DX News

•Serving DX'ers since 1933•

Volume 62, No. 7 - November 21, 1994 (ISSN 0737-1659)

Inside....

CPC Test Calendar

KDDD	800	Nov. 21, 1994	0130-0200
WFRM	600	Nov. 21, 1994	0200-0230
WTRN	1340	Nov. 21, 1994	0200-0230
R. V. C.	535	Nov. 21, 1994	0200-0400
CJGX	940	Nov. 28, 1994	0100-0130
WMAM	570	Nov. 28, 1994	0100-0300
KFJM	1370	Nov. 28, 1994	0130-0200
WVKO	1580	Nov. 28, 1994	0130-0200
KDEX	1590	Dec. 3, 1994	0105-0130
KGTL	620	Dec. 3, 1994	0130-0200
KGTL	620	Dec. 3, 1994	0530-0630
WTRW	1590	Dec. 4, 1994	0530-0600
WHBY	1150	Dec. 5, 1994	0100-0200
KLTC	1460	Dec. 6, 1994	0230-0330
WERA	1590	Dec. 10, 1994	0430-0500
WEAQ	790	Dec. 12, 1994	0230-0300
WIBW	580	Dec. 19, 1994	0200-0230
HCJB	690	Dec. 24, 1994	0015-0045
KUAU	1570	Jan. 15, 1995	0501-0530

WTRW-1590 - 1414 16th St. - Two Rivers, WI 54241 will conduct a DX test on Sunday morning, December 4, between 5:30 and 6:00 am EST. The test will be run at 1000 watts and will include CID's and music (including one very identifiable song). Send reception reports to Mr. Mark Heller, Pres. Arranged by the National Radio Club CPC.

From the publisher ... After receiving complaints from some members, the NRC board of directors has decided to discontinue offering sale of the NRC membership list. The list, with complete addresses, had been available from the Publications Center, minus the names of those who had specifically requested not to be listed and individuals and publications with whom *DX News* had exchanged publications or services. In its place will be a modified list, by state/country, and including only names and cities, plus the state/province or country, for sale at $1.00 per copy from the Publication Center. Members of the board felt that the privacy of members could be violated if a list containing addresses of members continued to be disseminated. They suggested that those who wished to be contacted, or who wanted addresses of members in specific locations, state their needs in a Musing. Board chairman Ken Chatterton also said that he would forward letters to specific authors of articles as long as sufficient postage was included with the request.

Shawn Axelrod now says that the Canadian postal increase has been postponed (due to the Canadian post office "forgetting" to get Parliamentary approval).

SCADS (Southern California DX'ers) is hosting Ray Briem appreciation day on January 22, 1995 at Knott's Berry Farm from 12:00-4:00 pm. Briem, who is planning to retire in December, has often promoted the DX hobby on his late-night talk shows on KABC-790 and other stations around the country when his talk show was syndicated. Events scheduled include an appreciation meal; the cost to attend is $21.95. For more information, write to ASWLC/Brien - 16182 Ballad Lane - Huntington, Beach, CA 92649-2272.

Next week's DXN will either be very early or very late, depending upon when it comes off the press. We'll either mail it Wednesday or Monday evening.

E-mail Publication ... eCommAction DX Airwaves is offering "breaking frequency reception, news, and pirate/clandestine broadcasts with behind-the-scene facts in the form of an on-line electronic computerized magazine available by subscription". Other coverage runs the spectrum from interplanetary probes to earthquake monitoring. The cost per year is $29.95; write to DataPort - P.O. Box 3172 - Ygnacio Valley Station - Walnut Creek, CA 94598 for more information, or call James E. Tunnell at (800) 758-6303, code 227.

DX Time Machine

From the pages of *DX News*:

50 years ago ... from the November 18, 1944 DXN: Harold Wagner, N. Girard, PA, head Algiers-1176 on November 11 and 12. On the 12th at 7:30 pm, it was the strongest TA he had ever heard, "with the needle of the tuning meter on the Scott shoved against the peg" ... from November 25: Hank Wilkinson, Baltimore, MD, reported that Lyon, France-648 signed on at 1:20 am with the "Marseilles". Dick Cooper, Harold Wagner, and Newt McLeod also reported hearing this station.

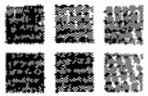
25 years ago ... from the November 15, 1969 DXN: The Newark News Radio Club scheduled a DX test from Anguilla 1505 for Dec. 22 ... Paul Gough wrote about two new receivers, the Heath GR-78 and the Drake SPR-4 ...

10 years ago ... from the November 19, 1984 DXN: Albert Lobel was collecting telephone numbers for the next NRC Log.

AM Switch

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

Status changes in AM stations, supplied by the FCC and listeners



WBRC

CALL LETTER CHANGES

	Old call:			New call:
670	WARO	VA	Claremont	WBVS*
900	WCLZ	ME	Brunswick	WKOL
1080	WDJX	KY	Louisville	WRES
1400	WYYR	SC	Spartanburg	WMMZ
1470	WHYM	PA	Portage	WZGO
1580	WIFE	IN	Connersville	WCNB

Note: WBVS-670 is an unbuilt CP granted back in 1989, new call request indicates this Richmond-area CP is still viable.

APPLICATIONS/GRANTS FOR NEW STATIONS
None

APPLICATIONS FROM EXISTING FACILITIES

1290	KLLF	TX	Wichita Falls. night power to 73 watts, antenna to U1

GRANTS TO EXISTING FACILITIES

790	WAEB	PA	Allentown: relocate day transmitter to night transmitter site
1010	KTUR	UT	Tooele: relocate transmitter site
1040	KEZF	OR	Tigard: relocate main studio to Sacramento, CA (???? That's what it says)
1560	WSQR	IL	Sycamore: add 176 watts nights, antenna to U1

OTHERNESS

730	WWTK	FL	Lake Placid: new station is ON THE AIR with syndicated talk format
1030	WQSE	TN	White Bluff: silent station is ON THE AIR
1060	WRHL	IL	Rochelle: night power (20 watts U3) is on
1070	WSCP	NY	Sandy Creek-Pulaski: station is SILENT
1130	WYXE	TN	Gallatin: silent station is ON THE AIR with 2300 (940 CH) D1 power, new transmitter site
1160	WMLD	GA	East Point: new station is ON THE AIR with adult-urban format (Atlanta metro)
1240	KNEM	MO	Nevada: power reduction to 500/500 is on from new transmitter site
1410	KQAM	KS	Wichita: now relays KFH-1330 Wichita
1450	KEZJ	ID	Twin Falls: College of Southern Idaho which holds the license for this silent station confirms that the call remains KEZJ (see Call Notes in Issue #2) indicating that 1310 has always been KLIX. CSI has set no date for KEZJ's return to the air
1450	WWKG	NC	Spring Lake: station is SILENT
1480	WJHB	NC	Fair Bluff: silent station is ON THE AIR
1590	WPWA	PA	Chester: this new call is already on the air so those catching the station as WAWA have a very rare one in their log. WPWA was, by the way, this station's very first call when it went on the air in the 1940's. (see Otherness in Issue #4)

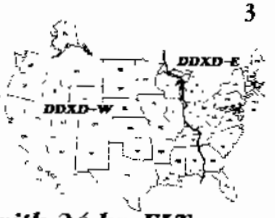
THANKS:
David Lewis, Dave Schmidt, Ed Krejny, Tom Bryant, Wayne Heinen, Alphonso Bedoya, Eric Mujibur and MSJ

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

DID YOU KNOW that some broadcasters as late as 1950 were using clocks synchronized by Western Union over telephone lines It was a frequent occurance to come up to the hour, crank up the network line for the news . and get nothing because your clock had gained 5 or 10 seconds (an eternity!) during the past hour!

Domestic DX Digest

West: Bill Hale MTFH12A@Prodigy.com
495 Creekview Drive - Meridian, ID 83642-3241
East: Dave Braun 73520,657@compuserve.com
11 Mill Bend Acres - Wyoming, DE 19934-9523



(Division line is between East and Central time zones)

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

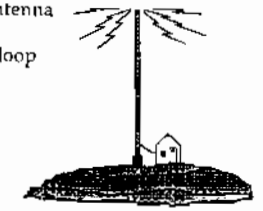
DDXD-W

MEDIUM WAVE RAMBLINGS

- Kansas City member **David Lewis** sends a copy of a letter he received from The College of Southern Idaho after his inquiry to them about the fate of KLIX's gift of the 1450 facility in Twin Falls. Dated February 24, 1994, the letter says that ". . . the station will remain silent until approval is gained from the Idaho State Board of Education and the Legislature for our Educational Communications Program". David also says, that since I'm an Idaho taxpayer, for me find out what's going on. And . . . **Atsushi Masamune** sends a copy of his KLIX verie, with a note from their CE explaining 1310 was always KLIX, and 1450 is silent as KEZJ. This is end of the KLIX/KEZJ controversy, unless **Elvis** says otherwise!
- **Jim** looked over the north horizon for new DX. Didn't get what he expected, but still caught some newbies. **John J.** cleaned up around 1340 while his local WLZR was off. And **Dennis** reports "nothing sooper-dooper", but sunset skip was good to him.

REPORTERS

JB-TX	**Jim Boehm San Antonio** ICF-2010 + free downspout antenna / Radio West Loop
JJR-WI	**John Rieger South Milwaukee** RF-2200, RF-2600, IC-R70, Kenwood R1000, Realistic DX-380, Superadio + Kowalski Loop
GS-TN	**George Smith Decherd, TN** Superadio III
AM-WA	**Atsushi Masamune Seattle** JRC-NRD-525 w/KIWA air core loop
AM-BC	**Atsushi Masamune Swartz Bay** ICF-7600D with rod antenna
TR-IL	**Thomas Reiser Chicago** ICF-2003 barefoot
BBMcC-TX	**B.B. McClurkan Irving** Kenwood R-2000 + Radio West loop
DE-MO	**Dennis Elya Jefferson City** Superadio III
JE-MN	**Jeff Ellis Maple Grove** GE SRIII & Select-A-Tenna
WH-CO	**Wayne Heinen Aurora**
Ed.-ID	**Editor Meridian**



SPECIAL

730	**KBSU**	**ID Boise - 11/7** - The CE of this station says they will be on their U4 15000/500 facilities by December 1. In Stereo We'll see. **[Ed.-ID]**
1090	**KING**	**WA Seattle - 11/1 0055-0330** - As of November 1st, **they still announce their call letters as KING.** AP News format. ID as *This is Seattle's only 24-hour news source. The news station, King 1090, K-I-N-G, Seattle.* **(AM-WA)**
1480	**KTMA**	**CA Eureka - 10/30 2041-2059** - Good, over KRXR Gooding, ID. Now The Team sports radio with sports news three times every hour. ID at 2055 as *Tune to the sports news 24 hours a day, 7 days a week, KTMA, Eureka 1480* Ex: KRED. **CL and format change. (AM-WA)**
1600	**KWTX**	**CO Lakewood - Is running 5 kw days only.** Current sign-on is LSR here. **No reduced power operation at night.** This is the result of the vandals who toppled one of their 5 tower DA system. **(WH-CO)**

DX AND EQUIPMENT TESTS

1180	**KOIL+**	**NE Omaha - 10/31 0100-0151** - Heard over/under WHAM and a Cuban(?). In-depth report sent. **(DE-MO)**
1180	**KOIL-**	**NE Omaha - 10/31 0100** - Not heard. Blocked by WHAM. **(TR-IL)**
1320	**WGET-**	**PA Gettysburg - 10/29 0030-0100** - Not heard. Only WJAS above many others. **(DE-MO)**

TIS & OTHER STUFF

1260 WxRadio **BC Swartz Bay - 10/7 1245-1300** - Good, with ID as *This is Weather Radio Canada, CSA 240 and CBIZ broadcasting continuously from the Victoria office . . .* Weather forecast including Seattle, Tacoma and vicinity. Also audible through local cable company. **(AM-BC)**

MIDNIGHT TO 0800 HOURS ELT

850 KOA **CO Denver - 10/26 0730** - Clear, with news and sports. Big local news . . . sod is being applied to a football field. Then ads for insurance and a financial planner. Faded at **0645. (GS-TN)**

900 WEAS **GA Savannah - 10/30 0306** - After listening to sports talk and news, heard VID. Weak and alone. **(DE-MO)**

920 KYFR **IA Shenandoah - 10/29 0517-0531** - With KLUP splash partially nulled. With Gospel music and Larry Millican the host of Family Radio. Male DJ at **0530** *This is KYFR Shenandoah, Iowa, 920 on your dial.* Usually difficult under KARN, but dominant this time. **(JB-TX)**

1210 KOKK **SD Huron - 10/29 0056** - Heard sign-off, mentioning 5kw days, 1 kw nights. Above Philadelphia and Guymon. **(DE-MO)**

1230 KSST **TX Sulphur Springs - 10/31 0730** - *Good morning everybody, it's six-thirty a,d 64 degrees. This is KSST Sulphur Springs. Stay tuned. Bob Phillips, Texas* (Chapter?) *reporter is next sponsored by Norman Feeds and Smith Pharmacy.* Seldom heard due to KERV and KWTX. **(JB-TX)**

1320 WJAS **PA Pittsburgh - 10/29 0044** - With *1320 WJAS Remembers*, then into NOS. Heard while trying for the WGET test. Above a sea of others. **(DE-MO)**

1330 WFIN **OH Findlay - 10/25 0641** - Poor, with local news by female announcer. New. **(JJR-WI)**

1540 CHIN **ON Toronto - 10/24 0301** - Poor, with much QRM. Call-in show with the O.J. Simpson case as topic. Then hockey talk. Heard several IDs, both CLs and the word "Chin". **(GS-TN)**

0800 TO 1600 HOURS ELT

1130 WISN **WI Milwaukee - 10/29 0937** - With local home improvement show: *Good morning, you're on WISN.* Above KAAB. No KWKH! **(DE-MO)**

1180 WLDS **IL Jacksonville - 10/31 0739** - Ad for Illinois Power, followed by weather. **(JE-MN)**

1210 KOKK **SD Huron - 10/27 0951** - With C&W music, calls and local ads. New. **(JJR-WI)**

1340 KVBR **MN Brainerd - 10/27** - Poor, with many local mentions, and ID into ABC News at **1000**. New. **(JJR-WI)**

KROC **MN Rochester - 10/27 1007** - Poor, with local talk show. WLZR off. **(JJR-WI)**

KWLM **MN Willmar - 10/27 1005** - Poor, out of news. New. **(JJR-WI)**

1350 KCMP **MN Pine City - 10/27 1025** - With Birthday Club and local ads. Over WIOU. New, for station number 2055! **(JJR-WI)**

1600 TO 2400 HOURS ELT

680 WPTF **NC Raleigh - 10/25 2258** - Poor, with call-in show discussing fraudulent business deals. Ad for Aluminum Company of North carolina. Can someone tell me why I have very little luck in that direction (east). Is everything directed north? **(DS-TN)** [By no means. Terrain and ground conductivity play a big part of your ability to hear DX in the daytime. But at night, the sky's the limit (a little pun there). Other DXers in your general area have made many "easterly" catches. Try tacking an external antenna to that Superadio III. We'll reserve lots of space for your ensuing reports! - Ed.]

850 WYDE **AL Birmingham - 10/29 2000** - With CBS News, VID, then Bruce Williams on Talknet. Slightly below KOA. **(DE-MO)**

KFUO **MO Clayton - 10/28 2000** - Caught this one with a full-data sign-off, then *The peace of the Lord be with you all.* **(DS-TN)**

930 WSLI **MS Jackson - 10/25 1835** - With ID and sports, discussing Mississippi football. **(BBMcC-TX)**

940 KIOA **IA Des Moines - 10/25 1931** - With ID and mention of a giveaway program in the morning. **(BBMcC-TX)**

950 WSPA **SC Spartanburg - 10/16 2255** - Heard ID and recognized Pat Buchanan's voice, but could not determine if he was host or a guest of the talk show. Real poor. **(GS-TN)**

1030 WXSS **TN Memphis - 10/29 1951** - Ad for *Memphis In The Black* program and slogan *Praise 1030.* VID. Above 2 or 3 others. **(DE-MO)**

1180 WHAM **NY Rochester - 10/25 1905** - Fair, with ad for a mutual fund company, then sports talk. **(GS-TN)**

1450 KNET **TX Palestine - 10/30 1705-1732** - With KCTI nulled and a 2nd carrier with brief audible, but unintelligible audio to 1728, with last few bars of a vocal, then male DJ with *KNET, Palestine. The station with ?? ??.* Brief music, then carrier only. New. **(JB-TX)**

1510 WAUK **WI Waukesha - 10/29 1847** - With C&W music (Gatlin Brothers), VID. Under WLAC, but didn't last long (SSS). **(DE-MO)**

1520 KOMA **OK Oklahoma City - 10/23 1751** - Fair, with ID, then *Dallas Cowboys Network* and into call-in sports. **(GS-TN)**

DDXD-E

NEWS AND VIEWS

For those of you who submitted reports for the RVC-535 test, I forwarded them to *IDXD*. They should show up there in the same issue as your test report for that week shows up here.

From Robert Tiara: "Verie back from KA2XAU test, power stated as 250 watts. Amazing what a "clear channel" can do for reception. Remember the Aussies on 1629 kHz a few years back? They were logged here on very low power, too."

David Yocis says "The antenna came down 10/24 and I haven't had a chance to put it back up. The R-71A is pretty useless on MW without a good outside antenna, so it's been all on the Superadio." But he still managed to get some logs!

If you want your address (regular mail or e-mail) included in the list of contributors, please let me know with each submittal.

