"Completing my first year of DX NEWS was quite a thrill. Now I'm back again sendine in my dues to buy a Dixers quide to Reality: (Mike Ramirez-TX)
ON THE INSIDE.

- Build Your Own Audio Filter - Phil Sullivan
- LA Split List Updater - Ron Schatz
- 1230 Log Updater - Dave Lewis
- Foreign DX Achievements - Norm Maguire
- DXIIng In the Far East - Pete Taylor
- Clippings, etc. - Various


## NEW MEMBERS

* Craig Healy, Box 182, Cumberland, RI 02864
* David J. Sullivan, 47 Knollwood Rd., No. Haven, CT 06518 (WN1TNS)
* Harry A. Schools, 1606 So. Newkirk St., Philadelphia, PA 19145
* Brent Taylor, 61 Warren Ave., Riverview, N.B., CANADA E1B 3R8
* Gary Houdek, RR, Munden, KS 66959
* Richard K. Briggs, 31 Lowell St., Ashville, NC 28803 (re-joins)
* James B. Pesek, Rt. 1, Box 510, Cary, IL 60013
* Robert A. Lazar, 1109 Niesen Rd., Pt. Washington, WI 53074


## RENEWALS

J. Herkimer, M. Scheel, P. Crabill, J. Pejza, H. Morgan, J. Silliman,
M. Bredvold, S. Rubin, R. Dickter, C. Conner, H. Weeden, H. Helms,
G. Bertonz, L. Gagnon, F. Wheeler, C. Freeman, J. Mikuckis, J. Ridge,
J. Hupke, L. MacGill, J. Gudgel, J. Roberts, J. Mockus, R. Truax,
W. Brown, A. Retzlaff, J. Radovich, R. Van Wormer, B. Winkelman,
R. Arruda, E. Cruser.

## FLASH TIPS \& SUCHLIKE

$12 / 15$ : KLUC-1140 Hrd by Wolff, Hansch, Boyd, Forth, Wayne Murphy w/ FM simulcast rr. Not hrd by FED, RjM. WKTJ-i 380 hrd by RjM, FED, Murphy. Tentative by Hansch w/TT. Not hrd: Forth. WRAM-1 330 hrd by FED o/u WFTP, Hansch, Forth (U/KFH), Murphy. WWNS-1240 hrd by RjM, Hansch, Forth, Murphy (u/local WINN). Not hrd by FED due to WGBB. KXBB-1000 hrd by HWB, Hansch, Wolff, Murphy, Forth (w/ WCFL off ET 0309-24 per his request). Not hrd: RjM, FED. WDLM-960 hrd by Hansch, Forth, Murphy. Not hrd by FED. WKLF-980 hrd by Murphy. Tent, w/TTs, poss. IDs by Hansch. Not hrdi Forth, FED. $12 / 22$, WENN-1 320 Tent ID $0400 \mathrm{w} / \mathrm{FM}$ ment, by Hansch. Not hrd: RjM. WCCP-1560 hrd loud w/cal.s by Hansch. $12 / 24:$ WASR-1420 hrd 0006-11 by RjM W/ Code IDs, TT, lengthy ID at end. He asked that they use this tape on $r / c$. OTHER: WHLI-1100 is off the air due to excessive vandalism. An employee has been arrested for same per Foxworth, Galerstein clips. Wall1340 is off indefinitely due to a major fire per Galerstein. WOPI1490 is AN-Nitecap contrary to previous report. Format is c\&w w/ occ. Gospel normally and also Jepko's off-nite. Stn. silent MM to 0500. Regular 0500 nx weeknites is NBC then returns to Jepko. (Todd Hyder) A new station will be on soon in Barrow, AK on 680. Will be all Eskimo pgmg, non-profit, temporarily 1 kw . Plans for $10 \mathrm{kw} / 5 \mathrm{kw}$ NDA by $6 / 1 / 76$. Calls not known by Bob Hlivak who tipped us, but he will check. Info/veries from Jim Dillon, c/o Silakkuagvik Comms.. Inc. Box 546, Barrow 99723


## NOTES \&c FROM NJPC

From November's CQ Magazine via Tom Bull comes word that Hammarlund has some unused, retested receivers available. They listed HQ-180A, SP-600-JX21, SP$600=V L F$ and R390A-URR. Don't know if there are any left now, but enquiries
were to be directed to Hammarlund Mfg. Co., 20 Bridge St., Red Bank, NJ 07701
were to be directed to Hammarlund Mfg. CO., 20 Bridge St., Red Bank, NJ 07701
From Dave Bennett comes word of some new NWT stations funded by the NWT Dep of Information and listed in their 1973 Annual Report. Only data is what's listed below:

Broughton Island (due No, of Pangnirtung on Baffin Isld.)
Coppermine (on the western end of Coronation Gulf)
Fort Franklin (western end of Great Bear Lake)
Sanikiluak (no idea where it is, hi)
Anyone have further info ????
Congrats to member Jim Critchett on the occasion of his recent wedding. The ceremony was conducted by another member, Calrence Freeman, who is a United Methodist minister.
international dx digest
editor: Alan Merriman

## - Phone 703-354-2135 Before 2200 ELT "All Times Are GMT "Deadlines Are Friday"

Greetings. Ifter a week of rest, back to the grind. A new typewriter in use herean electric, and since this is the first time I've tried to do this thing on an electric typewriter it should be interesting. Should make for a better looking column once I get used to it. Here we go . . . . .

