer. It's much easier to handle Musings (and Wayne Heinen's Verie Signers) this way. Wayne, by the way, is working on a system to convert IBMformatted copy to Appleworks ... and if anyone in the club has any suggestions for converting any copy from one computer language to another, if only via ASCII, write to Wayne, Mike, or myself.

Also, if you are a column editor, let me know if you'd like any "copy" changes in your new standing column head ... and don't forget to submit copy in column widths of 7 3/4" to 8" ... the length is optional, but remember to leave at least 2" at the top of the first page, especially if you submit copy on 14" paper. Don't forget to make plans for Topeka DXCon '89, September 1, 2, 3, no matter what club(s) you may belong to. 73.

WNRC Scoped Airchecks - from the 1988 Convention

Recorded at the 1988 NRC convention in Milwaukee while the FM station was on the air for the weekend, the set of four C-90 tapes is available from the Publication Center for \$9.95. Featured are John Bowker, Joe Sorenson, Phil Wayne, and Bob Walker with their unique approach to broadcasting! Jingles and selections from the shows are included in the tapes, which are housed in their own book-like holder for storage. Rush \$9.95 in check or money order to the NRC Publication center - P. O. Box 164 -Mannsville, NY 13661, and be the first on YOUR block to own the complete set!

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