SPECIAL

810 WYRE **MD Annapolis** – Is now NOS. Thought I had read this somewhere, but it hasn't shown up in my *Log* yet. (DB–DE)

1240 WBAX **PA Wilkes-Barre – 10/29 2339** – Barely audible above the din with "WEJL–630 and WBAX–1240" IDs. This has been very weak to non–existent the last couple of days. (HJH–PA)

1510 WSSH **MA Boston** - Back to Spanish programming since 10/24, heard with EE, SS IDs **10/24 1803**. (DY-CT)

1520 WJMP **OH Kent – 10/15 1843** – Poor in nulled WKBW with contest promo for "All oldies WJMP", giving station address in Akron. (MB*ON)

DX TESTS

960 WPMR **PA Mount Pocono – 10/17 0030–0100** – Code ID at 0041 fair–poor under WFIR. (WPT–DC) (Bill, you sure this wasn't *Radio Reloj*? – db) ...Not heard. (DT–JAM)

1130 KSDO **CA San Diego – 10/31 0300–0330** – No sign of them, just WBBR and/or KWKH. (RT–NC)

1150 WGEA **AL Geneva – 10/24 0100–0130** – Not heard, just WMET. (WPT–DC)

1160 WPIE **NY Trumansburg – 10/24 0200–0230** – Just barely made it on code IDs. Heavy QRM from WJJD, WOBM and others. (H11–MD3) ...WJJD dominant, not a peep from WPIE Did this test run? Station is in Finger Lakes region, 10 miles northwest of Cornell University and is 5 kw. (WPT–DC) (Judging from the reports, I'd say their signal goes west – db)

1180 KOIL **NE Bellevue – 10/31 0100–0130** – Fair with code IDs, tones, march music and other music One voice ID at end at 0136. Didn't hear first code ID until 0110. Audio appeared to be stronger after 0114. Must have used dual powers. QRM from WHAM and/or *Radio Taino*. (RT–NC) ...Nothing heard, just WHAM and SS. (DB–DE)

1200 WBZY **PA New Castle – 10/25 0000–0030** – Poor under WCHB, CFGO, etc., with code ID, voice ID at 0009 "This is 1200 WBZY New Castle, Pennsylvania conducting equipment tests". Not needed, heard semi–regularly on SSS. (MB–ON) ...Code IDs made the difference for verifiable details. Voice IDs also noted...barely Heard mention of "National Radio Club" and voice ID for "WBZY". Only music selection noted was Gene Pitney's *Town Without Pity*. Overall, a poor signal with QRM from

stations with Gospel, rock, and talk formats, plus a SS station. (MH–NC) ...Pretty good on code IDs, poor–fair on voice. Quite a bit of QRM from WAGE. (HH–MD3) ...Code ID at 0008, voice ID "WBZY New Castle, Pennsylvania conducting tests" by male CE. 50's oldies tune at 0013, excellent. (WPT–DC)

1210 WILY **IL Centralia – 10/17 0100–0130** – Not heard, WGMP dominant. (WPT–DC) ...Only WGMP. (DT–JAM)

1280 WNAM **WI Neenah–Menasha – 10/24 0300–0330** – 1000 Hz tone at 0302 fair under WKST and WADO. I heard this station on a Zenith Royal 500 set (single band; no FM) in the late 50's (WPT–DC)

1290 KKAR **NE Omaha – 10/3 0100–0130** – No show, WFBG rules roost. (WPT–DC)

1300 WZZZ **NY Fulton – 10/10 0500–0530** – Not heard by reason of WJFK dominance. (WPT–DC) ...No sign, but did get PJD–2 (see *IDXD*) and UNID EE. (DT–JAM)

1320 WGET **PA Gettysburg – 10/29 0030–0100** – VERY weak with code IDs and short bursts of tone. QRM from a stronger than normal WJAS and WJGR (I needed this for call change – ex–WQIK). New. (RT–NC)

1590 KWEY **OK Weatherford – 10/3 0500–0530** – No show, too much WAKR. (WPT–DC)

1600 KBOR **TX Brownsville – 10/9 0430–0500** – Not heard. (WPT–DC) ...Not heard, only pest WPOM and WOKB. (DT–JAM)

1620 KA2XAU **PA Richland – 10/10 0200–0230** – Very good and alone on frequency. Voice IDs alternating between male and female announcer "This is experimental station KA2XAU conducting transmitter tests on 1620 kiloHertz...", many code IDs. Verie letter received in only 15 days. (MB–ON) ...Strong!! 100 percent on voice and code. (HH–MD2) ...Voice ID by man and woman 0217–0230, code ID, excellent, bombing in local–like. (WPT–DC) ...Came through with voice and code at 0217, man and woman announcers taking turns, were still on at 0243, fair. (DT–JAM)

UNID AND UNID HELP

1300 UNID **10/10 0401–0430** – While trying for WZZZ, talk show *Uncle Dougie Show* and *USA News*, poor over/under PJD–2. No "reasonable" formats in *Log* for this, any ideas? (DT–JAM)

1490 UNID **WJR?** – Checked *NRC Log*, has a station in Bradenton, FL – WJRB, but it is listed as silent. Is it on? The ID came out of the mud one morning as "AM 1490 WJR?", I lost the date! (RH–ON)

0000 to 0800 ELT

720 WMXY **GA Hogansville – 10/26 0650** – Noted while logging WWII, at 0650 suddenly came on with sign-OFF announcement "...720 WMXY Hogansville-LaGrange now concludes another day of broadcasting activity..." Finished annoucement and off. Not noted after that or after 0700. Tentatively logged **10\25 0705-0730** fade, but no ID. WGN QRM as well as WWII. Poor. (MH–NC)

WWII **PA Shiremanstown – 10/26 0627-0700** – Noted while looking for WMXY. Mostly morning drive talk, but some gospel music. Annoucements for "Love 7-20 AM," and "WW 2". "Shiremanstown-Harrisburg" ID at 0700 into *One Heart Network News*. Poor/fair at 0627, peaked at 0645 (good level), and rapidly began fading, though still fair/poor at 0700 with QSB increasing. WGN QRM and (most WELCOME!) QRM from WMXY. (MH–NC)

740 WLWI **AL Montgomery – 10/16 2317–2330** – Sports talk show, lots of local ads including *Alabama Forestry Association*, poor with UNID interference. (DT–JAM)

880 WMEQ **WI Menomonie – 10/12 0716** – Good, creaming WCBS with CW song, ID as "AM 880 WMEQ, it's 16 after 6" into local news, promo for *Radio Home Shopping* program "Saturday mornings on WMEQ". (MB–ON)

990 WZZD **PA Philadelphia – 10/14 1925–1953** – REL talk show, some music, ad with "215" area code gave clue to location, poor under WHOO, WEEB. (DT–JAM)

1160 WOBM **NJ Lakewood Township – 10/7 0335–0346** – OLD, ID as "...WOBM...oldies and memories station", poor, interference from WJJD. (DT–JAM)

1200 WOAI **TX San Antonio – 10/29 0230** – Fair, *CBS News* into a sports call-in show, ID "WOAI news radio". First new Texan in years. (JH–NJ)

WAGE **VA Leesburg – 10/28 0400** – Good, news, PSAs, ad for *Eveready Batteries* into *Jim Bohannon*. ID "AM 1200 WAGE, Loudon County, your news choice". New. (JH–NJ)

1240 WSKI **VT Montpelier – 10/29 0014** – Good signal with *Jay's Diner* oldies program. ID as "Central Vermont's classic oldies station", WBAX off. (HJH–PA) (New *Log* shows them signing–off at 0002 – db)

1310 WMTG **MI Dearborn – 10/15 0636** – Good over CIWW with ID as "Motown Oldies 1310 WMTG" into song by the Supremes. Note that CIWW uses the slogan "Oldies 1310". (MB*ON)

1320 WJGR **FL Jacksonville – 10/29 0029** – New logging with these call letters, ex–WQIK, with talk while waiting for WGET test. Not noted when longwire connected to R–5000, booming in when antenna disconnected...strange but true. (RT–NC)

1510 WSSH **MA Boston – 10/15 0623** – Poor under WLAC, sign–on mentioning address in Woburn, ending announcement with "WSSH is an equal opportunity employer". (MB*ON)

1550 WARD **PA Pittston – 10/15 0706** – Fair in CBE null with promo for *WARD Shop–By–Phone Club*, local weather. (MB*ON)

1570 WYTI **VA Rocky Mount – 10/15 0640** – Poor in mess with local weather, ad for *Franklin County Health Care Center* (rentals of medical supplies, oxygen, etc.) (MB*ON)

1580 WONZ **NJ Hammonton – 10/15 0700** – Fair with ID as "WONZ Hammonton, news you want to know, when you want to know it". Heard as WRDI in 1977. (MB*ON)

1600 WOKB **FL Winter Garden – 10/10 0008–0020** – GOS in FF, ID in part as "...WOKB", two men talking in FF or Creole, over/under WPOM. (DT–JAM)

WBAV **NC Charlotte – 10/9 0325–0400** – OLD, ID in part as "WBAV–AM and W?FM, part of the ?? group", poor, over/under WPOM. (DT–JAM)

1600 TO 2400 ELT

780 WABS **VA Arlington – 10/14 1817** – Good over WBBM with local weather into *Freedom Under Fire* commentarey about teaching homosexuality in schools (the usual right wing...) (MB*ON)

790 WTAR **VA Norfolk – 10/15 1945** – Fair over CIGM with "WTAR" ID during break in the action during *Hampton Roads Admirals vs. Johnstown Chiefs* hockey game. (MB*ON)

840 WCTG **SC Columbia – 10/25 1845** – End of religious program, mention of Christians by woman then abrupt sign–off without SSB. Fair–good. (WPT–DC)

1000 WLNL **NY Horseheads - 10/28 1824-1832** – Request for donations, sign–off with sung *Lord's Prayer*, ID. (DY-CT)

1110 WUHN **MA Pittsfield – 10/29 1805** – Very strong with oldies, ID as "The original – WUHN". (HJH–PA)

1150 CJRC **PQ Gatineau - 10/31 1845** – ID, news in FF, ads fair–good. (DY-CT)

1230 WBVP **PA Beaver Falls – 10/29 2359** – Ending news report about *Pennsylvania Turnpike* workers then into *ABC News*. Fair signal with others. (HJH–PA)

1240 WCEM **MD Cambridge – 10/28 2255** – *Bluegrass music* promo and invitation to stop by studios in Cambridge to pick up something. WBAX off. (HJH–PA)

1310 WORC **MA Worcester – 10/29 1847** – With progressive rock and message about regulations for picking up concert tickets at the station. ID as "Worcester Radio 1310 WORC", rarely heard. (HJH–PA)

1320 WLEE **VA Richmond – 10/30 1718** – Strong and alone with weather report then back into *Money Talk* program. (HJH–PA)

1420 WACK **NY Newark – 10/15 1831** – ID as "1420 WACK Newark and Rochester" during *Alabama vs. Tennessee* football game. Good with no slop from CJCL–1430 as there would be in Toronto. (MB*ON)

1440 WJJL **NY Niagara Falls – 10/22 1845** – ID and promo for *WKBW TV News* simulcast. At 1900 a promo for a Bible program on Sundays. New one here. (HJH–PA)

WRRO **OH Warren – 10/14 1843** – Good with ad for *Greenwood Dodge of Cortland*, "WRRO official three day forecast" local weather. Heard as WHHH in 1977. (MB*ON)

1530 WSAI **OH Cincinnati – 10/20 1915** – Oldies, ID by man, excellent. Ex–WCKY. Did WCKY go to 1360? (WPT–DC) (They went to 550, 1360 is now WAOZ, kids – db)

1570 WPGM **VA Danville – 10/15 1806** – Fair with local weather, ID as "61 degrees at WPGM" into *Adventures in Odyssey* religious program. (MB*ON)

WRJQ **WI Appleton – 10/17 1821** – Poor in mess, surfaced with ID as "5:21 with the big band sound of WRJQ" into polka music. Heard as WVMS in 1980. (MB–ON)

1580 WONZ **NJ Hammonton – 11/2 1707** – Dominating with local call–in show on happenings in Atlantic City, IDed by //WOND–1400 and local talk. First time heard here since WTYO days. (DB–DE)

WDAB **SC Travelers Rest – 10/29 1856–1900** – Good over/under CBJ with *CNN Headline News* followed by local ads and ID. Heard on car radio in Concord, MA (MD–MA)

OTHER STUFF

1610 WPED444 MD Cambridge – 9/29 1817–1822 – Atop channel as usual but no longer with KFB55 calls *Maryland Department of Transportation*. (HH–MD1)

1610 WNQA290 MD Easton – 10/28 1313–1335 – Very difficult through WPED444 – Cambridge. Easton is right across the Bay – 23 miles. Took loop to pull it in. (HH–MD3)

1610 WTAN997 RE: LK–ON's UNID in the 10/31 *DXN*, I suspect that the correct callsign is WPAN997. I checked through my TIS database, and have no listing for a "WTAN997," or "WTAN " The only "997" suffix is attached to WPAN. These calls are assigned to the *New York State Thruway Authority*. (MH–NC)

1620 UNID 10/24-25 2340-0005 – Mostly over the *Connecticut Department of Transportation* station, *Riders on the Storm* by The Doors noted. Also, bells or chimes(?) noted near top of hour, but no ID or any talk noted. Seemed to loop in basically the same direction as the *Connecticut Department of Transportation* station, but over the TIS. What? Who? (MH–NC)

REPORTERS

MB–ON Mike Brooker, Toronto, ON: Panasonic RF–2200, Panasonic RFB–45
MB*ON Mike Brooker, DXing in Orangeville, ON: Panasonic RF–2200, Panasonic RFB–45
MD–MA Marc DeLorenzo, Framingham, MA: Clarion car radio
JH–NJ John Hanz, Old Bridge, NJ: NRD–525, attic longwire
MH–NC Mike Hardester, mike_hardester@zapbbs.win.net, Jacksonville, NC: ICOM R-70, Radio West 22" ferrite loop
HJH–PA Harry Hayes, Wilkes–Barre, PA: GE Superadio, Superloop
HH–MD1 Hank Holbrook, Dunkirk, MD: SP–600, 120' random wire
HH–MD2 Hank Holbrook, Dunkirk, MD: R–390A/URR, 120' random wire
HH–MD3 Hank Holbrook, Dunkirk, MD: SP–600, Colegrove loop
RH–ON Russ Horton, Mississauga, ON:
RT–NC Robert J. Tiara, Hendersonville, NC: R–5000, 24" amplified loop, many longwires
WPT–DC Bill Townshend, Washington, DC: Sony ICF–2010
DT–JAM Don Trelford, St. Anns Bay, Jamaica:
DY-CT David Yocis, Darien CT: GE Superadio III
DB–DE Dave Braun, Wyoming, DE: R–5000, Quantum loop

International DX Digest

Jim Renfrew JimRenfrew@AOL.com
61 Wilcox Street
Rochester, NY 14607-3832

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

We have a great TP section this week, in response the plea in Issue #5. Thanks, folks! Scott Fybush reports for the first time, and what an antenna he's got! Welcome, Scott. No time for DXing here at IDXD HQ. The usual deadline is Sunday, no guarantee that stuff received later will beat the deadline.

J.m

TRANS-PACIFIC DX

693 JAPAN JOAB Tokyo, NOV 2 1417 - Fair with language lesson. WRTH says Korean at this time. [Woods-OR]

774 JAPAN JOUB Akita, NOV 3 1407 - Very good with slow vocal music. Fair on ICF-2010 on its internal antenna. [Woods-OR]

828 JAPAN JOBB Osaka, OCT 28 1255 - with alternating man and woman in JJ, good signals. [Helms-CA]

855 AUSTRALIA 4QB Maryborough/4QO Eidsvold, NOV 2 1450-1500 - Fair with sixties music (Humperdinck). ID on the hour (which I didn't need), into ABC news. These stations are in synch less than 100 miles apart. 4QB is on the coast and most likely the one heard. [Woods-OR]

873 JAPAN JOGB Kumamoto, OCT 28 1306 - Man speaking in JJ, // to 774. [Helms- CA] NOV 3 1426 - Fair to good with Chinese language lesson, // 774. [Woods- OR]

891t FIJI, NOV 2 1504 - Fair with man speaking native language. [Woods-OR]

1017t TONGA A3Z, OCT 19 1050 - Good island music, gone at 1055 abruptly as if a sign-off. OCT 22 0910 - Poor, man in ?? language coming in and out. New, if so. 1050 UTC is after WRTH scheduled sign-off, but you never know, cannot figure out who else it is. [Axelrod-MB]

1017 JAPAN JOLB Fukuoka, NOV 3 1443 - Fair with language lesson // 774 and 693. [Woods-OR]

1053 NORTH KOREA, OCT 27 1256 - "Space Patrol" jammer at good level. [Helms-CA] UNIDENTIFIED

819 UNID OCT 30 1324 - Maybe my all-time mondo weirdo logging! 820 completely empty, signal suddenly appears 1 kHz lower; is some sort of drumming and a vocal chorus that sounds vaguely country and western in unID lang, woman with announcement in lang 1325, and then carrier abruptly off, leaving channel open. Don't ask me to even guess at this one! [Helms-CA]

Harry speaks: "The TP season is over for until spring, as the sun now rises before I get out of bed. Not too bad. . . much better signals than last fall."