EDITORIAL COMMENT: In the $12 / 15 / 75$ issue of DXN there was an article titled World Radio Allocations". In this article the author put forth some proposals which he suggests NRC support. These ridiculous proposals have absolutely no merit, and deserve no support - not from the NRC or any individual DXer. In fact, I wonder why the NRC even ran this article to begin with. If all areas of the world were to adopt a standard 10 khz spacing, this would be fine from a technical standpoint but it would also effectively kill much of the International segment of our hobby. In fact, many International DXers in the Eastern part of North America are looking Eorward very much to the day when the Pacific/Asian area adopts 9 khz spacinges The author also suggests that the MW band be extended to 2 mhs . If this were done, the 160 meter band would be taken from the hams. Why support a proposal that would cut the throat of one of our fellow radio hobby groups - in fact the only hobby group thats likely to have any influence whatsoever at the Radio Allocations Conference. Neither of these proposals deserve any support, and I personally feel that its too bad that the NRC appears to support them by printing this article. $\#$ oplNoNS
wiRC ANS STICC ARE Socce WSRE ANS STICC ARE SOLICITE ON TAE SUBJECT WE WILL RUN RUC SUCH OPINIOLS


CHANNEL ISTANDS It should be known by the end of 1975 if these islands will have their own MN frequency. The matter is now being dealt with on "An International Besis". (Patrick, MUC)

COLOMBIA A new stationcis HJPO Radio Majagual on 1430 khz with transmitter in Corosal and studios in Sincelejo. Power is 10 kw and they went on the air on $8 / 11 / 75$. Adr is Edificio Turbay or Apartado Aereo 542, sincelejo. (Nensen)

DAHONEY The new name for this country is the People's Republic of Benin offective November 30. (NZRDKL)

INTERNATIONAL WATERS Radio Caroline/Mi Amigo on 1187 khe was off a few weeks in Nov. after having trouble with the British Authorities as they had to go ashore during a storm. Evidently they got back their equipnent as they now can be heard again. S/ storm. Evidently the
off is 2400 . (Nensen)

ISRABL There is a new station at Jerusalem on 529 khz with 100 kw . (MWC)
MOROCCO Rabat on 818 khz is now 25 kw atcording to the EBU. (Nensen)
PORTUGAL Radio Clube Portuguese closed its 100 kw transmitter on 1034 khz at 2107 on 11/25/75 after a unit of the Armed Forces had threatened to destroy it if it remained on the air. Govemment MN Iisbon studios are closed and EN broadcasts originate in Oporto. All commercial stations link with Government stations for news builetins. (Sennitt, MHC) *All Portuguese stations were nationalized on $12 / 3$ with the exception of Radio Renascenca which was blown upsa month or two ago. (Nensen)

SAUDI ARABIA New station at Muzia on 702 kh w with 50 kw . (MIC)
SURINAM There is supposedly a new station that may or may not be on:the air yet, Radio ABG on 1030 khz , possible s/off at 0430 . Address is Schnerders Howardstraat. Paramaribo. (MWC)
Now, on to thata been heard . . . . .
520 -WISST GRPMANY Hannover, 23 db at 2350 on $12 / 20$. Mx in slow dance tempo, followed by GG announcements. Best ever; power Incresse? (Bailey) First report of this one that I can remember, I've looked for hil before but never had any luck. (MD)
-GRENADA Radio Grenada in vy well w/as talk, 2348, 12/12. (Connelly) HISXICO XENA San Luis Potosi, SLP 12/11 $0330 \mathrm{w} /$ same power as XEX-730; S94. Had piano mx and a horrlble singer. (Iobel) Fantastic catch - must be new for you. -COSTA RICA (?) Would imagine this is TISBJ drlfting around again. Hrd 0315 on $12 / 1 \mathrm{w} / \mathrm{soft}$ SS mx , slop frem 550. (Falconer)
$-S T$ KITTS ZIZ strong as usual w/Big Band mx. 0300 12/1. (Falconer)
-PUERTO RICO WKAQ o/u WTAG, w/WKAQ mas Musica SID. First reception in Sudbury; this is the normal dominant at my W. Yarmouth, Mass. Iistening post. At 0313, 640 on $12 / 3$. (Connelly)
-FIJI (Tentative) Lautoka, $11 / 24$, band $m x$ 1106, then first bars of GSQ, off by
1109 . Fiji about the only thing possible here, this during KFI SP. (Vernon) - VENBzURIA YVQO Ondas Portenas, Puerto la Cruz 0900 TC, ID vy good 12/15. (Straus) UNID SSer noted $u / C M W$, s/off 0500 . The male ancr finishes by 0500 then children sign what appears to be an anthem for 3 or 4 minutes. Neve noted it several times on weekdays, never on the week end. (Brown)
645 - PARAGUAY R. Caaguazu 0545-06\$5 previous unid for me many times, hrd well at times with my new SM-2, many mentions of "paraguaya", SS OM tx, SS vocals, 0604 ID as R. Caaguazu, mention of la capital, vy good sig at times, never understandable $w / m y$ longwire, but $S M-2$ helped $w /$ this which is country 47 for me 12/17. (Straus)
690 -HAWAII KORL $12 / 15$ solid S7, ID and location at 0800. (Hartlage)
6471 -UNID JAMMER AN OC came on for 25 seconds, sweeping back and forth between 646 and 648 khz and went off for 10 seconds. This procedure was repeated; first heard around $2120,12 / 12$, still noted past 2155 . (Connelly)
690 -MFXICO XFTRA $12 / 60100-0115$ off and apparently having trouble. Kept switching carrler on and off. Another stn was audible u/KNBR slop; pro CNBC. (Lobel) -DOMINICAN REPUBLIC (Tentative) Per phone call to Merriman. Het on low side of WLW/LAs-700, no audio extractable, 0010, 12/13. 701 het also present at the time. (Connelly) -COLOMBIA HJCX Cali o/several other LAs, w/nx about Bogota, 0335, 12/3. (Connelly) -ST VINCENT (Tentative) More than likely this as only thing listed here. In w/ female ancr in EEP and what sounded like religious mx, audio very shallow, at 2335 on $11 / 26$. (Falconer) Another repdrt of this one, sure wish we knew if they were definitely on the air - I might get ambitious enough one of these days to write them and try to find out what they are doing these days. (ED) $0117,12 / 3$. (Comnelly)

- Hompras 77 lurvy juobably thia w/htts of mx and SS talks 0230, 11/19. Wasn't /PORTUGAL Norte hover. (halocber)
719 -PORTUGAL Norte vy strong, one of the best TAs, w/man in PP doing sports broad-
790 cast, $2145,12 / 12$. (Connelly)
-DEMINICAN REPUBLIC HIZ Santo Domingo 0935 ID as R. Nacional 12/15. (Straus) - MEXICO XEX $12 / 110305$ in like a local w/mx and ID plus mention of Mexico City.