TRANS-ATLANTIC DX

549 ALGERIA Les Trembles, NOV 4 0007 - man in AA; fair at first, then up to good level when I kicked the regenerative preamp in to slice it away from the CFNB / WICE slop. [Connelly-MA]

585 SPAIN Madrid, NOV 7 0520 - SS news; very good, well over a low-pitched growl. [Connelly-MA]

612 MOROCCO Sebaa-Aioun, NOV 4 0012 - female AA vocal; poor with WGIR phased. NOV 7 0523 - male AA Koran vocal; loud, chewing up the Limbaugh show on adjacent WGIR-610. [Connelly-MA]

621 CANARY ISLANDS Santa Cruz de Tenerife, NOV 3 2305 - SS news by man & woman; fair. NOV 4 0506 - SS news by man & woman; LOUD. NOV 7 0524 - fast SS talk; good over others. [Connelly-MA]

639 SPAIN La Coruna, NOV 4 2357 - SS talk // 774; poor to fair. NOV 7 0526 - man & woman in SS // 621; over others. [Connelly-MA]

711 MOROCCO Sebaa-Aioun, NOV 5 0005 - female AA vocal; fair. [Connelly-MA]

711.04a MOROCCO (t), NOV 7 0529 - AA talk by man; freq. slightly on high side of channel. [Connelly-MA]

747 CANARY ISLANDS // SPAIN, NOV 5 0548 - muffled SS talk over others. NOV 7 0530 - SS talk by man; over others. [Connelly-MA]

756 SPAIN Bilbao, NOV 5 0548 - folk group vocal, fast SS talk by man, then '70s US soul music. [Connelly-MA]

774 SPAIN synchros., NOV 3 2315 - SS talk to fair peaks over others. NOV 4 2357 - SS talk // 639; fair o/ others. NOV 5 0545 - excellent with opera. NOV 7 0530 - SS talk & interspersed music. [Connelly-MA]

792 SPAIN Sevilla, NOV 5 0543 - folk guitar music, SS talk; excellent. [Connelly-MA]

819t MOROCCO Rabat, OCT 30 2016 - EE commentary on Clinton and Middle East policy, slant sounded like an Arab country but this EE is not listed in WRTH. Faded just after 2022, back at 2025 but now in FF with new and talk mentioning the Magreb often; no ID! Over an AA stn, SIO 242 [Burnell-NF]

828 MOROCCO (t), NOV 5 2250 - man in AA over bad jamming-like growl. [Connelly-MA]

837 CANARY ISLANDS // SPAIN, NOV 4 0500 - pips, long musical interlude, then man in SS; good over Azores. NOV 5 0541 - fast SS talk; loud. [Connelly-MA]

837 AZORES Barossa, NOV 4 0503 - PP talk by man & woman with reverb came up and buried Canary Islands. Big signal! [Connelly-MA]

855 SPAIN Murcia et al., NOV 4 0457 - SS romantic vocal music; good. NOV 5 0554 - opera // 774; fair to good. [Connelly-MA]

882 CANARY ISLANDS La Laguna, NOV 2 0443 - man in SS; loud, no problem from 880. NOV 7 0532 - SS talk; dominant. [Connelly-MA]

891 ALGERIA Algiers, OCT 20 0428 - very strong with chanting in AA. Listened for the better part of a half hour. This will be the last logging in these parts, I think, thanks to WBMA! [Fybush-MA] NOV 2 0455 - AA talk; good. NOV 3 2322 - male AA vocal; loud, destroying 20-mile distant WBMA-890. NOV 4 0015 - woman & man in AA; to good peak over slight WBMA/WLS slop. NOV 5 2300 - female AA vocal & violins, then AA talk by man; huge S9+30, smoking WBMA even without phasing. Phasing the slight QRM gave entertainment-quality reception. [Connelly-MA]

907.8 likely GAMBIA R. Syd, Banjul OCT 30 2031 - Woman in unID lang, but man in EE a minute later, African music, 2101 very weak with news in unID lang, clear mentioning "Gambia" at 2112. Signal still there at 2128 recheck. Deep fades, horrible splatter from 909, SIO 232-1 [Burnell-NF]

909 BOTSWANA VOA Relay, OCT 30 2107 - EE news, program about substance abuse; // Sao Tome on 1530. Over/under unID AA stn, but VOA peaked to SIO 333. Pleased to finally hear this one, new country! [Burnell-NF]

918 SPAIN Madrid, NOV 7 0535 - SS discussion with very punchy audio that blasted through the strong CJCH slop. [Connelly-MA]

954 SPAIN Madrid, NOV 2 0456 - man in SS; fair. NOV 3 0440 - SS talk; fair to good. NOV 4 0452 - SS talk to good peaks. NOV 5 0558 - man & woman in SS, apparent advertisements; LOUD, easy listening with R8 in 4 kHz bandwidth. [Connelly-MA]

981 ALGERIA Algiers, NOV 7 0538 - Koran-type AA a cappella vocal; blockbuster signal hitting S9+40 peaks, usually better than adjacent WTRY/CBV - 980. A station (probably Portugal), with fast talk by a woman, was audible way in the background. [Connelly-MA]

999 SPAIN Madrid, NOV 2 0458 - SS talk, R. Espana mention; good. NOV 3 0438 - SS talk; poor. NOV 5 0559 - fast SS talk by man; fair, over QRM from CKBW's C&W music. [Connelly-MA]

1008 CANARY ISLANDS // SPAIN, NOV 5 0600 - SS talk, pips, music; fair. NOV 7 0540 - news by man in SS; loud, only a bit weaker than adjacent WINS/CFRB - 1010. [Connelly-MA]

1044 MOROCCO Sebaa-Aioun, NOV 3 2339 - AA vocal; fair through slop. NOV 7 0542 - folkish vocal; atop Spain. [Connelly-MA]

1044 SPAIN San Sebastian, NOV 4 0450 - news by man in SS; fair to good. [Connelly-MA]

1053 MOROCCO Tanger, NOV 3 2337 - AA vocal; as usual a big carrier with rather light audio. [Connelly-MA]

1098 CANARY ISLANDS // SPAIN, NOV 2 0500 - growl, bits of SS talk; messy. [Connelly-MA]

1107 SPAIN, NOV 2 0502 - SS talk mentioning "El Presidente". NOV 4 0449 - SS talk; poor to fair in slop. [Connelly-MA]

1134 SPAIN, NOV 2 0433 - SS talk, in WBBR slop. [Connelly-MA] 1152 SPAIN, NOV 3 2348 - bits of fast SS talk, just barely getting by WMEX- 1150. [Connelly-MA]

1179 CANARY ISLANDS // SPAIN, NOV 4 0443 - SER SS monotone-delivery news by man; fair in Cuba-1180 slop with WHAM phased. [Connelly-MA]

1197 MOROCCO (t), NOV 4 0035 - bits of AA-sounding vocal; poor. [Connelly-MA]

1375 ST. PIERRE & MIQUELON, NOV 5 0631 - good with FF teletalk about working on cars. Was // Guadeloupe-640. [Connelly-MA]

1503 AZORES AFRTS, Lajes OCT 30 2050 - Redskins football play-by-play. SIO 243 [Burnell-NF]

PAN-AMERICAN DX

535 Turks and Caicos, Radio Vision Cristiana, OCT 27 1024 - Fair, noted with SS religious music right on frequency. [Axelrod-MB] OCT 31 0200-0245 - Loud and clear, semi-regular here. Listened first 45 minutes of scheduled test, didn't hear any tones nor code, just regular programming in SS. [Hanz-NJ] OCT 31 0200-0400 - Very good with no sign of special programming. Apparently this one didn't air. Tape sent anyway. Unneeded but I need it verified. [Tiara-NC]

555 UNID, OCT 22 0251 - Good, het only, no audio, lots of KFYR splatter. [Axelrod-MB]

555 ST. KITTS Basseterre ZIZ, NOV 2 0449 - reggae vocal. NOV 3 2304 - BBC news // 5975. [Connelly-MA]

600 BRAZIL R. Gaucha (ZYK278), Porto Alegre OCT 31 0127 - PP talk, found apparent // 6020 (which was very poor under R. Nederland). SIO 232 [Burnell- NF]

610 TRINIDAD National Broadcasting Svc., Port of Spain OCT 31 0137 - Hindi music, few anmts. SIO 332 [Burnell-NF]

630 PUERTO RICO La Super Cadena (WSKN), San Juan OCT 31 0140 - SS talk about politics, jingle ID at 0200, then panel discussion about politics again. SIO 232 [Burnell-NF]

640 GUADELOUPE Arnouville, NOV 3 2227 - // 1375 ST PIERRE & MIQUELON, good with FF talk and music. [Beaton-MA] NOV 5 0631 - good with FF teletalk about working on cars. Was // St. Pierre-1375. [Connelly-MA]

640 CUBA, NOV 2 0451 - man in SS with Cuban news, over others. [Connelly-MA] NOV 4 0055 - Fair with jazz concert in SS. [Reiser-IL]

720 UNID, OCT 21 0250 - Poor, lively SS music, whistle or flute with 6-7 noted repeated twice between songs or talk but could not get ID, but was "Radio ..." and a town seemed to end "...aribo"? I hope somebody can help me out on this one. I'm not sure it was Mexico, if it is Venezuela it would be a new one. [Axelrod-MB]

730 MEXICO XEX Mexico City DF, OCT 27 1018 - Good with two men talking in SS about Mexico. [Axelrod-MB] NOV 4 0144 - Poor, SS, what sounded like a childrens product ad. [Reiser-IL]

730t TRINIDAD Trinidad BC, Port of Spain OCT 31 0204 - Very poor with BBC WS news (// 7325). Mixing with SS stn, SIO 222-1 [Burnell-NF]

760 COLOMBIA RCN (HJAJ), Barranquilla OCT 31 0308 - Colombian election results // 770. Many stations in SS on this frequency but only this one ID'ed, SIO 322 [Burnell-NF] NOV 3 0050 - Political talk between several SS men, RCN IDs, Columbia mentions and 4 pips at top of hour into news; // 770. [Beaton-MA]

770 URUGUAY R. Oriental (CX12), Montevideo OCT 31 0045 - Interviews of people on the street during a "fiesta", later some music and talk. Seems to ID as "La Radio", but Montevideo location was evident from the DJ's banter. Over/under HJJX, SIO 332 [Burnell-NF]

770 COLOMBIA RCN (HJJX), Bogotá, OCT 25 0339 - Very good, lots of talk in SS and RCN IDs. [Axelrod-MB] OCT 31 0047 - Colombian election results, many "R- C-N" ID's. SIO 333 [Burnell-NF]

786.7a unID, NOV 5 0010 - carrier, maybe Cuban. [Connelly-MA]

790 BARBADOS Voice of Barbados, Bridgetown, OCT 31 0337 - Men with Caribbean accents talking about religious calypso music, played some such music. Increasing QRM from SS stn. SIO 433 [Burnell-NF]

800 MEXICO XEROK Cd. Juárez, OCT 24 0150 - Good, mix of Mexican music styles and Radio Canon ID. [Axelrod-MB] NOV 5 0405 - poor, ranchera music, under CKLW. [Reiser-IL]

800 NETHERLANDS ANTILLES Bonaire, NOV 3 2317 - PP program; good. [Connelly- MA] NOV 4 0142 - Good discussion about spirit in SS. [Reiser-IL]

810 BRAZIL R. Verdes Mares (ZYH589), Fortaleza OCT 30 2251 - Phone talk, clearly about Ceara issues. SIO 343 [Burnell-NF]

830 ST. KITTS Basseterre, NOV 3 2318 - preacher in EE; excellent. [Connelly- MA]

850 DOMINICAN REPUBLIC HILR Santo DOmingo, OCT 17 0131-0150 - LA pop music, ID in part as "Radio CLarin", poor to fair. [Trelford-JAM]

870 ARGENTINA R. Nacional (LRA1), Buenos Aires OCT 31 0216 - Argentinian music (violin and romantic male), "Informa Radio Nacional" news break. SIO 333 [Burnell-NF]

880 BRAZIL R. Inconfidencia (ZYL275), Belo Horizonte OCT 31 0228 - Man in PP with telephone conversations. SIO 343 [Burnell-NF]

895 ST KITTS & NEVIS Charlestown, NOV 3 0138 - In great with U.S. pop and Nostagia music, ad for the Willow Beach Hotel and Restaraunt, mentioned bands playing there this Friday night (Hummingbird Steel band and Masquerade Dancers) dinner specials, and a # to call for more info or reservations (469- 907 - 35) slogan given " All the hits of today and memories of yesterday - Mar Radio" Tips given to improve health and safety conditions in your working environment, signed off at 0200. [Beaton-MA]

900 BARBADOS Caribbean BC, Bridgetown OCT 30 2246 - Charity drive with proceeds to "make Barbados beautiful". SIO 322 [Burnell-NF]

900 CUBA R. Progreso, NOV 2 0442 - man and woman with news, mention "territorio libre," // 640, ID. [Yocis-CT]

910 ARGENTINA R. Nacional (LRA23), San Juan OCT 31 0014 - Mixing with YV (see below): long talk about Formula 1 car racing, ads at 0023, results of some more local races. Long deep fades, SIO 332 [Burnell-NF]

910 VENEZUELA RQ-910 (YVRQ), Caracas OCT 31 0016 - LA ballads, TC's and "R- Q" ID's between each song SIO 333 [Burnell-NF]

930 CUBA R. Reloj, NOV 6 0431 - news, time pips, "Para noticias ... Radio Reloj" ID. [Yocis-CT]

940 MEXICO XEQ Mexico, OCT 20 0517 - clearly audible with SS music even under CBM's dead carrier. Once CBM dropped carrier at 0533, XEQ became very strong for the rest of the evening. Driving back from the WJIB site, I had "La Q" up on the car radio most of the way! [Fybush-MA]

980 BRAZIL R. Nacional (ZYH707), Brasilia OCT 31 0003 - PP talk, govenment message over piano music. SIO 443 [Burnell-NF]

988.4 UNID OCT 30 2359 - Woman in SS, could not squeeze an ID. Very weak and serious fading, SIO 242-1 [Burnell-NF]

990 COLOMBIA unID, OCT 14 2333-2443 - LA pop music, news with male and female announcers, ID variously as "Radio Cefto" and "Radio Sucess", fade out at 2443, fair to poor. [Trelford-JAM]

1000 COLOMBIA HJAQ Cartagena, NOV 2 0300 - RCN jingles, news [Yocis-CT]

1010 BRAZIL R. O Povo (ZYH625), Fortaleza OCT 30 2234 - PP talk "O Povo" and "Povo AM" ID's and simple "Povo" jingle. SIO 333 [Burnell-NF]

1030 ARGENTINA R. Del Plata (LS10), Buenos Aires OCT 30 2331 - In a mix (with Brazilian and likely WOSO) Man and woman in conversation, mentioning Argentina often...faded but back at 2441 with report on Spanish league football. SIO 322. Rechecked OCT 31 at 0120 likely Del Plata again in the clear with classical music program: I listened to Haydn on the car radio while I ran its engine to warm myself up! SIO 443 [Burnell-NF]

1035 CLANDESTINE, OCT 13 0147-0200 - Man with talk in FF or Creole, short piece of "weird" music, mention of Washington DC and off the air. [Trelford- JAM]

1040 BRAZIL R. Capital (ZYK537), São Paulo OCT 30 2306 - Usually the best Brazilian and this time no exception: man and woman with PP chat. SIO 443 [Burnell-NF]

1060 CUBA (t), NOV 5 0018 - SS talk about Cuba, over growl. This is a wide open channel now that CJRP & WBIV are gone, leaving only a lightweight KYW signal to do battle with the numerous Latin Americans here. [Connelly-MA]

1090 DOMINICAN REPUBLIC HIJM Santiago, OCT 12 0028-0057 - LA pop music, 0030 Santiago mentioned and HIJM, 0056 ID as "Radio Barinara"?, poor. [Trelford- JAM]

1160 CUBA CMKX Pilon, OCT 24 0559-0600 - Cuban National Anthem and off the air, so I was able to get WPIE CPC Test! [Trelford-JAM] (nice - Jim)

1170 COLOMBIA Cartagena HJNW, NOV 8 0517 - CARACOL ID, SS talk came up and rolled over the usual WKPE/WWVA mix. [Connelly-MA]

1170 CUBA CMKS, NOV 6 0445 - news in SS re US elections, call ID fair under WWVA. [Yocis-CT]

1180 CUBA Radio Taino, OCT 31 0630 - under KERI while chasing KOIL DX test. EE ID at 0630 by YL: ". . . broadcasting from Havana 24 hours per day..." [Helms-CA] NOV 3 2258 - EE/SS IDs, alone on channel. [Yocis-CT]

1300 ST. MAARTEN PJDS Philipsburg, OCT 10 0903-0939 - OLD music, all instrumental, 0939 woman announcer, neither EE or SS, poor to fair. [Trelford-JAM]

1308.8 ARGENTINA R. Nacional (LRA42), Gualeguaychu OCT 31 0231 - Best catch of the trip - only 1 kW. Man and woman in SS, unequivocal ID by woman, comedy item with crowd laughing, pips at 0300, music included "Volare", jazz and Andean-style flutes; to past 0306. Splatter and deep, long fades, SIO 332 [Burnell-NF]

1309.7 UNID OCT 31 0220 - SS, up briefly with audio, carrier detected for 1 hour or more after, but no ID. Sounded like detailed news of Colombian election, but I'm not convinced it was an HJ. WRTH lists R. Nac. Espejo (Ecuador) on this exact freq... Faded to useless by 0225, but SIO 332 initially. [Burnell-NF]

1350 ARGENTINA R. Buenos Aires (LS6), OCT 31 0037 - Ads mentioning Buenos Aires. Long deep fades, SIO 332 [Burnell-NF]

1390 VENEZUELA R. Fe y Alegria (YVZA), Caracas OCT 31 0249 - Venezuelan music, s/off announcement, and off without anthem at 0254. QRM: US stn and another Latin, SIO 322 [Burnell-NF]

1480 PUERTO RICO Sonido 14-80 (WMDD), Fajardo OCT 30 2238 - Jingle ID, LA ballad, another jingle and man with names of those requesting tunes. This is the easiest PR stn from Newfoundland. SIO 444 [Burnell-NF]

1500 MEXICO XEAI Mexico City DF, OCT 24 1040 - Good lively Mexican music and "AI" ID, over/under KSTP. [Axelrod-MB]

1570 BRAZIL unID stations OCT 30 2218 - Mix of stations, possible (very poor) "Radio Arapoti" at 2220, but mentioned "Brasileira" so often that I wonder if I had R. Brasileira, but I can't be sure. Also clearly heard "Fortaleza" at 2231: only station listed in WRTH in Ceara on this frequency is R. Sertão Central in Senador Pompeu. Tuned out at 2334, but rechecked at 2253-2301 and the "Brasileira" station was evident again. [Burnell-NF] 1580 BRAZIL unID stn OCT 30 2152 - Mainly one station with Brazilian football play-by-play, over other ZY graveyarders. SIO 243 [Burnell-NF]

1580 PUERTO RICO WMTI, 3 transmitters listed, OCT 30 2352 - Woman with political speech in SS (crowd cheered) ... she mentioned the meeting was in San Juan, Puerto Rico. Over another stn in SS, SIO 333 [Burnell-NF]

1600 PUERTO RICO WLUZ, Bayamon OCT 30 2350 - SS announcement with tel number for anyone having problems with their water, ID, LA ballad. SIO 433 [Burnell- NF]

Jean speaks: "These logs were made in an evening at Renews, site of the '91 Newfoundland DXpedition. Unfortunately, I've seen much better African conditions: the Angolans were evident as hets on a number of old-plan freqs, but I didn't bother to log them. The only one with any useful audio was 1502. Some of the "common" Africans were doing quite well, e.g. Mauritania. I looked for BBC Lesotho and all the South African stations - zilch. There was no het for Zambia on 818. I was hoping to review my tapes more carefully than I have -- but I'm short of time! I might have been able to dig out ID's from the Brazilian tapes. It now looks like I was wasting time following the ZY graveyarders on 1580 and 1590, because I have no ID's to show for my efforts. The Argentinians were fun, though, with a good one logged off-freq on 1308.7."

STATION NEWS

CAYMAN ISLANDS: Radio Cayman 1205 is still on the air. Radio Cayman 1555 is not operating, silent for over a year, and will not return. [Bryant-TN]

CONTRIBUTORS

Shawn Axelrod, Winnipeg MB; ICOM ICR-70 with filter mods and Plam Board, 4 foot box loop, Quantum Loop, 100 foot longwire.

@Tom Beaton, Manchester MA; Drake R-8, Mini-MWDX 5 X phasing unit, 2 30 metersloping antennas.

Tom Bryant, Nashville TN

@Jean Burnell, St. John's NF; Icom IC-R71A; 2 unterminated longwires, one 900 feet at 155 degrees, the other 1300 feet at 185 degrees.

@Mark Connelly, WA1ION, Billerica MA; Drake R8, noise-reduced sloper (approx. 37 m) and 30 m. single-turn horizontal loop; phased with DL-1 phasing unit to Mini-MWT-3 regenerative tuner/preamp.

@Scott Fybush, Waltham MA; The receive antenna was the 285' steel vertical transmitting antenna of WJIB-740 Cambridge MA. With the help of WJIB's engineer, Peter George, we fed the coax from the tower into a jury-rigged coil, then held the coil near the DX440 to do some phasing. It was a first try -- and we're planning to try it again sometime soon.

John Hanz, Old Bridge, NJ; NRD-525, attic longwire. (via @Dave Braun/DDXD)

@Harry Helms, AA6FW, San Diego CA; Drake R8, Hammarlund HQ150, Sanserino two- foot loop, Radio West loop.

Thomas Reiser, Chicago IL; Sony ICF-2003 with built-in antenna.

Robert J. Tiara, Hendersonville, NC: R-5000, 24" amplified ferrite loop, many longwires. (via @Dave Braun/DDXD)

Don Trelford, St. Ann's Bay, JAMAICA

Jack Woods, Waldport OR, ICF-2010 with Kiwa filters, ANL-1 outdoor untuned loop.

@David Yocis, Darien CT; Superradio III (temporarily).

Graveyard Achievements

Bill Hale MTFH12A@Prodigy.com
495 Creekview Drive
Meridian, ID 83642-3241

Distance records for stations logged on graveyard frequencies

1240 kHz

Logged from Jan 1, 1960 to Present

Date of Last Update: October 26, 1994
* indicates North American record-holder

WEBJ	AL	Brewton	Bruce Conti	West Warwick, RI	1138
WPRN		Butler	Charles Reh	Leamington, ON	743
WULA		Eufaula	Robert Kramer	Chicago, IL	703
WOWL		Florence	Karl Jeter	Stone Mountain, GA	213
WMGJ		Gadsden	Karl Jeter	Stone Mountain	103
WARF		Jasper	Carl Dabelstein	Lincoln, NE	712
KJAA	AZ	Globe	Mike Sanburn	Bellflower, CA	435
KVRC	AR	Arkadelphia	Charles Reh	Leamington	789
KTLO		Mountain Home	John Malicky	Pittsburgh, PA	732
KWAK		Stuttgart	Charles Reh	Leamington	711
KPOD	CA	Crescent City	Dale Park	Makapu'u Point, HI	2408
			Jack Woods	Waldport, OR	*183
KOAD		Lemoore	Bruce Reynolds	San Jose, CA	138
KMBY		Monterey	Roy Millar	Marysville, WA	752
KPPC		Pasadena	Mike Hardester	San Diego, CA	112
KLOA		Ridgecrest	Les Carpenter	El Toro, CA	138
KSON		San Diego	Bruce Reynolds	San Jose	414
KSMA		Santa Maria	Pete Taylor	San Francisco, CA	221
KSUE		Susanville	Jack Woods	Waldport	330
KRDO	CO	Colorado Springs	John Wilkins	West Des Moines, IA	621
KDGO		Durango	John Wilkins	Wheat Ridge, CO	227
KSLV		Monte Vista	John Wilkins	Wheat Ridge	161
WWCO	CT	Waterbury	Marc DeLorenzo	Hyannis, MA	143
WBGC	FL	Chipley	Don Trelford	Scarborough, ON	952
WEUS		Eustis	Shawn Axelrod	Orlando, FL	30
WINK		Ft. Myers	Charles Reh	Leamington	1065
WMMB		Melbourne	Mauricio Molano	Madrid, Spain	4337
			Marc DeLorenzo	Hynannis, MA	*1102
WFOY		St. Augustine	UK DXPedition £	Sheigra, Scotland	3991
			Charles Reh	Leamington	*841
WBHB	GA	Fitzgerald	Russ Edmunds	Parsippany, NJ	848
WGGA		Gainesville	Charles Reh	Leamington	537
WLAG		La Grange	Dave Whatmough	Hamilton, ON	650
WDDO		Macon	Don Trelford	St. Anns Bay, Jamaica	1072
WWNS		Statesboro	Carl Dabelstein	Lincoln	1014
WPAX		Thomasville	Morris Sorensen	Scarborough, ON	920
WTWA		Thomson	Karl Jeter	Stone Mountain	98
KLEI	HI	Kailua	Eric McIntosh	Invercargill, NZ	5142
KMCL	ID	McCall	Wayne Heinen	Colorado Springs, CO	716
KWIK		Pocatello	Esa Hänninen	Lemmenjoki, Finland	4432
			John Wilkins	Wheat Ridge, CO	*437
WCRW	IL	Chicago	Charles Reh	Leamington	264
WEDC		Chicago	Joe Fela	Newark, NJ	703
WSBC		Chicago	Charles Reh	Leamington	264
WEBQ		Harrisburg	Jeff Falconer	Clinton, ON	543
WTAX		Springfield	Ernie Cooper	Provincetown, MA	1029
WSDR		Sterling	MB DXPedition &	Arnes, MB	702
WHBU	IN	Anderson	Niel Wolfish	Willowdale, ON	403

KDEC	IA	Decorah	Wayne Heinen	Buffalo, NY	653
KWLC		Decorah	John Wilkins	West Des Moines	156
KBIZ		Ottumwa	Charles Reh	Leamington	512
KICD		Spencer	Esa Hänninen	Lemmenjoki	4143
			Charles Reh	Leamington	*644
KIUL	KS	Garden City	Esa Hänninen	Lemmenjoki	4580
			Bruce Reynolds	Warrensburg	*392
KNSS		Wichita	Esa Hänninen	Lemmenjoki	4536
KAKE			Charles Reh	Leamington	*835
WINN	KY	Louisville	John Wilkins	West Des Moines, CO	483
WFTM		Maysville	Charles Reh	Leamington	243
WPKE		Pikeville	Charles Reh	Leamington	314
WSFC		Somerset	Russ Edmunds	Parsippany, NJ	615
KASO	LA	Minden	Steve Ponder	Bossier City, LA	26
KANE		New Iberia	Jerry Starr	Youngstown, OH	991
WTME	ME	Lewiston	Ron Musco	Windsor, CT	197
WJEJ	MD	Hagerstown	Karl Jeter	Stone Mountain	539
WHAI	MA	Greenfield	Ron Musco	Windsor	50
WUOK		West Yarmouth	Don Voorhies	Oswego, NY	344
WATT	MI	Cadillac	MB DXPedition &	Arnes, MB	696
WCBY		Cheboygan	Don Lynch	Lynn, MA	715
WJPD		Ishpeming	MB DXPedition &	Arnes	510
WJIM		Lansing	UK DXPedition ££	Sheigra, Scotland	3426
			Shawn Axelrod	Winnipeg, MB	*813
WGGR	MN	Hibbing	John Malicky	Pittsburgh	797
LKRK		Park Rapids	Carl Dabelstein	Omaha, NE	390
WJON		St. Cloud	Morris Sorensen	Leaf Rapids, MB	845
WMPA	MS	Aberdeen	Jerry Starr	Youngstown	666
WGRM		Greenwood	Frank Merrill	Milan, MI	687
WGCM		Gulfport	Frank Merrill	Milan	859
WMIS		Natchez	Charles Reh	Leamington	873
KFMO	MO	Flat River	Charles Reh	Leamington	510
KWOS		Jefferson City	Esa Hänninen	Lemmenjoki	4385
			Charles Reh	Leamington	*560
KNEM		Nevada	Carl Dabelstein	Overland Park, KS	580
KUUS	MT	Billings	Esa Hänninen	Lemmenjoki	4190
KBMY			Bruce Reynolds	Warrensburg	*895
KLTZ		Glasgow	Esa Hänninen	Lemmenjoki	4001
			Roy Millar	Marysville	*726
KLYQ		Hamilton	Tim Hall	Kalispell, MT	135
KBLL		Helena	Carl Dabelstein	Omaha	880
KFOR	NE	Lincoln	Esa Hänninen	Lemmenjoki	4321
			John Wilkins	Wheat Ridge	*454
KODY		North Platte	Esa Hänninen	Lemmenjoki	4372
			Bruce Reynolds	Warrensburg	*407
KELK	NV	Elko	Frank Merrill	Nanena, AK	2103
WFTN	NH	Franklin	Bob McCoy	Lincoln, NE	1293
WSNJ	NJ	Bridgeton	Charles Reh	Leamington	424
KLTN	NM	Albuquerque	Tim Hall	Chula Vista, CA	621
KCLV		Clovis	Tim Hall	Chula Vista	808
WGBB	NY	Freeport	Charles Reh	Leamington	475
WGVA		Geneva	Rich Eddie	St. Louis, MO	785
WJTN		Jamestown	John Wilkins	West Des Moines	747
WVOS		Liberty	Joe Kureth	Uniontown, MD	195
WNBZ		Saranac Lake	Morris Sorensen	Scarborough	266
WSNY		Schenectady	Marc DeLorenzo	Hyannis	206
WATN		Watertown	Joe Kureth	Southern Pines, NC	634
WRAQ	NC	Brevard	Karl Jeter	Stone Mountain	128
WIST		Charlotte	Marc DeLorenzo	Hyannis	722
WCNC		Elizabeth City	Rich Eddie	St. Louis	785
WJNC		Jacksonville	Andy Rugg	Montreal, PQ	776
WPJL		Raleigh	Don Lynch	Lynn	616
KDLR	ND	Devils Lake	Jeff Tynan	Parker	664

WBBW	OH	Youngstown	Andy Rugg	Montreal	438
WHIZ		Zanesville	Dave Braun	Falls Church, VA	267
KVSO	OK	Ardmore	John Wilkins	Wheat Ridge, CO	585
KADS		Elk City	Bill Hale	Mountain Home, ID	1026
KBEL		Idabel	Bruce Reynolds	Warrensburg	344
KOKL		Okmulgee	Karl Jeter	Stone Mountain	682
KFLY	OR	Corvallis	Esa Hänninen	Lemmenjoki	4445
			Bruce Reynolds	San Jose	*507
KTIX		Pendleton	Olle Alm	Abisko, Sweden	4259
			Roy Millar	Marysville	*210
KQEN		Roseburg	Bruce Reynolds	San Jose	412
WRTA	PA	Altoona	Steve Francis	Alcoa	438
EBS		Philadelphia	Dan Phillips	Clinton, TN	630
WHUM		Reading	Steve Francis	Alcoa	438
WSEW		Selinsgrove	Marc DeLorenzo	Hyannis	347
WBAX		Wilkes-Barre	Marc DeLorenzo	Hyannis	291
WWON	RI	Woonsocket	Russ Edmunds	Syracuse, NY	248
WDXY	SC	Sumter	Russ Edmunds	Parsippany	581
KCCR	SD	Pierre	Esa Hänninen	Lemmenjoki	4156
			Dave Whatmough	Hamilton, ON	*1022
WBEJ	TN	Elizabethton	Carl Dabelstein	Omaha	799
WEKR		Fayetteville	Dave Whatmough	Hamilton	666
WBIR		Knoxville	Andy Rugg	Montreal	851
WKDA		Nashville	Don Lynch	Lynn	946
WEDG		Soddy-Daisy	Charles Reh	Leamington	488
WENK		Union City	Harry Hayes	Gouldsboro, PA	780
KVLF	TX	Alpine	John Wilkins	Fort Davis, TX	21
KEAN		Brownwood	John Wilkins	West Des Moines	738
KORA		Bryan	Frank Merrill	Milan	1055
KXIT		Dalhart	John Wilkins	Wheat Ridge	291
KOCA		Kilgore	Bruce Reynolds	Warrensburg	444
KXOX		Sweetwater	Charles Reh	Leamington	1178
WSKI	VT	Montpelier	Dave Schmidt	New Castle, DE	355
WSSV	VA	Petersburg	Andy Rugg	Montreal	610
WROV		Roanoke	Bruce Reynolds	Warrensburg	755
WTON		Staunton	Andy Rugg	Montreal	579
KCVL	WA	Colville	Nancy Hardy	Aberdeen, WA	295
KGY		Olympia	Tim Hall	Kamloops, BC	276
WKOY	WV	Bluefield	Don Lynch	Lynn	647
WTIP		Charleston	Niel Wolfish	Toronto	386
WOMT	WI	Manitowoc	Shawn Axelrod	Valhalla Beach, MB	630
WIBU		Poynette	Morris Sorensen	Amaranth, MB	644
WOBT		Rhinelander	Jerry Starr	Youngstown	542
WJMC		Rice Lake	Charles Reh	Leamington	512
KFBC	WY	Cheyenne	MB DXPedition &	Arnes	760
KEVA		Evanston	Bob McCoy	Lincoln	471
KASL		Newcastle	Mike Hardester	Modesto, CA	959
KVRS (EBS)		Rock Springs	Roy Millar	Bellevue, WA	759
KRAL		Rawlins	John Wilkins	Wheat Ridge	178
KTHE		Thermopolis	Bill & Nancy Hardy	Aberdeen, WA	787
WALO	PR	Humacao	Cesar Objio	Santo Domingo, DR	268
CFVR	BC	Abbottsford	Roy Millar	Bellevue	105
CFEK		Fernie	Roy Millar	Bellevue	360
CKGO		Hope	Tim Hall	Banff, AB	288
CKMK		Mackenzie	Frank Merrill	Nanena	1085
CKOO		Osoyoos	Tim Hall	Banff	222
CBXK		Pemberton	Shawn Axelrod	Victoria, BC	133
CJAV		Port Alberni	Nancy Hardy	Aberdeen	163
CFNI		Port Hardy	Frank Merrill	Nanena	1233
CKWL		Williams Lake	Roy Millar	Marysville	324
CJAR	MB	The Pas	Esa Hanninen	Lemmenjoki	3545
			Morris Sorensen	Maranth, MB	*253

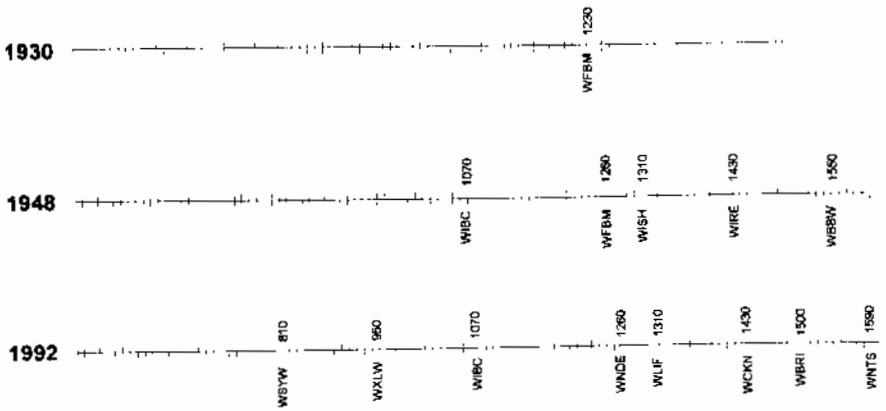
CKIM	NF	Baie Verte	Esa Hänninen	Sulinjarvi, Finland	3071
CJCD	NWT	Yellowknife	UK DXPedition £	Sheigra	3277
			Morris Sorensen	Leaf Rapids	*653
CFAK	ON	Atikokan	Shawn Axelrod	Winnipeg	308
CJNH		Bancroft	Jeff Falconer	Clinton	217
CBEZ		Britt	Morris Sorensen	Emsdale, ON	71
CJCS		Stratford	Morris Sorensen	Port Carling, ON	145
CJWA		Wawa	Morris Sorensen	God's Lake Narrows, MB	935
CJRW	PI	Summerside	Esa Hanninen	Lemmenjoki	3284
CJAF	PQ	Cabano	Esa Hänninen	Lemmenjoki	3363
			Shawn Axelrod	Valhalla BEach, MB	*1284
CJRB		Lac-Etchemin	Christian DeHaes	Chicoutimi	141
CKLS		La Sarre	Esa Hänninen	Lemmenjoki	3479
			Morris Sorensen	God's Lake Narrows	*761
CKLM		La Tuque	Joe Kureth	Uniontown	581
CFLS		Levis	Paul Mount	Teaneck, NJ	450
CKBS		St. Hyacinthe	Don Voorhies	Oswego	232
CJNS	SK	Meadow Lake	Esa Hänninen	Lemmenjoki	3637
ZNS2	BAH	Nassau	Charles Reh	Leamington	1208
4VJH	HTI	Port-au-Prince	Cesar Objio	Santo Domingo	159
XESI	NAY	Santiago Ixcuintla	Pete Taylor	Cabo San Lucas, BCS	308
XEBQ	SON	Guaymas	Tim Hall	Poway, CA	503
TGK	GTM	Guatemala City	Niel Wolfish	Toronto, ON	2106
ZYH654	BRZ	Candinde	UK DXPedition £	Sheigra	4731
ZYH90		Joinville	Pete Taylor	Rio de Janeiro, Brazil	422
ZYI774		Recife	Pete Taylor	Cape Town, South Africa	3817
HJFG	CLM	Armenia	Eric Bueneman	Hazlewood, MO	2539
----	CNH	Shenyang	Pete Taylor	San Francisco	5553
JOTK	JPN	Matsue	Pete Taylor	San Francisco	5444

£ = UK DXPedition [Steve Whitt, Mark Hattam, Clive Rooms]
ff = UK DXPedition [Mark Hattam, Clive Rooms, Dave Kenny and Martin Hall]
& = MB DXPedition [Shawn Axelrod, Wayne McRae]