735 -ECuMDOR HCBG1 wy strong w/uptempo mx, fast SS ancr between cuts, several Melodia IDs, 0250, 12/2. (Falconer)
750 -VENEQUETA $A$. Caracas hrd w/perfect audio 0720 12/15; US rock and frequent IDs. (Hartlage) *YVKS bombing in $0 / W S B$ w/Nights on Broadway by the Bee Gees, R. Caracas ID (man in SS) then "The Night Chicago Dled" by Paper Lace, 0503, 12/13. (Connelly) *0525 like a local w/WSB nulled, SS mx and ID. (Straus) -SENEGAL Dakar w/strong carrier, weak audio; man in AA $\mathrm{w} / \mathrm{sing}$-song talking, het of . 2 khz on low side, $2215,12 / 12$. (Connelly)
stn not noted vy dominant here $w /$ man in SS, then IS and ERS rock. New Morocco
780 -CUBA CONN w/mixture of SS and US mx at 0515 total radio at Route 27/Sudbury River. Noted w/march mx pulverising WBBM on car R390A, 0530, w/considerably more competition from WBBM, on 12/10. (Connelly) -UNID TA Vy potent OC here on numerous occasions; $2128,12 / 12 ; 2355,12 / 12$; also 0330, 12/9. Bither a new superpower station testing, or maybe a change in CSB9 operations due to Portuguese political situation. (Connelly) operations due to Portuguese political situation. (Connelly) and "X-Hock 80 " ID at 0131. (Lobel)
-NETHERLANDS ANTILLMS PJB Bonaire $12 / 80813$ poor sig w/PP u/slop from $M 00$ test tone, (Lobel)
B09-UNLD (Yugoslavia or Spain) Semi-operatic vocal, not EE, loud here at 0520, 12/14. Faded to just a het on HJCY at 0540, WGY off. (Connelly)

818 -ANDORRA Sud Radio w/potent sig totally o/Morocco/Egypt/ HJED/ WBAP. Man in FF read list of job openings, sore in auto industry; one required 5 years of experience. at 0515, 12/14. (Connelly)
-MOROCCO Rabat dominant $w /$ belly-dance mx way o/distorted 2nd stn audio (from being slightly off freqi), 0540, 12/14. (Connelly)
825 -PANAMA R. Peninsula well o/THtania, producing low het. Man in rapid SS w/ mentions of Panama, (Tltania had Carpenters record), accordian mX was followed by fanfare and clear R. Peninsula ID. From 0530 to 0540 on 12/13. New country -UNID TA Potent OC dropped off at 0000, 12/13. (Connelly, last 2)
834 -BEUIZE Much stronger than 830 and $840 \mathrm{w} / \mathrm{US}$ C\&N mX by Linda Ronstadt, 0337 on 12/13. (Connelly)
840 -PANAMA Absence of local WHAS ( 6 miles away) produced R. Libertad 12/15 07340759 when full ID was heard. (Hartlage)
844 -GILBERT ISLANDS Tarawa. Carrier detectable here w/EMO 0815, 11/24, too low for any audio though. Will watch this. (Falconer) * Strongly suspect Gilbert Is. here 12/15 0908-0912. Apparent ID hrd 0912 including bird sounds. Vy poor a audio, direction right for Tarawa.
 XEMO. Inaufficient for report to stn due to XFMO slop. (Lobel)
$860-\mathrm{MEXICO}$ XFDJ Durango, Dgo., $12 / 131302 \mathrm{w} / \mathrm{NA}$, several call IDs, Power, etc. be-
fore XFMO on. First Durango stn for me, (Seaver)
PaNAMA Ehitre, "Radio Reforma" heard fair $11 / 281015$ tune-in, mention of
Panama, "R, Reforma de la noche" ID, (Seaver)
870.1-CUBA. (Tentative) Likely the sourai of ripping het on WWL, 0518, 12/13. (Connelly)

900 MEXICO XEN 12/11 0341 probable one heard here u/slop of local KDE0-910. Thought I hrd mention of Mexico City. (Lobel)
935 -MOROCCO Agadir fair to good w/vocal nx followed by man in AA addressing crowd at low audio level, bad CBM cl mx spiatter, 0530, 12/13. (Connelly)
940 -COLOMBIA $R$. Eco, Cali in like a glant for a couple of minutes $\mathrm{w} / \mathrm{R}$. Eco ID at 0630, SS mx, time, $12 / 17$. (Straus)
950 -MFXICO Talk about noise plus slopl You should have heard this one on $12 / 8$ at 0145. Audio quality sounded like they were using a cat whisker for a matr and a piece of tin foil for a mike. A little better at 0148; but not muchl Slop was from 935 to 970. Also audible on 990 and 1030. (Lobel)
975 -UNID LA Andean-type mx 12/8 1025-1033, some talk, no ID hrd. Probably Ecuador. -MEXICO XECL 12/11 0353 heard w/"X E C L Radio Rama" ID; Mexigimann log has "Radio Mundo". (Iobel) /(Hanavan)
1005 -COLOMBIA HJDP Neiva, Radio Colosal ID at 0645 on 12/12. Many mentions of Colosal afterwards. Good level (S7). KOMO and XBDX slop a slight problem. New.
1010.4 -UNIDIA Hetting WINS at 0325 on $12 / 3$. (Connelly)
$1025{ }^{\circ}$-COLOMBIA Ibague, "Ecos del Combeima" weak $12 / 8$ at $1011 \mathrm{w} / \mathrm{good}$ ID. (Seaver)
-SPAIN (Tentative) Likely San Sebastian here w/male SS ancr, female vocal during good TA cx, 0552, 12/14. (Connelly)
-UNID LA SSer here at 0637 on 12/12. Belleve there is a Panama stn here. IRCA log says David, Panama, La Yoz del Baru. I hrd possible mentions of la Voz and David (pronounced Dah-Beed) f but nothing sure. (Hanavan)
1030 -COLOMBIA In well w/mentions of RCN and Carousel; NBZ off. 0550 12/14. (Connesly)
1032 V -लOLOMBIA Cail, "R. Pacifico" seperable from $103012 / 90418 \mathrm{w} / \mathrm{IDs}$. Lots of drum
music. (Seaver)
1034 -PORTUCAL (Tentative) Interspersed mx and talk (sounded PP). Poor/fair, WBZ off, $0642,12 / 14$. (Connelly) $*$ Soe item in $1 \Delta x 8$ changes.... Rj $\varepsilon$ - Merte back..
-CHINA Okay, JJ not CC; the two sound alike to me. Note Seaverl (Iobel)