Now and Then John D. Bowker

Dial changes in AM markets, from 1930 to 1948 to 1992

INDIANAPOLIS MARKET



Radio Roundup

Pete Kemp (KZ1Z) PeteKZ1Z@AOL.com
P. O. Box 73
Bethel, CT 06801-0073

News of the radio industry, of interest to DXers

Greetings all ... Many thanks to sharp eyed NRCer Gregory Henson for the following ... King Affiliate WWRC staffers had a little fun, at Larry's expense, when they launched a Where's Larry Hunt. The gang at the station is not pleased with King's Friday off policy, a la Johnny Carson. With the lackluster numbers of King's daytime radio show coupled with his CNN work, more and more stations are looking for "alternatives." ... For people keeping track of numbers, Rush Limbaugh's radio show is currently heard on 624 stations and AFRTS ... WWRC's Johnny Holiday covered the Olympic Games in Norway for the ABC Information Network. He certainly is a most active sports announcer, but I still remember him for his platter spinning days on 10-10 WINS New York, just prior to their All-News format .. Former Redskin Doc Walker has signed on to WTEM-570 as a noon to 2 p.m. sports-talker ... While cellular telephone technology has been around radio stations for a long time in conjunction with live remotes, an emerging technology combining the cellular telephone with a color video camera is allowing our television sisters to go to the live remote location without the expense of a large video truck. Using a camera, cellular telephone and a computer the system sends its signals back to the station via the telephone company. WVIT-Channel 30 is now on line with what they are calling their 1st Video system. I guess our radio forefathers were right, television is just a radio with pictures .. Infinity Broadcasting has purchased KRTH in Los Angeles ... The degree of computer interfacing in radio is really on the move, even in small markets. One Seattle FM station KZOK set up a promotional billboard, complete with a giant radio containing a LED Display. The display read the name of the record selection and artist currently playing on the station ... Barry Manilow takes his music very seriously. When KBIG, Los Angeles, wanted to set itself apart from crosstown rival KOST, it advertised that the difference was that KBOX does NOT play Manilow's Music. Barry was not amused, filed a 28 million dollar suit against KBIG. The suit was dropped and KBIG changed its promos very quickly .. Steve Shannon and D. C. Chymes are back on the air in St. Louis on WKBQ. Their first experience in St Louis was a short two week run following their racial on-air comments. The station dropped them like a hot potato, following condemnation from the NAACP and the Urban League. According to the management of WKBQ the pair has undergone a three-month cultural awareness course and is now ready to be unleashed on the air ... KFI has contracted with Tammy Bruce for an Saturday evening talkshow from 9.00 pm to 1 am. She is the President of the Los Angeles Chapter of NOW ... ... WFLA's morning man Ted Webb has signed on for three more years ... WIOD is moving its personalities around with Randi Rhodes moving to the afternoon drive and the team of Rick & Suds going into the morning drive position ... Based on Arbitron data, compiled by the Katz Radio Group, Country Music is listed as the number one format in America with 16.2 per cent of the stations. This is followed by Urban with 9.3 and then a tie with 8.3 between Adult Contemporary and Album Oriented Rock ... According the Radio Television News Directors Association, nearly 500 fulltime and 100 part time news jobs were eliminated during last year and the budget axes continue to swing at stations all across the country ... In Phoenix, Tim & Mark have signed a five-year contract to continue their popular morning show on KDKB ... WDAE, in Tampa, has become "Froggy 1250 AM" playing country hits of the 70s and 80s ... KURS has been fined for excessive power ... The FCC's Jim Burtle says that it is possible that stations may be migrating to the new AM sub-band in the 1605-1705 by this summer. John Chase, formerly in St. Louis at WKKX has moved on to WDDD in Marion, IL ... WAGO in Redding, PA is being sued for allegedly taking news stories from the *Eagle Times* and reading them on the air. With the decline of many newsrooms this was bound to happen ... The Museum of Radio and Television, in New York City, is expected to open up another facility in Beverly Hills, CA next year ... If you would like to contribute to this column, I may be reached at the address above, via CompuServe 72376,2557, Prodigy PFVK52D, InterNet PeteKZ1Z@AOL.COM, the FIDO system in the Shortwave, Ham or Broadcasting echo areas, The Oracle 1:141/1015, or amateur radio packet, KZ1Z @ K1UOL.CT. So much for now.

Ultralinear 2N5109 and 2N3053 Amplifiers ... by Dallas Lankford

For about a year I have been experimenting with extremely high intercept amplifiers using 2N5109 and 2N3053 bipolar junction transistors (BJT's). These kinds of amplifiers, known as common base transformer feedback (CBTF) amplifiers, and also known as common base noiseless feedback (CBNF) amplifiers, if properly designed and used, offer MW DXers (and SW DXers, though their needs are not as extreme as MW DXers) amplifiers with extremely low levels of 2nd and 3rd order intermodulation distortion (IMD2 and IMD3), which, in turn, offer much higher levels of strong signal handling performance than have been available previously. CBTF amps can provide greatly improved performance for balanced two foot air core loop amps, for low-gain tuned preselector amps, for broadband phasing system amps, and for other similar applications where extremely high 2nd and 3rd order input intercepts (ICP2in and ICP3in) are needed. Appropriately configured, a single BJT CBTF amp can have ICP3in greater than +35 dBm throughout the MW band and ICP2in greater than +46 dBm throughout the MW band. With a pair of BJT CBTF amps configured push-pull, ICP2in greater than +95 dBm can be achieved throughout the MW band. The purpose of this note is to summarize my experiences with CBTF amps using 2N5109 and 2N3053 BJT's, and to provide enough information for other DXers to construct and use these kinds of CBNF amps.

CBNF/CBTF amps were first described by Dr. David E. Norton in his pioneering May 1975 Microwave Journal article, "High dynamic range transistor amplifiers using lossless feedback." The amplifiers were patented (U.S. Patent Nos. 3,426,298; 1969, 3,624,536; 1971, and 3,891,934; 1975), which, perhaps, explains why CBTF amps have not been widely used in the past. According to reliable sources, these patents have expired. However, if you decide to produce and sell such amps, you should obtain legal counsel to verify this information. In that pioneering article, only transformer turns ratios and corresponding amp gains were given; no information about DC power and biassing was given; see Fig. 1 at left. A theoretical circuit analysis based on simplifying assumptions was given as follows. Assuming that a common base BJT amp has zero input impedance, and infinite output impedance (neither of which is true), and assuming unity current gain (which is approximately true provided the operating frequency of the amp is well below the cutoff frequency of the BJT), a two way impedance match to Z_0 will be obtained if the transformer turns ratios $n_1:n_2:n_3$ satisfy the turns ratio condition $1:n:m$ where $n = m^2 - m - 1$. Permissible ratios include 1:1:2, 1:5:3, 1:11:4, 1:19:5, and so on. Also with the above simplifying assumptions, power gain is m^2. Thus, a 1:1:2 amp has gain 4, or 10 log(4) = 6.02 dB, a 1:5:3 amp has gain 9, or 9.54 dB, a 1:11:4 amp has gain 16, or 12.04 dB, a 1:19:5 amp has gain 25, or 13.98 dB, and so on. The number of turns of wire on the transformer may be varied to adjust frequency range of the amp as long as the appropriate ratios are maintained. For example, a 1:5:3 amp may have 1:5:3, or 2:10:6, or 3:15:9 turns for $n_1:n_2:n_3$ and so on. The phasing dots of the transformer in Fig. 1 should be observed. A BJT CBTF amp uses negative feedback, so that reversal of the phasing of the feedback link n_1 would provide positive feedback, which would likely cause the amp to oscillate, and in any case would change amp gain, and degrade IMD performance and two way impedance match to Z_0.

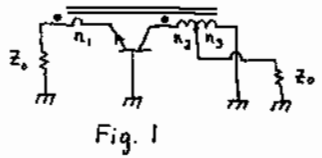


Fig. 1

Although it was not explained in Norton's pioneering article, the meaning of the expression "a two way impedance match to Z_0" is, apparently, that if one of these BJT CBTF amps works into a load of Z_0 ohms real, then the input impedance of the amp is Z_0 ohms. In other words, the input impedance of a BJT CBTF amp is dependent on the load impedance; namely, the input impedance is equal to the load impedance. But there is more to it than that. The transformer of the BJT CBTF amp is a broadband transformer, with a frequency range which depends on transformer parameters. So the frequency range for which a BJT CBTF amp provides a two way match to Z_0 is, presumably, no greater than the frequency range of the transformer. Also, the frequency range of a particular transformer depends on the source and load impedances of the transformer. This limits the range of values of Z_0 for which a particular transformer will provide a two way impedance match to Z_0 over a given frequency range. Based on experiments and measurements with a number of transformers, I have found that if the usual principles of broadband transformer design are adhered to, then a BJT CBTF amp using 2N5109 or 2N3053 BJT's has about the same frequency range as the transformer alone for a given Z_0. For many applications, Z_0 = 50 ohms, so the usual transformer design for 50 ohms should be used.

The two way impedance match to Z_0 is an ideal characteristic of BJT CBTF

amps based on a mathematical derivation which uses simplifying assumptions that are not true for actual common base amps, as pointed out above. Based on measurements with several BJT CBTF amps, I have found that if such an amp works into a load of Z_0 ohms real, then the input impedance tends to be about 60% to 80% of Z_0. I have not attempted to determine whether a perfect match to input impedance (using a broadband matching transformer) would increase the ICP2in and ICP3in of these BJT CBTF amps because the intercepts are already so high that there seems to be no need to raise them slightly higher by this means. Also, there are other easier means to raise the intercepts higher. For example, a 1:11:4 CBTF amp with appropriate transformer and biassing adjusted for 20 mA collector current and with appropriate bypassing and coupling capacitors has flat power gain of about 12 dB from about 100 KHz to beyond 30 MHz, while the ICP3in is about +38 dBm from 10 MHz to 30 MHz, but falls off slowly below 10 MHz to about +34 dBm at about 1.6 MHz, and to about +27 dBm at about 455 KHz. This decrease of ICP3in as frequency decreases seems to be normal and due to the diode junctions of BJT's. For higher ICP3in within and below the MW band, one may use a 2:11:4 transformer, which has a flat 6 dB power gain, and ICP3in greater than +35 dBm for all frequencies greater than 455 KHz. The two way impedance match of a 2:11:4 transformer is not perfect either, and gives an input impedance of about 160 % of Z_0. For a 2:11:4 CBTF amp working into a 50 ohms real load, this would be an input impedance of about 80 ohms, which is still a reasonably good match to a 50 ohms source impedance.

The example of a 2:11:4 CBTF amp above illustrates three of the general principles of negative feedback, namely that (1) as negative feedback is increased, power gain is decreased, (2) as negative feedback is increased, linearity improves (ICP3in increases), and (3) as negative feedback is increased, input impedance of the feedback amp is increased. An excellent discussion of negative feedback amplifiers is contained in Chapter 17 of the book Electronic Devices And Circuits, by J. Millman and C. Halkias, McGraw-Hill Book Co., 1967. There a fourth general characteristic of negative feedback amplifiers is discussed, namely the tendency of amp noise to decrease as negative feedback is increased, but I have not observed this characteristic in any of my experiments and measurements, perhaps because noise from other sources obscured any noise reduction which resulted from the higher feedback 2:11:4 CBTF amp.

My experiences with 2:11:4 CBTF amps, as related above, suggest that a fertile area for future investigation may be to study the performance characteristics of CBTF amps with transformer turns ratios other than the ideal ratios (1:1:2, 1:5:3, 1:11:4, and so on) originally proposed by Norton (and repeated by other writers). For example, it appears that the turns ratios for a near-perfect two way impedance match to Z_0 have yet to be determined for 2N5109 and 2N3053 BJT's, and since such amps have yet to be studied, their power gains and their input intercept characteristics are as yet unknown. And it appears that the only way to develop such amps, if they can be developed, is by trial and error, i.e., by winding transformers with different turns ratios and measuring the closeness of two way impedance match to Z_0, measuring amp gain, measuring ICP2in and ICP3in for various collector currents, and so on. One could also attempt to develop a more accurate mathematical model of CBTF amps beginning with the usual two-port hybrid models, but the complexity of such a project appears to be considerable.

Relatively little information appears to have been published regarding biassing CBTF amps using common BJT's, such as 2N5109 and 2N3053. The November 1984 Ham Radio column, "VHF/UHF World," by Joe Reisert, W1JR, contains the only biassing information I have found for a 2N5109. The same biassing was also suggested for an NEC NE4163B transistor. Another biassing arrangement, one for Motorola MRF586 BJT's, requiring +6 VDC and -6 VDC power sources, was discussed by J. Makhinson in his Feb. 1993 QST article, "A high-dynamic-range MF/HF receiver front end." However, the dual polarity power requirement makes Makhinson's approach difficult to implement, and based on experiments I have done, there is no improvement in linearity due to the dual polarity power arrangement. In part 2 of his Dec. 1981 Ham Radio article, "Communications receivers for the year 2000," Dr. Ulrich L. Rohde briefly summarized what Dr. David Norton had already published in 1976, and gave an example (in his Fig. 7) of an elaborate two-stage amplifier using the noiseless feedback concept. The two-stage amp used Siemens BFT66 BJT's, which are not widely available in the U.S.A. Due to the complexity of that two-stage amp, and because of the difficulty of obtaining BFT66 BJT's, it does not seem appropriate for hobbyist or consumer grade applications at MW's and SW's. Another example of CBTF amps was given in Rohde's Nov. 1992 QST article, "Recent advances in shortwave receiver design," namely, the use of an AGC controlled BFT66 CBTF IF amp (Fig. 11 of his article) in a Rohde & Schwarz EK0890 communications receiver.

Two schematics, one for the basic CBTF amp, and the other for a push-pull amp using two matched CBTF amps, are given below in Fig. 2. For MW band use, C1, C2, C3, C4, and C5 should be 0.1 or 0.2 uF, RFC1 should be 1 mH, RFC2

may be 100 uH or greater, up to 1 mH, FB should be an Amidon ferrite bead, type FB-101-64, T1 should be a Amidon FT-50-75 ferrite toroid core with n_1 = 1 turn, n_2 = 11 turns, and n_3 = 4 turns #24 enameled copper wire, and the 75 material core should be wrapped with thick Teflon tape before winding the wire turns, where the wire turns are spaced evenly around the entire circumference of the toroid core. R2 = 1000 ohms, R3 = 4700 ohms, and R3 = 10 ohms for +V DC = +9 volts DC, R1 should be a 100 ohm adjustable pot (I like Spectrol 25 turn 1/2 watt cermet top adjust pots in series with a 10 ohm 1/4 watt fixed resistor, the latter to prevent frying Q1 if the pot is accidentally adjusted to zero ohms), and Q1 may be either a 2N5109 or 2N3053. R1 is adjusted for whatever collector current is desired (up to about 16 mA if Q1 is not heat sinked, and up to about 30 mA if Q1 is heat sinked with a Mouser 567-7-120-BA heat sink rated at 35 degrees C/W ther. res.). The current drain (setting of R1) determines the amp ICP3in and ICP2in. More information about the relationship between current drain and ICP3in and the relationship between current drain and ICP2in will be given below.

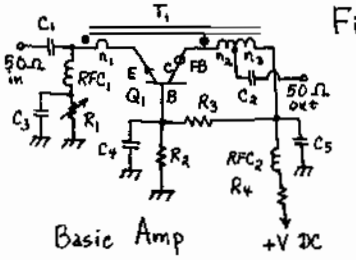
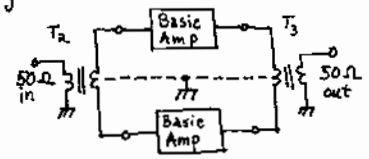


Fig. 2



A push-pull (sometimes called balanced) CBTF amp requires a pair of basic amps configured as shown above in Fig. 2. For a push-pull amp with a frequency range of about 100 KHz to beyond 30 MHz, T2 and T3 should be Amidon FT-50-75 ferrite toroid cores, wrapped with thick Teflon tape, and wound with 8 bifilar turns of #24 enameled copper wire. The basic amps should be shielded from each other as shown in Fig. 2; otherwise, interaction between the individual amps may cause instability or degrade the extremely high ICP2in which this kind of push-pull CBTF amp is capable of achieving. It has been written in some publications that the individual amps of a push-pull pair do not need to be matched closely. That may or may not be true. I have not expended much effort to confirm or deny that statement. However, for all of my experiments and measurements I matched the individual basic amps as close as possible with h_{FE} of the BJT's matched to within 1 digit using a DVM with an h_{FE} range, all resistors 2% tolerance or less, the transformers T1 wound as identical as possible and with identical as possible lead lengths, T2 and T3 wound as identical as possible and with as identical as possible lead lengths, ferrite magnetic shielded chokes for RFC1 (Mouser 434-02-102J) to minimize mutual inductance coupling between the individual basic amps (chokes wound on FT-50-43 ferrite toroid cores might have been better for this purpose, but I could not detect any difference between the commercial Mouser chokes and hand-wound toroids in prototype amps which I tested extensively), and PC board construction with the individual basic amps laid out as identical as possible. Perhaps as a result of these precautions and attention to detail, I have been able to construct push-pull CBTF amps with ICP2in of about +100 dBm, which is substantially higher than has been reported for any previous amp, and especially for an amp with 12 dB power gain.

Because so little information was available regarding biassing, the relationship between ICP2in and collector current, the relationship between ICP3in and collector current, the relationship between ICP2in and frequency,

the relationship between ICP3in and frequency, and so on, I made extensive studies of these issues and relationships. The results of those measurements are given below in Fig. 3.

Fig. 3

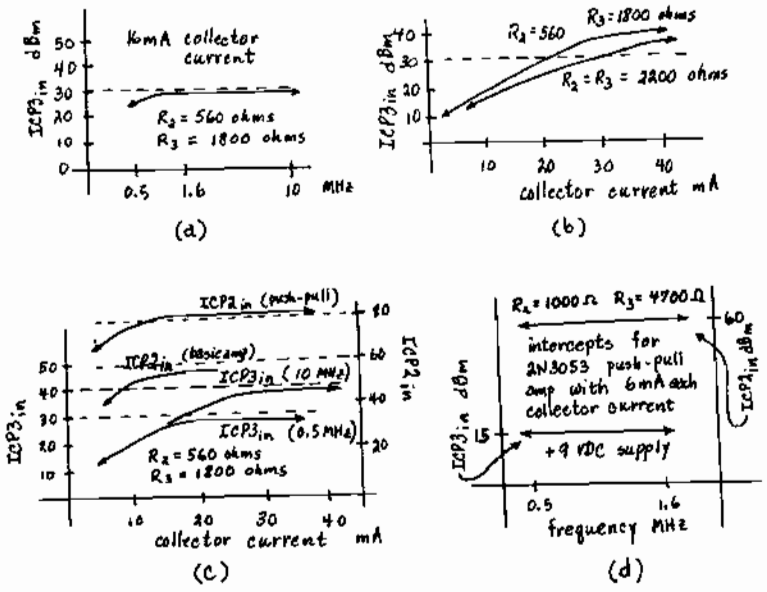


Fig. 3(a) shows the tendency for ICP3in to decrease as frequency decreases within and below the MW band. The biassing used there, R2 = 560 ohms and R3 = 1800 ohms, was the first biassing I tried. With other biassing, the relationship is different, but similar. Fig. 3(b) shows a feature of biassing: the ratio of R2 to R2 should be kept as low as practical to obtain maximal ICP3in with minimal collector current. R2 = 1000 ohms and R3 = 4700 ohms, which was recommended above for the basic amp of Fig. 2, provides a ratio of about 1/5, about the smallest practical ratio. For smaller ratios, adjustment of collector current via R1 becomes progressively more difficult. Also, smaller R2/R3 ratios would likely cause thermal instability of ICP2in for the push-pull amp, and make maximum ICP2in via adjustment of R1 difficult, if not impossible, to obtain. Fig. 3(c) compares the relationships between ICP (2 and 3, push-pull and basic amps) and collector current. It should be observed that for a given SW frequency (10 MHz in this case), a "knee" occurs in the ICP curves, and that for greater collector currents beyond this "knee," little or no increase in ICP is obtained. But this is not the case for ICP2in at lower frequencies; see Fig. 3(g) and Fig. 3(h). Fig. 3(d) shows that much higher ICP2in can be obtained in the MW band with a push-pull CBTF amp drawing very low collector current (6 mA in this case) than has been reported for any other kind of amp. Such an amp might be ideal as a two foot air core balanced MW loop amp. The point I want to make here is that the +100 dBm ICP2in which can be achieved with a push-pull CBTF amp is "overkill" for a two foot air core loop amp (unless you want to DX in the shadow of a 50 KW transmitting tower), and that lower collector currents (exactly how much lower, I don't know) would be entirely adequate for such an application. Fig. 3(e) shows how collector current varies with R1 value for a typical 2N5109 BJT when R2 = 1000 ohms and R3 = 4700 ohms. Typically somewhat lower R1 values are required for a 2N3053. The purpose of this graph is to give you a starting point for adjusting collector current. Fig. 3(f) is a sketch of T1, a negative feedback transformer wound on a toroid. As mentioned previously, the spacing of the turns is uniform around the entire circumference of the toroid. To get a snug fit, and to preclude the one turn feedback link from making physical contact with the semiconductor material of the 75 material toroid, it is helpful to use a short length of insulation over the wire of the one turn link.

All of the graphs of Fig. 3 were developed for CBTF amps using a 1:11:4 feedback transformer, i.e., for 12 dB power gain CBTF amps. Similar results may be obtained for CBTF amps with other turns ratios, but I have not made exhaustive studies of those cases, merely some spot measurements to determine if the results for those other cases were similar (they were).

Don't let the myriad of variations of biassings, collector currents, and operating frequencies dissuade you from constructing a CBTF amp or two. Even if you don't get the amp quite optimal for your intended application, the chances are that your end result will be considerably better than any other amp you have ever built. Except for the chokes (which can be ordered from Mouser) and the toroid and ferrite bead (which can be ordered from Amidon), the basic amp of Fig. 2 can be built entirely with parts purchased at Radio Shack if you are willing to live with a less than optimal amp. Use a 100 ohm fixed resistor for R1, and use R2 = 560 ohms and R3 = 1800 ohms. All of the required resistors are available in the resistor package Cat. No. 271-312A. Radio Shack also carries the 2N3053, which, with an f_T of 100 MHz, is suitable for use up to at least 30 MHz. (The 2N5109 is really only necessary if you need to scale the amp up into the tens to hundreds of MHz range, and in that case you will need to replace all the capacitors with 1000 pF capacitors, and use entirely different transformers.) With the above biassing, collector current should be in the 14 to 16 mA range, and heat sinking should not be required. As a matter of fact, I used the above biassing for all of my early experiments with CBTF amps, with impressive results which continually astonished me. Although I used 2N5109's instead of 2N3053's, subsequent experiments and measurements have shown that 2N3053's provide virtually identical performance. I discovered the 2N3053 quite by accident one afternoon at Radio Shack while digging through the racks looking for something else. When I spotted the 2N3053, it looked just like a 2N5109, so naturally I plucked one off the rack and read the specs on the back of the package. Except for a lower f_T, the specs were very similar to a 2N5109. For all I know, the 2N3053 is a 2N5109 which failed the 1.2 GHz f_T test for a 2N5109. Anyway, I immediately bought a few and hurried home to try out the 2N3053 in place of 2N5109's in amps laying around on my work table. They were fine; same gain, same low noise, and only slightly less collector current (and, thus, slightly lower intercepts) for a given R1. To get virtually identical performance to a 2N5109, one only needed to adjust the value of R1 slightly. This experience led to a curious excursion into old transistor reference books. I was sure that I had searched old handbooks for possible substitutes for the 2N5109 and had found none. And indeed I had. In 1967 and 1969 RCA transistor handbooks the 2N3053 was listed as having an f_T of 20 MHz, so I had concluded that it would not be suitable above, say, 10 MHz. Current production 2N3053's appear to be entirely different BJT's from the 1967/69 versions. Similarly, further research revealed

that current production 2N5109's have entirely different parameters from 1967/69 2N5109's. This could have a bearing on why current production 2N5109's (and 2N3053's) do not provide a near-perfect two way impedance match to Z_0 as discussed above. In any case, the 2N3053 appears to be entirely adequate for use up to at least 30 MHz. With 0.1 uF capacitors, the basic amp of Fig. 2 has flat gain down to about 150 KHz, with gain falling off slowly below 150 KHz. For flat gain to 100 KHz, 0.2 uF capacitors are required. I have not attempted to extend the frequency response below 100 KHz, but I see no reason why it could not be done. I would suggest that each capacitor be a 0.2 uF monolithic ceramic capacitor in parallel with a 2 uF tantalum. All of the turns of the feedback transformer T1 should be doubled, i.e., $n_1:n_2:n_3$ = 2:22:8. Probably smaller guage wire, namely #26 or #28, will have to be used. If gain falls off above 10 KHz, try 3:33:12 turns. If 12 dB gain is more gain than you need for your intended application, try the 9.5 dB gain version with 2:10:6 turns of #24 enameled copper wire, which should give flat gain from below 100 KHz to well above 30 MHz. A 3:15:9 turn version should be good down to 10 KHz (with 2 uF // 0.2 uF caps), but high frequency gain will begin to fall off above 15 MHz or so. For various reasons I didn't like the 6 dB gain 1:1:2 version. If a 6 dB gain CBTF amp is your cup of tea, try the 2:11:4 version which I discovered. It has much higher ICP3in than the "standard" 1:1:2 version anyway.

A push-pull CBTF amp requires somewhat more careful implementation than the basic amp. Nevertheless, the reward is well worth the effort: complete elimination of 2nd order intermodulation distortion products if implemented and used correctly. With the aid of a DVM, you should be able to obtain the required 2% or closer tolerance resistors from a Radio Shack 271-312A package as I did for my initial experiments. And if memory serves me correctly, I obtained one pair of 2N3053's matched to within one h_{FE} digit from a batch of five 2N3053's off a Radio Shack rack. Since you probably won't have an intermodulation distortion measurement system capable of measuring 2nd order intercepts of +80 dBm, much less +100 dBm, you probably won't be able to adjust a push-pull CBTF amp for maximum ICP2in. However, you will still have an amp with intercepts of about +80 dBm merely by matching the resistors and 2N5109's or 2N3053's as described above. If you will order some 1% tolerance 10 ohm 1/4 watt resistors from Mouser (or your favorite supplier), you can probably do even better by trying different resistors for one and/or the other R1 resistors of the basic amp pair until you have made the collector currents of the two basic amps as nearly equal as possible, where collector currents are measured by measuring the voltages across the two 1% tolerance 10 ohm resistors R4 in each of the basic amps. Or you can simplify this adjustment by using the 25 turn 100 ohm cermet pots recommended previously for the basic amp of Fig. 2. In that case, one pot is set for approximately the current drain desired (again, current drain is measured by measuring the voltage across the 10 ohm 1% tolerance resistor R4 for that amp), and then adjusting the other pot until both collector currents are equal (as indicated by equal voltages across both resistors R4). If you do have an intermodulation distortion measurement system capable of measuring 2nd order intercepts in excess of +100 dBm (which is unlikely), then you merely adjust the collector current of one of the pairs to whatever value is desired, and while observing a 2nd order product produced by the CBTF amp, adjust the second pot to minimize the 2nd order product. Don't even attempt to adjust the push-pull CBTF amp in this manner unless you are certain you know what you are doing. To the best of my knowledge, there is no other intermodulation distortion measurement system than my own which is capable of accurately and reliably measuring 2nd order intercepts in excess of +100 dBm.

The R1 = 100 ohms, R2 = 560 ohms, R3 = 1800 ohms amps discussed above should have collector currents of about 16 mA (32 mA total for the push-pull), and if they do, then they will not need to be heat sinked. If you decide to operate them at higher collector currents (say, to obtain higher ICP3in), then they should be heat sinked. Many heat sinks are not easy to use, and some are impossible to use. The Mouser 567-7-120-BA heat sink is one of the easier heat sinks to use, but still difficult. The main problem with many heat sinks for TO-39 cases is that the metal material of the heat sink is not flexible enough to make it easy to mount the heat sink on the TO-39 case. I use small screwdrivers as miniature wedges to slowly open up the Mouser heat sinks until at some point a TO-39 case can be slid into the heat sink with the screwdriver still wedged into the top of the heat sink slot, so that when the wedge (screwdriver) is removed, the heat sink fits tightly (and I do mean tightly). I do not try to wedge the heat sink open in one try, but begin with the smallest possible screwdriver, and move up through progressively larger (but still small) screwdrivers until the condition above is achieved. You should not pry on the heat sink with a twisting action of the screwdriver. That will cause deep scratches and metal burs on the heat sink, which will make it more difficult to use, and perhaps degrade its heat dissipation characteristics. The Mouser heat sink should be adequate for up to about 30 mA continuously. However, there really is no good reason to run a CBTF amp much above 25 mA because, as shown in Fig. 3, with appropriate biassing, the increase in ICP3in above 25 mA is negligible. And if maximum ICP2in is desired, optimal collector current is in the 13 to 15 mA range, where no heat sink is required.

Fig. 4

I already had several kinds of heat sinks on hand (but not the Mouser 567-7-120-BA) when I started operating CBTF amps at higher collector currents (which require heat sinks). But I did not like any of the heat sinks I had at the time, mainly because they were difficult, if not impossible, to adjust for proper tightness of fit. So initially I made my own heat sinks from 0.021 inch thick copper plate, cut into 11/16 inch wide by 2.5 inch long strips, and bent into the shape shown in Fig. 4 using the shank of a 5/16 inch drill bit. The 0.021 copper plate was obtained from my local sheet metal shop. It is the standard copper plate used to make copper gutters locally. I was given scrap pieces free of charge. They would probably have cut it to the 11/16 by 2.5 size, but I did not know what size I wanted when I got the scrap copper plate. I used a nibbling tool to fabricate several sizes for testing. The 11/16 by 2.5 size turned out to be sufficient for heat sinking up to about 25 mA continuous collector current, and up to about 40 mA collector current for brief periods. Wider strips may be used for continuous collector currents above 25 mA. Tightness of fit can be adjusted easily with finger pressure: bend the interior circle together until the circle is almost closed, and it should be difficult (but not impossible) to insert a TO-39 case by hand. Removal of a TO-39 case from this heat sink is best done with the aid of a short piece of 3/16 inch or 1/4 inch hardwood dowel. The collectors of 2N5109's and 2N3053's are connected directly to the cases, so the cases, and, consequently, the heat sinks, are at +V DC volts. That is one reason why tight heat sink fit is required. The heat sink should not move around, and possibly short the DC supply. The other reason for tight heat sink fit is to provide good thermal contact.

The collectors of these kinds of CBTF amps should be at about +9 volts DC. However, with higher collector currents, a single basic amp will be a "battery eater." If you already have a +12 volts DC supply, use dropping resistors in series with the 10 ohm resistors R4 to adjust the collector voltage to about +9 volts DC. It is not necessary to operate the collectors at exactly +9 volts DC. Anything between about +9.0 and +9.5 volts DC is fine. Here is an example of how to estimate the required dropping resistor. Suppose you have a regulate 12 volt DC supply which puts out +12.4 volts with no load. And suppose your target is a single CBTF amp drawing 21 mA collector current. And suppose you decide to run it a +9.1 volts DC collector voltage. You merely plug into Ohms Law (V = IR), 3.3 = 0.021 R, and solve for R, R = 3.3/0.021 = 157 ohms. The nearest common standard resistance value is 150 ohms. Reversing the calculation, V=0.021 x 150 = 3.15 volts. So when a 150 ohm resistor is used, if the CBTF amp is adjusted for 21 mA, the voltage drop across the 150 ohm resistor is about 3.15 volts. There is an additional voltage drop of V = 0.021 x 10 = 0.21 volts DC across the 10 ohm resistor, so the collector voltage for the +12.4 volts DC supply should be about 12.4 -(3.15 + 0.21) = + 9.04 volts DC. A +12 volts DC supply is actually a better choice than a +9 volts DC supply because the dropping resistor (150 ohms in the discussion above) improves the thermal stability of the CBTF amp (if the amp attempts to draw more current, say, because the amp temperature rises, then the dropping resistor drops more voltage, and the collector voltage would decrease, causing the BJT to draw less current, cool down, and return to its previous operating point). Also, such dropping resistors provide additional isolation of the DC line, and high DC line isolation is important for proper operation of both the basic amp and the push-pull amp.

The discussions above are for CBTF amps with fixed resistors for R1. If you make R1 adjustable, with a 10 ohm fixed resistor in series with a 25 turn 100 ohm cermet pot, then you may omit the dropping resistor (150 ohms in the discussion above) and adjust the collector current(s) for your target value. The DC line isolation will not be quite as high, but it should not matter. I have operated CBTF amps both ways, and I can't find any measurable difference between the two approaches. Russell Scotka has been using a push-pull 12 dB gain (1:11:4) CBTF amp which I sent him several weeks ago as part of a broadband phased antenna system he has been developing, and I set the amp up for operation with a +12.0 volts DC power supply without dropping resistors. Russ' phasing system is the one described on page 75 of Victor Misek's The Beverage Antenna Handbook, Second Edition. That system uses a VN66AF power FET amp drawing about 90 mA current with a 12 volt DC power supply. With the power FET amp, Russ had several IMD products (all, apparently, 2nd order products). With the push-pull (dual 2N5109) CBTF amp I sent Russ, all IMD products completely disappeared. Russ lives in a high RF urban MW environment in Margate, FL, near Miami, so I doubt there could be a more convincing testament

to the effectiveness of a push-pull CBTF amp than the pounding Russ exposed it to. If memory serves me correctly, I set Russ' amp for about 25 mA collector current for each of the basic amps of the push-pull pair, i.e., for a total current drain of about 50 mA. This illustrates an important feature of CBTF amps: you get higher intercepts with rather modest current drains compared to other approsches. Actually, this is not a fair comparison because the power FET amp in Misek's original circuit is not push-pull, and the residual IMD experienced with the power FET amp is, apparently, 2nd order. However, a push-pull version of Misek's amp would require two power FET amps, with a total current drain of about 180 mA. So a push-pull CBTF amp is clearly a better choice for this application based on current drain considerations alone. Also, it is unknown whether a push-pull VN66AF power FET amp would have similar intercepts to a push-pull CBTF amp with the p-p-p FET amp drawing 180 mA.

A free-hand sketch of the bottom view of a PC board layout for a push-pull CBTF amp is shown below in Fig. 5. The sketch was drawn enlarged by 1.5625 so that when Fig. 5 is reduced by 0.64 it will be more-or-less exact size. The sketch in Fig. 5 was also drawn enlarged because it would have been impossible for me to produce an exact size drawing. I produced the PC board with Radio Shack dry-transfers and resist pen. The current dry-transfers available at Radio Shack are virtually useless; they don't stick well, they split, and they tend to wash off while the board is being etched. But if you are determined, like me, you can use them. I should explain certain peculiar features of the PC board layout, namely the unused pads. Some of the unused pads are for paralleling bypass and coupling/blocking capacitors. It is sometimes difficult to obtain monolithic ceramic capacitors with values larger than 0.1 uF, so I allowed for paralleling 0.1 uF capacitors to obtain the required 0.2 uF capacitors for flat gain to 100 KHz. I was also unsure if I should parallel 0.2 and 0.0047 uF capacitors for better bypassing and coupling from 100 KHz to beyond 30 MHz (i.e., to maximize the broadband frequency range).