1085 -HONDURAS (Tentative) R. Aeropuerto the one here per RFS list, noted w/slow mx,
then SS talk, poor to fair, 0550, 12/13. (Connelly)
10888 -ENGIAND BBC Crowborough. Fair level, man talking; 0310, 12/9. (Connelly)
1106 -WEST GFFMANY AFN Munich strong and in the clear w/sports in Kes, male ancr. Item about upcoming Olympic Games in Montreal noted; 2nd stn way $u / w / m x$, zero Item about upcoming olympic Gat
beat, $0627,12 / 14$. (Connelly)
1115 -ITALY Fair to good w/man and woman in II alternating, 2 or 3 notes of tinkly mx occasionally interspersed, 0629, 12/14. (Connelly)
1120.5 -INID IA SS mX at fair level, whipping severe het on KNOX, $0421,12 / 13$. A het

1165 also noted on 1119.8 khz . (Connelly) Strong $11 / 26$ at 0100 . (Falconar)
1165 -ANTIGUA Strong here most eves $\mathrm{w} / \mathrm{rel}$ pgis. Strong $11 / 26$ at 0100 . (Falconer)
1174.8-thm Btrong $_{24} 4$ here potat aevaral nighta, so ID $n$ ted yet. Likely the II or IS allghtly off freq. Lant noted 11/2? 0300. (Falconer)

 Jinglesi considerable donestio nlop, 0622, 12/14. (Connelly)
1186 -GuThNuL (Tentative) Mer HFS liat. Kale 35 vocal w/guitar aocompaniment good lavel, 0/07, 12/13. (Cornelly)
 the acone corruapondeat eovaring fighting in Lebano. SAH notiteable during railes, $0621,12 / 14$. (Comnelly)

1205 Fruscs Bondeank likely the one here at good carrier level $\mathrm{w} /$ wok modulation male anor, 0631, $12 / 14$. (Connelly)
1244 -cizar prain bur utimatotb, $39+40$, totally dominant - no Albania. mentioning Hadio 2 was followed by tiwe pipe at Opoos thea folk ms by Maddy Prier and Stenloye Span ineluliting part of the hym "Caudete". Asor (man) olshed all a good eorming, then played "Evil Yoeas" at op05. "S1g at sitrongest Lovel (-VCAU) at OP14 during Dave Giark 5 eldie, thundering in w/to gix in 8 kht nelectivity pealtion, Aner anntionel it mas beve Glark's Mrthiay. Stily good pail 0615, 12/14. (Comnally)
 lation of that carrier as no 3 HH noted, $0633,12 / 14$. (Coenelly)
1268 - -ritit cireiary Meumunetar fair, man in 00, 0693, $12 / 14$. (Comelly
 too muffled to detornine mash else, 06y\%, 12/14. (Comeselly)
1299.6 -03TD 3trung het on 1290 at 0345 on $12 / 13$. (Coerel1y)
 2235 an 12/12. (Conne11y) /(Cenne11y)
306. AhMMIA W/umann in sis, fatr to 50 12/12t also 2338, 12/12 and 0352, 12/13. (Ocmse11y)


 to wale soneone up (the engineer?), gote then soanded, followed by feavle to whke someone up (the engineer?),
group wooal, $0600,12 / 14$, (Conneliy)
 bents, nome G7to stop, 2259, $12 / 12$. (Donmel1y)
-Limergociag strong w/Gi anar, Jhone calli, fingliss, and max which was mix of 41 sco-ruck asy

 beginnting s/on $044012 / 9$. (Polerts)

- ustria finena in woil sanaed to be the mabject. At 0603, 12/14. (Camnelly)
Sain (Tentative) Kan in 95 before nuditanoe (whioh oocaniomally laughed and spriauiat). Atop erowl of 1 low heta during a parlat of good th car not 13 kely on 14 an never hat during auroral ex, 2311, 12/12, (Oonnel1y)
1502 -Fotim Karany good w/an in Polish 0636 nixing $w / 2 \mathrm{nd}$ Th (poob Spain) w/Lively
 $\mathrm{max}^{2} 0600,12 / 14$. (Cannelly)
(Falponer)
 may trien, has beon hat mevernl tives simoe, Conal have inervased powne,
1511 - ingid (Likely E, Gemazy) Fotent het an Carg/nez, ooeld dot pull sulio, 2342, 12/12. (Comnelly)