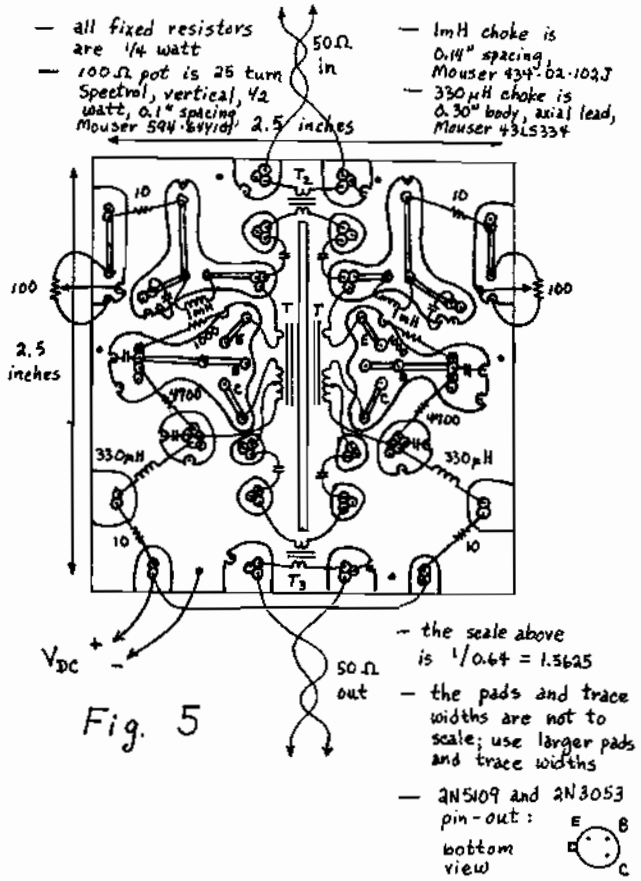


Fig. 5

I also wanted the option of having the collector currents adjustable with Spectrol, 1/2 watt, cermet, vertical, top adjust, 25 turn pots, or fixed (without the Spectrol pots, with fixed 1/4 watt resistors). And finally, I wanted the option of making the input or output push-pull (for example, to interface the push-pull amp directly with a two foot balanced air core loop, or to interface the amp directly with other balanced devices, such as noise reducing antennas, or receivers like the R-390A and HQ-180A with balanced inputs). So you will notice that either the input or output (or both) can be "floated" by removing the ground jumper(s), and that either side of the input and output transformers may be grounded. There are also several dark dots which denote holes drilled in the ground plane for ground pins or chassis tie points, and two for resistor ground points if the 25 turn pots are not used (which enable one to obtain non-standard resistance values by paralleling standard values). The cut-out along the center of the PC board is for a 1.75 inch long by 1.75 inch high rectangle of double sided 1/16 thick PC board which is required as a ground plane barrier between the two basic amps of the push-pull pair. The slot may be cut out with a thin emory grinder attachment of a Dremel tool, or with a miniature hack saw (in the latter case the slot will have to be started from one end, and the ground path at that end should be re-established with a heavy duty jumper).

If you don't like to or don't want to etch a PC board, you may use the Hayward & Hayward "ugly weekender" method to build the push-pull amp. Generally, the "ugly weekender" method involves using high megohm resistors as insulated standoffs (I use 4.7 meg ohm or higher). You can tack-solder the resistors directly to the copper foil of a piece of PC board, as they did, in which case the copper foil will face up towards the components. Or you can drill holes in the unetched PC board, stick resistor leads through the holes, bend the leads so that the bases of the resistors are flush against the insulated PC board material, and solder the resistor leads, as I do. The unetched PC board provides an excellent ground plane for the circuit, and circuits constructed by this method work well up into the GHz range when RF is routed with miniature hard line coax. You will need a somewhat larger piece of PC board, say 3 inches by 3 inches, and the ground plane barrier between the two basic amps of the push-pull pair will need to be a bit higher, say 3 inches. As a matter of fact, the first push-pull CBTF amp I built with soldered connections used the "ugly weekender" method of construction, and that amp is currently performing flawlessly in Russell Skotka's broadband phased antenna system. I did not use the Spectrol pots in that version, but selected fixed resistor values by hand (using a DVM) to match the colelctor currents in the two basic amps of the push-pull pair.

At higher frequencies, CBTF amps can be made much smaller using surface mount components because much smaller input, output, and feedback transformers are feasible at higher frequencies. For example, I have built a basic CBTF amp which is about 1 inch square to replace the 45 MHz 1st IF amp in my Drake R8 with ICP3in of about +30 dBm at 45 MHz and about 16 mA collestor current. The amp is a key ingredient in a mod which significantly improves the R8 dynamic range, and is described in my recent article, "Drake R8: Increased Dynamic Range, Mod 2," which should appear soon in DX News and DX Monitor. It is really not worth the effort to use surface mount components in the 100 KHz - 30 MHz amp described above because the transformers, chokes, and BJT's take up most of the space.

Another application of CBTF amps, already mentioned above, is to broadband phased wire antenna systems. As pointed out above, Victor Misek's phasing circuit is greatly improved when the original power FET amp is replaced with a push-pull CBTF amp. Other phasing approaches which require amps, such as Gerry Thomas' (1985 DX News) "Phase One" delay line circuit (adapted from John Webb's SW circuit described in Oct. 1982 QST, and recently revived by Mark Connelly in his article, "DL-1 Delay Line Phasing Unit," DX News, Vol. 61, No. 26, May 23, 1994), may also provide much improved performance when a push-pull CBTF amp is used. Mark recommended against using an amplifier with a delay line phasing circuit in a high RF urban environment, and mentioned amplifier outputs of +20 dBm for strong local stations. But such high outputs are impossible with a 12 dB gain push-pull CBTF amp, reasonable length wire antennas (say, 100 feet long or less), and a phasing circuit (which introduces loss), assuming that the listening location is a reasonable distance away from a 50 KW transmitting tower. I'd say that if you have -10 dBm on your antenna, then either your antenna is too long, or you live too close to the transmitting tower. My 1 KW super-local KRUS puts about -21 dBm on my wire antennas, so that with a 12 dB gain amp, I am looking at about -9 dBm. However, I would not use the 12 dB gain amp unless I had about 12 dB loss in my phasing system. Broadband amps, even ultralinear broadband amps, should only provide enough gain to make up loss, no more. The correct way to use a broadband amp with a phasing circuit is to use a resistive attenuator ahead of the amp with the attenuation selected to exactly equalize signal throughput, i.e.,

the amp and phasing system combined should have 0 dB gain, or at most 1 or 2 dB gain to overcome any additional noise introduced by the amp.

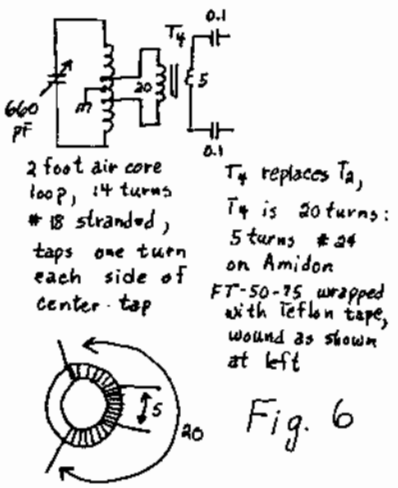


Fig. 6

An application which I intend to try next fall when noise levels drop is a push-pull CBTF amp running at reduced collector current with my two foot air core loop. This potential application was discussed above; cf. Fig. 3(d) and associated remarks. An interface of a push-pull CBTF amp with a two foot balanced air core loop is given at left in Fig. 6. After recent experiences with IMD3 in 50 to 2000 ohm transformers for impedance matching mechanical filters, I am not so sure that the FT-50-75 ferrite toroid specified in Fig. 6 has sufficient cross sectional area to prevent IMD3 originating in the transformer from degrading performance. An FT-114-75 or larger may be required for this application. In fact, to be certain that transformed IMD does not dominate system IMD, ferrite material transformers should not be used at all, but rather large cross sectional area powdered iron transformers. A T-106-15 with 120:30 turns of #30 enameled copper wire should probably be used, but it is such a hassle to wind.

Adding a tuned, push-pull, CBTF amp ahead of a receiver is, without a doubt, the most effective means of substantially increasing the 2nd order performance and wide-spaced 3rd order performance of a receiver. For example, a tuned, MW, 9.5 dB gain CBTF amp followed by a 4 dB attenuator, which will be described below, improved an NRD-525 intercepts by the amounts given in Fig. 7 below.

Fig. 7

IMD	NRD-525	NRD-525 + tuned p-p CBTF amp
1500 - 990 = 510 KHz	+60 dBm (ICP2in)	greater than +100 dBm (ICP2in)
600 + 700 = 1300 KHz	+54 dBm (ICP2in)	greater than +100 dBm (ICP2in)
2x600 + 700 = 1900 KHz	+39 dBm (ICP3in)	greater than +50 dBm (ICP3in)

The measurements in Fig. 7 above were made with a parallel LC tuned circuit ahead of a 3:15:9 turn winding push-pull CBTF amp drawing 16 mA collector current for each basic amp of the push-pull pair, i.e., about 32 mA total current drain. The parallel LC tuned circuit was an Amidon FT-50-61 with 48 turns #28 enameled copper wire, tapped two turns from the bottom, with a two turn link for antenna input. The tap went directly to T2 of Fig. 2. If this apprach is used with receivers which have higher close-in ICP3in, such as the RACAL RA6790/GM, a large powdered iron toroid should be used; otherwise close-in ICP3in will be degraded. A T-106-15 with 71 turns #24, tapped 3 turns from the bottom, with a 3 turn link would be suitable. In both cases, a 660 pF air variable capacitor should be used (which provides a tuning range of about 500 to 2000 KHz. If a 660 pF air variable capacitor is not available, whatever is available (but at least 365 pF) may be used. Of course, the number of turns on the toroid will have to be increased if a lower value air variable capacitor is used. The ratio of about 20:1 for tap and link should be maintained for other turns ratios.

For a LW tuned, p-p, CBTF amp, 150 turns #32 on an FT-82-61 with 2 turn link and 2 turn tap gave excellent results. The tuning range was about 140 to 600 KHz with a 660 pF air core variable capacitor.

For a high SW band tuned, p-p, CBTF amp, 12 turns #24 on a T-50-2 with 2 turn tap and 2 turn link was excellent, and had a tuning range of about 4 to 25 MHz. A T-106-2 toroid would, perhaps, be a better choice to guarantee minimum IMD, but too few turns are available for proper impedance matching with a T-102-6.

A T-106-2 is suitable for a low SW band tuned, p-p, CBTF amp, but I seem to have lost my winding notes for a 1.7 to 10 MHz tuning range using a 660 pF air variable. Oh well, I am sure you get the idea.

Back to the LW tuned, p-p, CBTF amp, if you don't mind winding, and winding, and winding, you should probably give a T-184-3 a try. It is a hefty hunk of powdered iron about 1.84 inches outside diameter, weighing about 5.5 ounces. On the other hand, there probably isn't any point in going to that amount of "overkill," since signal levels in the VLF band generally are not high enough to cause close-in IMD3 problems.

The link-input-tap-output LC tuned circuits described above are merely the simplest way to implement tuned CBTF amps. A second LC tuned circuit may be added at the amp output as shown below in Fig. 8. More elaborate tuned circuits may also be used, such as capacitor coupled or inductor coupled double tuned circuits with either tap or link feed to the CBTF amp. A tuned CBTF amp using the circuit of Fig. 8 gave excellent performance with T-106-15 powdered iron toroids and a dual 550 pF air variable capacitor when used with a Drake R8. But I am not ready to commit myself to a particular implementation at this time.

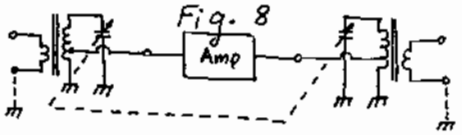


Fig. 8

It should be emphasized that a tuned, p-p, CBTF amp will do nothing for close-in IMD3, and can even make matters worse if signal levels are raised too much with too much gain. You local RF environment will determine how much gain ahead of your receiver can be tolerated before your receiver begins to complain. And your receiver idiosyncracies will have a bearing on that issue. For example, a stock Drake R8 with no preamp available below 1.5 MHz can easily accept a 12 dB gain, tuned, p-p, CBTF amp. However, if you have modified you R8 as I have, with the original preamp replaced by a 9.5 dB gain, non-p-p, CBTF amp which can be activated below 1.5 MHz, then a 9.5 dB gain, tuned, p-p, CBTF amp followed by a 4 dB attenuator is a better choice. With such an arrangement, my (modified) R8 has higher wide-spaced ICP3in and higher ICP2in than either my R-390A or my NRD-525 (both with no tuned preamp). But if you bash a modified R8 with a 12 dB gain amp in the MW band with the R8 preamp turned on, the R8 performance will not be nearly as good.

The above approach should also be suitable for other receivers with broadband front ends, though the amount of amp gain and the amount of attenuation following the amp should be adjusted for the particular receiver and local RF environment.

For many DXers, a push-pull amp may not be necessary, and a single basic CBTF amp may be sufficient to eliminate wide-spaced IMD3 and IMD2. It will depend on the receiver and the local RF environment.

As I said at the beginning of these notes, the purpose of this article was to summarize my experiences with CBTF amps using 2N5109 and 2N3053 BJT's, and to provide other DXers enough information to construct and use these kinds of CBTF amps. In addition, I pointed out that a fertile area for further study may be non-standard turns ratios, which could lead to better two-way impedance match to Z_0. Also, little is known about how to interface CBTF amps with broadband active antennas, and with tuned active antennas. In both cases, CBTF amps should lead to improved performance. And also, a thorough and complete study of the relationships between maximum ICP2in and collector current, and between maximum ICP2in and frequency needs to be done for these kinds of CBTF amps. Finally, tuned CBTF amps should be developed to improve the 2nd order preformance and wide-spaced 3rd order performance of broadband-front-end solid state receivers, and to overcome the designed-in degraded sensitivity on some or all bands which plagues many solid state receivers.

DID YOU KNOW that many broadcasters in the 30s and 40s would fade a vocal record down and read a commercial in the middle while the orchestra was playing, then bring it back up for the concluding vocal phrases? Records in stations were marked with 3 times; beginning to vocal, instrumental bridge, and overall playing time

Confirmed DX'er

Ken MacHarg kmacharg@mbs.hcjb.com.ec
HCJB - Box 39800 - Colorado Springs, CO 80949, or
HCJB - Box 17-17-691 - Quito, Ecuador (.5 oz.: 50¢)

Your successes in obtaining QSL's and other station items

Hello and welcome to our first official "Confirmed DXer" column. I am pleased that on just short notice I have received several contributions. I look forward to hearing from more NRC members in the coming weeks and months. Check out the address above and get your lists off to me. A quick trip to the U. S. during early November allowed me the opportunity to do a little MW DXing from Atlanta, even though my Sony 2010 died when I arrived. We'll see what the reception reports bring in the next month or two. So, here goes...

USA:

ALABAMA, WBLX, Fairhope/Mobile, 660, full data personal letter, bumper sticker, and business card in 5 days. v/s Meyer Gottesman, CE (Lazarus-LA)

FLORIDA, WWBF, Bartow, 1130, personal letter, computer-generated full-date certificate of verification, brochure with rates for commercials and coverage map, bumper sticker and business card in 5 weeks. v/s Jeffrey A. Thornburg, CE (Lazarus-LA)

KANSAS, WIBW, Topeka, full data QSL card, personal letter and bumper sticker in 13 days. v/s Paul Sjodin, CE (Lazarus-LA)

OUTSIDE OF US:

BELIZE, VOA, 1580, full data QSL card in 79 days, plus sticker. (MacHarg, EC)

BULGARIA, VOA via Vidin, 1224, full data card signed John Vodenik in 11 days for $ 1 to his address at VOA Bethany. (Burnell-NF)

BELGIUM, Belgische Radio via Waver, 540 and via Wolverton 927, full data cards and 3 stickers in 42 days following a follow-up with a cassette tape. (Burnell-NF)

MEXICO: XEAI, Mexico City, 1500, full data stamped and signed prepared card 4 weeks after follow-up and 4 months after original report. v/s Araceli Curiel V., Secretaria. (Lazarus-LA)

MEXICO: XENQ, Tulancingo, Hidalgo, 640, full data stamped and signed prepared card, personal letter, 3 CDs of Mexican music, bumper stickers and brochures about station sent by Airborne Express 17 days after follow up and 4 months after original report. v/s Alfonso Medina G., Contodor (accountant). (Lazarus-LA)

NETHERLANDS, Radio 10 Gold, Lopik 675, full data card, 2 stickers and program schedule in 19 days for 2 IRC's. Address: Postbus 10, 1000 AA Amsterdam. (Burnell-NF)

NETHERLANDS, Holland FM 828 and 1224, single form letter with date only, signed Jan van Zanten, plus two bumper stickers in 19 days for cassette tape and 2 IRC's. Address on envelope: Eendrachtsweg 36, 3012 LC Rotterdam (but letter says the street number is 37!). (Burnell-NF)

This month's contributors: Jean Burnell, St. John's, Newfoundland, Canada; Henry Lazarus, New Orleans, LA, USA; Ken MacHarg, Quito, Ecuador

I look forward to hearing from you this month with your contribution. --Ken MacHarg

Radio Roundup

Pete Kemp (KZ1Z) PeteKZ1Z@AOL.com
P. O. Box 73
Bethel, CT 06801-0073

News of the radio industry, of interest to DX'ers

Greetings all ... Alan Combs fans, please note that he has picked up a weekend overnight gig on WTIC-1080. He had been a favorite on many Big Apple Stations, most recently on WNBC, when they pulled the switch to become WFAN ... The Independent Broadcasters Network include weekday morning and Saturday evening host Doug Stephan who now resides at Boston- area based Talk America. Also gone from "Sonnynet" is overnight host Stan Major ... Roger Stark reports that KEEN-1370, in San Jose (country music since 1946) was taken down January 1, 1993 because the estate of the original owner of the station and land decided they could make more money with the land than with the station. The land will become an office park. The engineering staff was told to go out and find a place to put it back up. But where do you put 3 towers? Land in the Santa Clara Valley ("Silicon Valley") is very expensive, and any site would cost more than the income generated. So, a novel situation was dreamed up. The station was moved to the KSJX (1500) transmitter site and a new 4-tower array was designed using the EXISTING 4-tower directional array of KSJX. On Monday, 4/26/94, KEEN came back as KKSJ, programming an easy listening/big bands mix with live DJs, an occasional live local newscast, and the ubiquitous Metro Traffic ... Susan Ness has been nominated by President Clinton to become an FCC Commissioner ... Cook Inlet has sold KBXX, in Houston and its other radio holdings are currently on the selling block ... KJJO, in Minneapolis has switched from "Thunder Country" to "Classic Country" ... 83-year-old Eddie Saunders recently celebrated his 50th anniversary on the air, having hosted the Sermon In Songs program on WVKO ... Wolfman Jack is returning to the live airwaves for a Friday night gig on Washington DC's WXTR. The show will emminate from the Hard Rock Cafe. National syndication is anticipated ... KOGO is now on the Talk Trail running Unistar satellite feeds ... WLZR, in Madison, has axed its adventure in Alternative programming and is now simulcasting its FM sister ... Jim McInnes has just celebrated his 20th anniversary on KGB ... Stormin' Norman is back in Connecticut, this time on WWYZ-FM ... The Fabulous Sports Babe, Nancy Donnellan, has signed on to ESPN Radio, hitting the air June 1 with a 10am-2pm slot (ELT). She had previous been heard in Seattle and Tampa .. Dale Reeves, known to long time Connecticut listeners as "the Voiceman", has moved on to a morning slot at WDRE in the Long Island and Philly markets. He's teamed with Karin McCue fro WHUD- FM ... KOHT is switching from All Spanish to Spanglish programming ... If you throught that the *Enquire* and *Star* publications were just a staple of the checkout lines, watch out! Their parent company has announced the formation of a tv/radio division to disseminate their "news" in another medium ... WTOP recently celebrated its 25th anniversary as an all-news station ... KMOX-1120 has added Old Time Radio in its late night time slot on Sundays ... With the addition of Rush Limbaugh to its on-air lineup, KMOX has moved Nan Wyatt to Sunday mornings ... Former KGLD-1380 personality Kurt Warren is back across the river at WCBW in Columbia, IL (under the name Kurt Wallace) ... In Atlanta, a big sports coup has taken place. The Atlanta Hawks moved from WGST-640/105.7 to WSB-750 ... The Atlanta Braves will return to WSB beginning with the 1995 season. ... Columbus, GA, former Contemporary Christian station WHYD-1270 has gone to a Spanish format as WTMQ ... Panama City's WGNE-590 is the latest to jump aboard the all-sports bandwagon, while WPCF-1290 has converted to Travelers' Information ... The law firm of Smithwick & Belendiuk, P.C., a communications law firm in Washington, DC, announces the launch of "FCC WORLD" - a new BBS featuring FCC documents on-line, Forums on hot FCC issues and more. We have been featured in Broadcasting and Cable Magazine and in Radio Business Reports. Its a free service -check us out! FCC WORLD can be reached at 202-887-5718 -(14.4 baud) 24 hours a day ... If you would like to contribute to this column, I may be reached at the address above, via CompuServe 72376,2557, Prodigy PFVK52D, InterNet PeteKZ1Z@AOL.COM, the FIDO system in the Shortwave, Ham or Broadcasting echo areas, The Oracle 1:141/1015, or amateur radio packet, KZ1Z @ K1UOL.CT. So much for now.

Geomagnetic Summary

Phil Bytheway bytheway@ATK.com
9705 Mary NW
Seattle, WA 98117-2334

High "A" values indicate possible auroral conditions

Geomagnetic Summary September 20 1994 through October 17 1994

GEO - Geomagnetic activity
maf - major flare
mas - major storm
mis - minor storm
pca - polar cap absorption
SA - Solar Activity
spe - satellite proton event
ss - severe storm

Date	FLUX	A	K	SA	GEO	OTHER
9/20	70	4	2	very low	quiet	-
21	70	6	2	very low	quiet	-
22	71	2	1	very low	quiet	-
23	71	2	3	very low	quiet	-
24	73	4	0	very low	quiet	-
25	76	7	3	very low	quiet-unsettled	-
26	77	19	4	very low	quiet-active	-
27	75	16	4	very low	quiet-active	-
28	74	13	3	very low	quiet-active	-
29	74	5	0	very low	quiet-unsettled	-
9/30	74	4	1	very low	quiet	-
10/ 1	75	2	0	very low	quiet	-
2	71	10	6	very low	quiet-mas	-
3	74	55	5	very low	unsettled-ss	mas 0200
4	75	23	4	low	unsettled-mis	-
5	79	26	4	low	unsettled-mis	-
6	74	27	3	low	unsettled-active	-
7	84	24	4	low	active	-
8	86	14	3	very low	quiet-active	-
9	87	10	3	low	quiet-unsettled	-
10	87	12	3	very low	quiet-unsettled	-
11	88	24	2	very low	quiet-mis	-
12	88	16	2	very low	quiet-active	-
13	93	12	2	very low	quiet-active	-
14	93	5	3	low	quiet-unsettled	-
15	93	10	2	low	quiet-active	-
16	91	4	0	very low	quiet	-
10/17	92	2	0	very low	quiet	-

Musings of the Members

Dave Schmidt
P. O. Box 11502
Wilmington, DE 19850-1502

Times are local per Muse; submit double-spaced only.

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.

ERNEST COOPER - 5 ANTHONY STREET - PROVINCETOWN, MA 02657

- - - - - - - Well, so far this season I'm batting a thousand on verie returns, a nice personal letter from CIAO and a prepared card back from WCRY-1460, NC verie #181. The CIAO verie states they are not comtemplating moving to 790, but rather, that they moved off of 790 to acquire the present frequency. Ah, the HQ180 is back and perking as of yore, thanks to the skills & kindness of our Musings editor. I can't help but notice the proclivity of stations now doing all sports! I noted 2 such on 1430 on 10/23, one of them gave the non ID as "Sports Radio, The Fan", which I believe is CJCL, or have they changed calls, perhaps, to CFAN. Under either call, I need 'em, so I'll try for more info, and maybe at the same time, IDing the 2nd station there with all sports. On 10/24, no sign of the WGEA-1150 test, but I did manage to squeeze out some code IDs from the WPIE-1160-Test and a small portion of a voice announcement. I had them much better back last December at twilight topping the frequency, alternating with WCCS/WOBM/WVNJ. All but WOBM were new for me at that time, but WPIE didn't answer then, so I'm hoping they will this time. Darn, I plumb forgot to try for the needed WBZY-1200 test on 10/25! Speaking of 1200, WKOX is now playing "Real Country Music". Another new local has come on, WBMA-890 and they are gospel. Still no sign of WCRN-830, who have tested, but nothing noted in the last fortnight or so. Does anybody have a mailing address for either of these stations? WOMR-91.9 has now received the offical CP to move to 92.1 and to increase power to 6000 watts. Now all we need to do is to raise the money to buy a 6kw transmitter which I understand comes in around $50000 Even though the 92.1 is a commercial frequency, we will remain non-commercial, community access. We have til 3/96 to make the switchover. Maybe we'll hit the lottery! Anyway - Forward, March and hope to see some of you at RAY ARRUDA's 11/19!

ROBERT KRAMMER (N9MBK) - BOX 59681 - CHICAGO, IL 60645

- - - - - - - - It's been years since I last MUSED, so I guess an intro is in order. I am 41 and work as a Medicaid Specialist with the IL Dept. of Public Aid. I have been BCB DXing since 1970. The log is now up to 3930. I stopped verifying stations years ago, but did verify 2072. Now I concentrate on getting tapes. Much has been going on here in the last year. I finally got a computer and spent 18 months putting data in it. I am now 100% computerized for my DX logging. This summer, former NRCer Norm Geuder built me a new DX shack. It has an area for 4 receiving positions, although I am currently only using 3. As a part of the project, I got a KIWA loop, and it is a great piece of equipment! It is much hotter than the Radio West loop. In June, a major fire swept through my building, it burned out 8 apartments. I was fortunate & only had minor smoke damage. One thing that was damaged was the brand new carpet just layed in the new DX shack. It now has a permanent stain. I finally got around to figuring out how my phasing unit works. So far, I have been successful in nulling clear channels at sunset. Not new, but logged include: KTO2-1060, KNLV-1060, KLMO-1060 & KNAB-1140. I also got a new audio filter, the Timewave DSP59+. It is expensive (over $300), but it does an amazing job on code. It really brings out the beacons on LW & greatly amplifies CW IDs on DX tests. I am planning a review on this filter & several others in the near future. 73 de RK. (Yeah, I put an extra 'M' in your last name again, after I did it all those years in DDXD, its a hard habit to break! Welcome back to the fold, Robert, and we trust it won't be years again before your next MUSE-DS)

KEN ONYSCHUK - 3623 UNION AVE. #4 - STEGER, IL 60475

- - - - - - - Hello again from Chicago S Suburbs. A number of things to cover now. WWCA-1270 went silent in early Sept. But, unlike other lucky members, this frequency has been tough to DX. I'm also frustrated by so many satellite run stations that ID only when necessary. So far, I've logged just 3 new ones: 9/12 WQKR 11:20PM with news radio promo (then became a pest for a while), 9/14 WEIC (finally!) with ID 6:32PM & WKZT at 11:25PM with Great Gospel promo. A few weeks ago, I had WMRT with Foster Brooks hosting a game show, not needed I logged them previously as WVOY. Continuing, my sports interest has really dropped because of the strike & lockout. I did get a few minor league games taped from Indianapolis & Louisville and MARC MARINO sent one from Albequerque via KABC. I'm not a big football fan but do follow the U of I.. The NBA season is near & I'll follow the Bulls on WMAQ & the Rockers on WMVP-1000. Locally: After 35 years serving S Suburbia & NW IN, WCGO has been sold. Many changes & lack of sponsership caused them problems. New owners features a live talk show Mon.-Sat. with Mark Smith, the rest is mostly PRN stuff, then Sonny Bloch. I look forward to the Denver convention as I prefer to go W. I've met a lady who tolerates my DX hobby and should be remarried by

then. And I just finished up a weeks Arbitron survey, my 1st. Won't they be surprised with MY selections! And I'm still working as a courier for a local printing company, the 90 Dodge Van I drive most of the day has a good radio, too! Good DX!

MICHAEL COLLINS - 2021 MAIN STREET - STRATFORD, CT 06497-6338
- - - - - - - - I thoughly enjoyed the recent MUSING from PAUL MOUNT on the status of the dark and not-yet-activated AM stations in NJ, an excellent job of research. From a DXing point of view, I guess I would hope that they do not come on! Also, AM stations with tightly directional patterns have a very difficult time surviving economically these days. One NJ station that frequently came in on skip in CT, WRAN-1510, and which went off about 88, is deleted and no longer has a CP or license. I had thought the same was true of WGLI-1290 which has been dark since a 1989 fire, but was surprised to learn in a recent sale involving sister station WADO-1280 that WGLI apparently still has it license. I, too, have visited the FCC reference room in years past and examined numerous station engineering files. The info in the files sometimes is haphazard, and sometimes its difficult to tell if a station has been granted a CP or if the proposal is just pending. For several years, black owned WKND-1480 had a CP to go fulltime and move to 620, with seperate patterns day & night, but this was deleted in 1989. However, for a time in the 80's, the FCC staff told me that the computer had the 620 proposal as being on the air and licensed for WKND. It never was, WKND could never find real estate for the proposed array. The FCC files usually contain measured contours as proofs of performance, once a pattern or array is put into operation. Usually these maps show the 5MV contour, day & night, to prove there is a 5MV signal over the city of license, and also the night interference free contour is shown. Since this map shows MEASURED contours, it is accurate. So the map for WAVZ-1300, for example, shows the 5MV day & night & the 17MV interference free night contour. The map for WICC shows the 5MV day & night and the 3.26MV interference free night contour. These maps are always interesting and show the real story as far as coverage. FM stations do not have measured maps since they are based on milage seperation and not required. In CT, the only station with a CP or license not on the air on AM is WQQW-1590, which went dark 4/92. As far as I know WSAG-870 has been deleted. (WRJM-1450 bought the CP-DWS) On Long Island, the only station not on is WGLI. I recently visited Minneapolis for the 1st time for the NLGJA journalists convention. I was amazed that inside the hotel at 260 miles, WNAX-570 had a very good signal all day & fair at night. And during the day, KFYR-550 was audible all day with a little fading, 400 miles away. The midwest soil conductivity is almost as good as salt water! KXEL-1540 is running the Stardust nostalgia format, even in AM drive, but with live local & ABC news in the morning. At 5pm, they carry the audio of the ½ local news from KCRG-TV, then Peter Jennings, and at 6PM, another half hour KCRG newscast. I know many stations carry local TV newscasts but KXEL has to be the 1st to carry the audio from one of the 3 major networks. WSAI-1530 is running the AM Only nostalgic music format but is live mornings and afternoons. WQNX-1150 & WAVZ-1300 this month both started carrying the satellite talk format from the Independent Broadcasters Network in Clearwater, FL., featuring Good Day USA in the morning. WQNX dropped its all traffic format 10/5 and the owners are trying to find a buyer and "the station is not going off the air" per newspaper reports. WAVZ dropped Z-Rock. For the last 2 rating periods, WAVZ did not show at all in the field of about 30 stations in the New Haven metro. On 10/5 1:15AM, XEWA-540 was booming in here in CT. I am told WJDM-1530 just went all Spanish, with some other ethnic progarmming surviving on the weekend, including Polish. WJDM is expected to win a CP to go fulltime in the expanded band. FRANK WALLACE of NJ sent me a list of AM stations from the early 70's and in this country, there were some on the LW band. But by 1928, all the LW stations in the US were gone, while Europe had many in the 150-300khz band. I know in the late 30's there was an international conference and Canada wanted LW to be used in this hemisphere for broadcasting, with that nations vast expanses. With all conditions constant, in an area where a 50000 watt station on 1500khz covers a 40 mile radius with !MV, a 50000 watt station on 150khz covers 558 miles. But for some reason, the US opposed the use of LW and it never came into use for broadcasting here. Best wishes to all for the new DX season.

HARRY HAYES - 9 HENRY STREET - WILKES-BARRE, PA 18702
- - - - - - A string of busy days in Oct. at the shop have prevented me from doing much DXing, however things have now slowed down so I can now get down to seeing what's going on with the radio. Very recent DX is as follows: 10/22 6:45PM WJJL-1440 in with ID and promo for simulcast of Ch. 7 news, this is a new one for me. 10/23 7:05PM WPRO-630 thru a nulled WEJL. At 7:25PM, I came across an UNID Spanish station on 535 which was putting in a strong het against the 781 TTS. It seemed to ID as "Radio Cinco". S AMerica & the Caribbean didn't seem to be that enhanced tonight. I hope all had a grand time at Nashua. Due to problems with my business this year and other problems, I couldn't make it even though I was planning on coming last year. Maybe next year!

LOYD VAN HORN - P O BOX 176 - BRASSTOWN, NC 28902
- - - - - - - Hello to all. This being my reintro MUSE, its time to introduce myself & update some of the local DX happenings. Well, I am 15 years old and in the 10th grade. I have been DXing for almost 2 years. My 1st catch was KMOX on 2/25/93. And I have been hooked ever since. I have lived in such wonderful DX RF producing cities as New Orleans (the last & worst, less than 5 miles from 2 major wattage towers), Dallas (no DX), Jacksonville, FL (SW DX) & now here in the very quiet Brasstown, where even a CD player over 200' away can cuase some interference problems (this is not a problem because the whole family DXes, that is why the last name is familiar). I have heard almost 350 lifetime, almost 300 of those here in Brasstown, in 1 year, most of that coming last winter, without a loop! A verification from KYW finally came in, still waiting on others (return rate around 95%, just lucky I guess). Still waiting on WMAQ and other biggies. Total veries around 30 now. Cross Country has taken away much DX time but that will end 11/26 in Charlotte, NC (SE Nationals) then, in the height of the prime DX season, my Christmas vacation will begin in Dec. Then it is non-stop DX. Hope to get in a few more tests this season, though, as well as more reports. Well, got to go hit the sack, good luck to all, welcome to all new memebrs, best of DX! (PS-Still no NJ)

JIM WEBER - 3118 BRIARWOOD BLVD - LANCASTER, PA 17601-1202
Hello, all! I haven't MUSED in quite some time and thought I should send something in. I am back in Lancaster after a year in ALexandria, VA. I didn't do hardly any DXing down there, so much interference in the apartment complex that it was impossible. Just about all the listening I did was in the car on 1580 going back & forth to Lancaster on the weekends. WPGC was alway dominant anyway. There were some other very good stations in the area though, particulary WUST. They had a very interesting international format and ran a classic African show once a week. There was also a station on 1030 that played a lot of Indian music. Well, now that I'm back home, I'm still not doing that much listening except in the car! During the summer, WPGC really was dominant in this area, often getting up into the midstate. Now that the fall conditions are coming on, they are starting to fade and the Canadian & others are slipping in. I haven't had any decent receptions or added anything to my 1580 list since the winter but maybe there will be some good activity. WLIM, WWOF & WVKO haven't been heard in a long time. Our local station, WNZT, is on 6AM to 6PM so unless I get on the road before 6, I won't be picking up to much. I do admit listening to WNZT a good deal and particulary enjoy Ted Byrne's protractedsign off over 'Happy Trails'. The past 2 nights, WSRF has been very strong. I have enjoyed their raggae and other tropical sounds. It took me a while to ID this because my edition of the log shows them as a gospel/religious station. I do like the way this frequency behaves. Mr. John Bay has been reviewing a great deal of propagation theory and he tells me that there are some inconsistencies in the description of what radio waves do at these frequencies. Any way, they sure do something! By the way, if there are any Lancaster area BCB DXers out there that wouldn't mind sharing DX information, I would appreciate hearing from you! Have fun!

DON TRELFORD - P O BOX 120 - ST. ANNS BAY - JAMAICA, W.I.
- - - - - - I think it has been some time since I have MUSED here, though you might say I MUSE to myself all the time! (I tried it once, compares to baseball, but didn't like it!-DWS) Have been a little slack in DXing all summer (though th there is hardly a difference in seasons here), but did note that reception improves during the winter months, and is even now picking up, with a trend lately to the N & E. This may change at anytime, and can come from the S! Also a minor plague here is the Cubans, especially from the SE. For some reason, a lot of them are answering my reports and feel, that with my very limited Spanish, that due to the desperate economic structure there that they are looking for something from us. Some write from their home addresses. Veries have come to a stand-still in the last 3 weeks, total now stands at 414. My wife brought down 2 radios from the guest rooms in the house (we try to have 1 in each room), one is an Emerson digital, though the tuning dial is not, but it does go up to 1700khz, the other is a Yorx and only goes to 1600. They each have a couple of feet of wire in the back as an external antenna. More another time. 73s

DAVE SCHMIDT - P O BOX 11502 - WILMINGTON, DE 19850
- - - - - - It's really nice to be back to semi-regular hours and be with a very well run organization, I've just got to shake the cold/flu that landed me back a few more days last week, putting me behind in everything, including getting the column out on time (must be an apology in there someplace). Flying Fingers Dept.: Sorry DOUG BEARD, I moved you to SPRINGFIELD, should be SPRINGVILLE. New glasses have been ordered. DX notes have been sent to DAVE BRAUN, it was nice to talk with you again Dave, last week while at WDOV. One interesting note was very strong signals from WVMT-620 on 11/5 around 7PM, a good shot for those needing VT in the F. WWNC-570 was also very strong about the same time, they aren't heard that much in this area. That is it, and we WILL CUN7!