 Fsating ca sa other The ware poor at thia tiae. I've oaly logege thile a relatively hieh listitule peth sienal be enhanoed st a timp 21ke thie thether than bo knocked out? i'Moporw FI IS Laped olearly ist 2230. (Fatmen) *hen of 2200 (oont)
$19+6$-JKJiDE (Oont) $12 / 5$ I hesm the LESER Forelgn Servige IS here. The place of ocigin ill mionown, but I greaune it wan somewhare in Buropean Manela atnce
 bonoone sume 1.l. Last Info I sak hai Tlunitea moving to 935, but have sees mo up to date Aussian listingn in a nem tive, Maybe sew virti will help,
 fant $7 Y_{\text {. Fotent }}(99+15)$, better than 1586 at 0321 , $12 / 9$. At potent level, shallow acdalation w/ann-wasin tislogue (apparant drawatie presistation) followed ly fesele woeal of Bestles jone "Iet It Be", 23t5, iv/zts (Coe-
 poirvical Forto. Kan in PP, fropment of $\mathrm{Kx}_{\mathrm{F}}$, then man and woman alternatinge Vy atrong. 2mi ith unler, 11 k aly Italy. it $055712 / 14$. Stromest TA tor
 on $12 / 12$. (Contieliy)
 weaker than 1586 , tob mach cfill for sulic, 0400; 12/13. (Oennelly)
 talk in 66 at $0555,12 / 24$. Noted at $0723 \mathrm{w} / \mathrm{female}$ vocal in 66 , otple that of old Imoodvay mailical, utill at looal level. Thia etn simaye a good high tont or inticator, ms 028 is a rood low hand intleator. Had intervatine
 fron ultruadde OXIN-1570 peat, 2211, 12/12. (Comnelly) in and out 0500$0700 \mathrm{w} / \mathrm{ge}$ and ax. $12 / 9$. (Hoberta)



A fen verles . . . . .
 as Rallo Mev Zealanh, Kururs Houeb, The Terrace, P.O. Bax 2092, Vellineton.
 $0 y 49-2 y 00 \mathrm{Kon-Thar}$, to 0100 Fri-fist. ( (Poyd)

920 -hy graidio . In Oreynouth, oannot read mangars name on get. (Magutre)
 Junes, DJ and "The Serretary" * Address Box 366 or Box 18. (Hansen)

The ropdeters for this tsare . . . . .
3111 BaItat - Holden, Hawnachuaetta

Eerneth arcul - Ballekery; Karylam Grunlls Satellit 6001, Bil-2


Hichand cranh - Philadeljhta, Pennaglvanda 10946/453, Sanserino loop

 Pat HARTLACS - Jeffersontowe, Kentucky Hg-180, LSCA
Albert LOESi, - EI Cajoe, California III1504, Sanserino loop, 15* longrire Bo minties - then, Bredea
Mors Madolis - Bocoluly, Baval1 H5-180, Banserino loop

sandy geiven - Cula Vista, Callfarnis Ho-180a, H390/0az, Sansering lopp, $60^{\circ} \mathrm{IL}$

Brlan HEescy - Wanogever, Frit1mh Columbia III1500, BM-2
hats it. I laow its a $115 t l e$ nlopry in mpota but ita a new typenciter and I' dolng it at work and I forgot my comention tape and have triod to whe do rith
 reat of the clsh for that matter. Support has ganarnily been good this seagon tut re can slvays ase nore, Set you in 7 .

31002
ectitor- VNee Boyd日eO VV.Itbexty Ctrard, Ohie 44amo

Frst: Seens there is a new pirate in the NYC area. First notified of this by Coleman, who colled to inform me. Then further info via a call from Foxy. Call is WCPR and is on 1616 Khz (formerly 1620 Khz ) and accounces a sked of Friday eve, \& Sat. eve,-llPM to 2:30AM. Sez is licensed by FCC, mention 50 Kw power--Foxy estimates power of between $200 \& 500$ watts. Thanks to all reporters for info on this station.

## changes .. from the FCC:

680 *CP* AK Barrow--seeks call KBRN
720 KDWN NM Seeks 50Km nite power..
 950 WCTN MD Seeks 2.5 KT daytime--DA 1100 KFAX CA Seeks incremse nite pow
nites from present day site.
1190 ** IA Marshalltown-seeks 500watt day/250 nites o They all say
1260 WNOO TN Seeks daytime power of 5 Km
1280 WYVE VA Seeks day power of 2.5 Kw
1310 WPRJ NJ Seeks call WQTK
1360 WCHL NC Seeks day pover of 5 Kw . nite power 2.5 Kw 1360 VZYO MD Ex: WMHI
340 WHD TN Seoke day porer of 5 K -DA
1440 WHDM TN Seeks day power of $5 \mathrm{Km}-\mathrm{D}$
1480 KVAN WA Seeks 5 Kw DA-Nites, seperate nite site.
2540 WDON MD Seeks day power of 5 Km
1550 WOGO FL Seeks call WCCZ
KQWB ND Seeks 5Kw nite DA, change city to W. Fargo, ND 1570 WDEW MA Seeks day power of 2.5 Km
1600 KwOH CA Seeks nite power of $5 \mathrm{Km}--\mathrm{DA}_{\text {. }}$
..now--from reporters:
740 CBNM NF On Sunday eves., -CBC runs "Cross Country Network", and has cutaways, for regional outlets to give area phone numbers to call. Foxy notes hearing CBNM $u$ / the //stuff giving different phone numbers, so this is a good indicator of conditions (Foxy)
790 CFDR NS Still here, but plans move to 680 moon (Foxy)
1330 KFH KS "KFH Nitebeat" Teletalk at least Mon.-Fri. 0000-0300 CST, not sure if this runs past 0300 or not. Sp still Sunday Morns- 0205 to ???? (NZ) 1560 WRSJ PR S/on 0355, then $n x \& E Z$ MX 0400+ (KA)
*. .Now from former NRCer--fubert Miller---
CARRIER CURRENT STATIONS in Seattle
1210 KLK 100 watt En-Fri. 3:30P-6PM, Sat. 4PM-9PM (In Wedgewood or North Seattle--erratic sked-RR-PSAe--request line-- best DX is 20 miles) 650 3?3 5 Watt--Philadelphia Church (Ballard-w. Seattle--church service broadcasts--best DX is 7 miles)
ALSO: : KCBK 89 FM--30watt (RR, best DX is 25 miles)
TPST RESULTS::
960 WDLM Tent: TRS-RjE NO: TRS-PRM-BAB-MD-FS-RA Yes: Ross-RLK-KDF 1090 WMI No: TRS Yes: NZ-RA-KDF-KA-Bull
980 WKLF No: TRS-PRM-RJE-FS-RA-JS YeB: JRS--DMe

1000 KXRB No: PRM-RJE-FS-Foxy-KA-RA-TRS
Yes: HWB-Bull-KDF-BAB-JS-ELK-JRS-DMc-DS-RLK-Ross-CAF-HYB
1140 KLUC NO: TRS-FOXV-RJE-Bull-FS-RA YES:CAW-DMC ARoss-RLK-JRS-ELK-KDF-KA 1140 KLUC NO: TRS-FOXV-RJE-BuII-FS-RA YES:CAW-DNC-ROBE-RLK-JRS-B

1280 TIVI Hrd: KA-Bull Not Hrd: TRS-RA 1330 WRAM Hrd: TRS-RLK-RA-KA-FD-DNC-KDF-ROBS: PRM-BAB-KA-Bu11-FS
1380 WKTJ Hrd: TRS-RA-FD-DMC-JBSM
WNRI Erd: TRS-KDF-NZ-KA-Bull
1420 WASR No: TRS 1450 KATE No: Foxy-MPO 1320 WENN Hrd: MPO-JS
1560 WCCP Hrd:Foxy-MPO
1470 WRTX No: TRS 1500 WKBX No: TRS 1560 WCCP Hrd:Foxy-MPO

1580 KNIP NO: TRS 900 WFIA No: RjE

Well, thats most of the stuff since $12 / 8 . .$. which is this issue's cut dated ro's
lst. FRI: WTTM 920 KFVS 960 (KA)
Ist. SAT: WSHN 1550 (KA)
2nd: FRI: KFJM 1370 (CA)
3rd: MM: : KWKY 1150 (RjE) KCCC 930 (RLK)
3rd: TUE: WPED 810 (JS)
4th. MM: : WTAX 1240 (MPO)
...NOT HEARDS......
3rd. MM: K KWLA 1400- WDIC 1430- WHSC 1450- WGAU 1340- WLSC 1570- WFTR 1450WTON 1240- WCON 1450- WP.D 1550 (all by RjE) All hrd preciously no problems 'cept 4th. TUE: WHMT 1190 (HWB)
AND NOW::: The latest "Nitecap" net---from JS \& Matual net on, $h-R_{\mathcal{C}} \mathcal{E}$ AK KIAK 970 latest
$\begin{array}{lll}\text { Nitecap" net---from JS \& Mutual net } \\ \text { KSCJ } 1360 & \text { NC } \\ \text { WTIK } 1310\end{array}$
AL WCOV 1070 IL WSDR 1240 WSJS 600 WVNA 1590 WGIL 1400 OH WOHO 1470

AZ KTAR 620
KTUC 1400
CA KROP 1300 KFOX 1280 KOWN 1450 KTRB 860 KIDD 630 KPSI 1450 KXRX 14500 KPLS 1150 KVEN 1450 KVEN 1450
WH 1450
T WNAB 1450
स WHOO 990 WETO 1490 WPBR 1340 WFLA 970 WRMF 1060
This list actually came from "Nitecap Radio Network Inc" in Salt Lake City, via Starr... The list shows the stations on the Mutual net, or going soon!! Note: WRMF 1060 \& WIBC 1070 are not yet on the net, and KGHS 1230 will join on $1 / 5 / 76$. There are another dozen or so FMers I didn't bother listing-HWB.

Another note, maybe of interest: Local WGFT 1500 CP , has got the towers up!! This within less than a week of Christmas. One week nothing, next week four towers... Starr hasn't had time to check out the ground system, or the biuldings yet. Anyhow...this might be testing shortly-n-more as we find out whats happeningl---HVB \& STARR

Due to the "Holiday break", the cut date was moved back to $12 / 8$ for this issue. Next one will return to the regular system.

## sunset \& evening

540 CBT NF $12 / 13$ Local pgms 1847-1900 ID as CBC Nfld \& Lab. (FS)
WARO PA 12/19 Alone, 1645 Jx as "WARO Progressive Rock", then Church PSA 1645 (HJH) Progressive???--You sure??--HWB
560 CKCN NS 12/14 U/ WGAN 1900 w/ FF-R. Can. net,local ID (Foxcy)
*580 CKAP ON 12/12 Mast be on high power, atop most of 1722-1920, many ads, few IDs, misc. mx., Back to Bitrle 1830 (BAB
CKRS PQ 12/14 U/ WEEI 1752 in FF, w/ promo (Foxy)
WROW NY 12/8 0/u WEET 1752 w/ ID (JFY)
640 WHLO OH 12/13 Weak, 1906 ID, local ads (FS)
690 KGGF KS 12/12 HS BB 2330-2345, atop at times (KA)
730 UNID 32 12/10 Someone here 1633 'w/ relig.--WPIT?? (MPO) Yep!!--HWB
KBOY OR 12/8 RR,ID AM-FM, 1755, weak \& choppy (JTA)
780 WAVA VA $12 / 21$ S/off $1645, \mathrm{ID}, \mathrm{FM}$ promo-no SSB (JFP)
790 WAKY KY 12/12 In steady, $1704-1730$ w/ RR mx (KA)
KSPD ID 12/8 W/ NIS net 1825; ID as "Newsradio 79" (JTA)
800 HTMR DE $12 / 10$ Loud $1629 \mathrm{w} / \mathrm{ad}, 1630 \mathrm{~s} /$ off (FS)
860 KYPC IA $12 / 14$ IOw nx 1710 , $0 / \mathrm{u}$ KOAM \& polka station (KNUJ?) (RLK)
860 KWPC IA $12 / 14$ Lowa nx 1710, o/u KOAM \& polka station (KNUJ?) (RIK)
890 WRNC NC $12 / 14$ Local AD 1625 , into ID 1627 (FS) Nightly pest here-HWB


| T1480 | Location | Countries |  | TaF. | For. | South America Best |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| R. Anderson | Virginia | 102 | VAC | 1494 | 510 | 78 | HC2LA Ecuador |
| H. Wilkdnson | Washington | 68 | VAC | 384 | 360 | 78 | HCVE-4 1395 |
| D. Reynolds** | California | 79 | VAC | 1384 | 472 | 70 | 25\%-9 127010 lm |
| S. Morss* | Massachusetts | 82 | VAC | 3922 | 424 | 62 | TY0-7 1350 2k Frazil |
| A. Imprescia | New York | 67 |  | 1286 | 93 | 55 | PJA-5 Neth. Ant. |
| A. Rugg | Quebec | 60 |  | 1438 | 1245 | 48 | ? |
| B. Dangerfield | Pennsylvania | 115 | VAC | 417 | 340 | 43 | 2.P-14 Paraguay |
| R. Schiller | Florida | 84 |  | 1851 | 339 | 39 | HCPB-6 $13453 \frac{1}{2} \mathrm{kw}$ |
| G. Allen | California | 60 | VAC | 2343 | 530 | 34 | HCJB 9741 kw |
| H. Gustafison | Illinois | 100 | Vac | 840 | 294 | 32 | $\mathrm{CB}-1385 \mathrm{kw}$ Bolivia |
| C. Freeman | California | 63 | VAC | 1518 | 360 | 26 | PRC-2 1040 Brazil |
| N. Maguire | Hawaii | 55 | vac | 2855 | 407 | 15 | CX-18890 5kw |
| R. Sperry | Connecticut | 42 |  | 1669 | 249 | 15 | CX-28 Uruguay |
| H. Robie | Massechusetts | 89 |  | 262 | 147 | 14 | LRA Argentina |
| D. Phillips** | Alabama | 26 |  | 567 | 40 | 9 | HJKL 605 Colombia |
| F. Wheeler* | Pennsylvania | 23 |  | 1695 | 188 | 7 | LR 583010 kw |
| B. Reynolds | Missouri | 28 |  | 1064 | 121 | 6 | LR 3950 |
| R. Leamy** | Ohio | 45 |  | 311 | 112 | 5 | HCJB 700 |
| E. Wesolowski | Nebreska | 23 |  | 1650 | 141 | 4 | RJD-2 |
| R. Eddie** | Missouri | 15 |  | 768 | 50 | 3 | HCJB 700 |
| M. Sorensen | Manitoba | 13 |  | 537 | 385 | 1 | PJB 800 |
| D. Whatmough** | Ontario | 11 |  | 930 | 820 | 1 | PJB 800 |
| P. Mount | New Jersey | 3 |  | 178 | 15 | 1 | PJB 800 |
| M. Breger** | New York | 49 |  | 895 | 194 | ? | Peru 880 |
| B. Karchevski | California | 8 |  | 204 | 29 | - |  |

Welcome to Alan Imprescia and Ron Schiller. Glad to heve your totals listed. Hope those with (*) or (**) will bring their totals up to date. T. V. F Total veries. VAC $=$ Verified all continents. My desk is still piled high with correspondence so will not get any Christmas cards out this year. However, had a wonderful trip to New Zealand, Australia and Fiji. Had the pleasure of viowing those fabulous vories and listening to DX roll in at the various places I visited. Am sure grateful for the hospitality extended to me by all those in New Zaaland and Australis. Had a visit from Grege Calkin on his way to Canada. Will be visiting my son in Redondo Beach, Cal. (Dick) over the Holidays and then on to Albuauerque for a couple weeks. Happy Holidays and good health. 73 and Aloha, Whan

## NOTES \&c FROM NJPC

Re the recent request for members who will do receiver work an alignment Steve Bohac informs us that he is willing to do such work for NRC members Recent musings indicate that he has done some work already and that it is reasonable and thorough, to which we at
Steve at 97 Shaler. Fairview, N.J. 07022 .

SURVEY OF LATIN SPIITS - Update No 1
This updates the list of DXN Vol. 43-8 to December 1975.

$$
\begin{aligned}
535 & \text { R. Grerada - complete w/audio. } \\
576 & \text { (delete) } \\
635 & \text { Ondas Quevedeñas, ECUADOR } \\
661 & \text { Mi Preferida, Managua, NIC. } \\
953 & \text { R. Progreso, CUBA. } \\
955 & \text { R. Carrillon, HAITI (Panamá still not noted). } \\
1031 & \text { Radio Guamá, CUBA } \\
1035 & \text { Radio 4VEH, HAITI, \& R. Reloj, Managua. (Panamá off the } \\
1059 & \text { R. Revolución, CUBA } \\
1088 & \text { R. Musical Nacional, Camaguiey, CUBA } \\
1135 & \text { Voz de la Costa Sur, GUAT. } \\
1145 & \text { Voz del Atlántico, HOND. } \\
1161 & \text { R. Artemisa, CUBA. } \\
1163 & \text { R. Progreso, HOND. } \\
1368 & \text { R. Siboney, Stgo., CUBA } \\
1337 & \text { R. Bayamo, CUBA } \\
1402 & \text { R. Musical Nacional, CUBA } \\
1419 & \text { Voz de Baracoa, CUBA } \\
1505 & \text { Radio Canoa, Cartagena, COL. w/R. Anguilla. } \\
1596 & \text { (delete for now). }
\end{aligned}
$$

Thanx to Bob Foxworth \& César Objío for comments \& info. (RFS)


UPDATER - 1230 kHz LOG - Dave Lewis

Updater for 1230 Kcs . Log which appeared in the 15 Decenber 1975 DK NowS
KIFH-AK Sched: 0900 (1000)-0207(0116Sat), Format: Mainly Top 40
WMF-FI Sched: $0600(0700$ )-2100(2300Thur/Sun), Format: Country w eone Cospel
KORT-ID Nat: Ace1, Sched: $0800(0900$ Sat/San) $-0200(03008 \mathrm{at} / \mathrm{Sun})$, Formats EY - Top 40
KTNC-NE Het: A1 (only), Add: Box 589, Sched:0700(0800)-0100, Format: CW - MOR - Potpouri
KTNG-NE Net: At (only),

## KCEN-NV Format: Top 40

EOTS-NM Sched: 0700(0900)-2100(1915)
WCWA-CA Sched: 24 Hrs RSP, Format: MOR
KSST-TX Sched: 0530(0630)-2330(0100Fri/Gat)
WXCO - Wausau, Wisconsin 54401 - Box 778-0700-0000-Country - C
KVOC - Casper, Hyoming 82601 - Box 2090-0700-0200 - Country - 41

D. LES Whittington Financial Times
TORONTO - The cost of better radio reception may be a slightly more expensive lawn mower, cc
saw or snow blower. saw or snow blower.
This is because manufacturers and importers of internal combuistion engines may have to alter their products' ignittion systems to comply with reregulations.
The regulations, to become effective Sept. I, 1976, are designed to curb
radio interference radio interference. How many products will
need changing and how much the retail costs will rise is as yet unknown, although the price increases in most cases are expected to be small.
The standards cover alt gines except those in aircraft. However. because the regulations were develoved in conjunction with in-
dustry same products dustrv. Some products -ican-made cars - should already meet the specifications, according to government officials.
$\underset{\text { terfertence }}{\text { Hate Witt, an in- }}$ terference engineer with nications in Ottawa, said the maiority of other vehicles and equirment with internal combustion engines
will require alteration. will require alteration.
These include motorcycles. outboard motors, clain saws, snow blowers and gaquen ecruipment.

The alterations will entall use of different spark pluas, alternate stielding
materials on the ignition wires or, in some cases, a redesign of the ignition system.
Manufacturers of internal combustion engines must
carry out specified tests carry out specified tests
and make results available to the communications department. All products must also carry a sticker saying the product meets lations


## An FCC Hearing on Radio Station Format

Wahingies
If a radio station decides to subjective grounds maginable hift from classical to country without any clear danger to the music, and some listeners protest, pubic interest," the FCC sidd in a should the Federal Communications Commission intervene?


Post Office Box 1
Enu Claine
Wisconsin 54701

Oetaber 29, 1975

Rorald J. Musco
6 Chestnut Dr.
Windvor, Corn. D0095

Dear Rone:
I am sorry ted report that I an unoble to help you out with an equipment ast in the near fifture, bot 1 would like to offer some words of encourngement and helpful Infomation that you moy pubtiat.

WEAQ transmits Top $\mathbf{4 0}$ type music 24 hours per day, six days per week. Due o local programming decisions, we ore off-the-air Tuesday momings from midnight to 5:00 AM CST for maintenance, instead of the customary Monday momings. As a result, we are on-the-air with regular programming while most other stations are off.

We do not use long-distance commercial frequency measurement services, so we almost never hove reason to use the non-directional antenna during the experimental period. If we did, it would be Tuesday maming only, with all its on-air interference. I shall keep your address on file here and attempt to notify you in advance of any non-D tests in the next year.

Take heart, thought $D X$ is possible off the East end of our D. A. during unusual weather conditions or refractive inversions. The antenna system has a large amount of high-angle radiation that can, on occasion, propagate long distances have received a report from New York State that was verifiedl Keep trying. will send a certificate of confimation to any verifiable reports.
sincerely,
WEAQ RADIO
Hhot kioul
Hank Koul
Chisf Englneer

## Build Your Own Audic Fllters

by Phil Sullivan

## I. Introduction

Previous articles in DXN ${ }^{1,2}$ have described the usefullness of audio filters for $D X$ and have shown how to install such filters in a receiving set-up. These articles stopped short of showing how to build the filters themselves, but rather suggested the purchase of surplus audio filters. The chief disadvantage of this is the limited selection of frequencies available and the scarcity and cost of certain types of filters such as high pass and band pass.

To help fill this gap this article shows the design and construction of some very versitile audio filters for DXing. Part II (below) shows the construction of a high pass filteri such a filter can be used to eliminate 60 and 120 Hz hum as well as much of the low frequency garble and hets that are common on very crowded channels. Part III (to be published later) will cover a low pass design. While filter design in general requires some high powered math all the relationships needed for these filters will be reduced to "cookbook" formulas.

## II. High Pass Filter

## A. Choice of circuits

There are two basic types of circuits that can be used for a high pass filter. The first. figure 1 , is a passive filter (i.e.. no amplifiers); the second, figure 2, is an active filter (i.e.' amplifiers are used as building blocks in this filter). With the proper component selection these two circuits can give identical frequency responses.

At first glance figure 1 seems the way to go - it has fewer parts and requires no amplifiers and hence no power for the amplifiers. But there are two main disadvantages to this circuits 1) Since there is no amplification we can not get out more power than we put in - and to break even on the power and to get the proper frequency response we must match impedances in and out of the filter. This can be accomplished without too much problem at one frequency: however switching frequencies requires changing both the inductors $(\mathrm{L} \cdot \mathrm{s})$ and capacitors (C.s) to maintain the match. 2) For the frequencies we want to design the filters for the component values are such that obtaining components of tight enough tolerances ( $+5 \%$ or better) is almost impossible. For a 100 Hz filter in a $3.2 \Omega$ system the C's will be on the order of $500 \mu \mathrm{~F}$ where $+20 \%$ is about as good as you can reasonably obtain. Going to a $600 \Omega$ system reduces the $C$ is to the $1-10 \mu$ F range but requires L's of around 1 Hy which are also not available in the required


Pigure 2

tolerances. And you will require 2 L 's and 2 C's for each frequency you want a filter for.

The filter in figure 2 eliminates both of these problems. Because of the amplifiers there is no need to match impedances on the input and output. The input of this filter is a high impedance so it does not load the circuit driving it; the output is a low impedance so it is not loaded by the following circuitry. Since there is no need to match impedances we can switch frequencies by changis no need to match impedances we can switch frequencies by chang3 sets of resistors, each for a different frequency, can be switch3 sets of resistors, each for a different frequency, can be switched in combinations to yield 7 different cut-off frequencies. Also component values tend to be quite reasonable - C's up to about 02
$\mu \mathrm{~F}$ and $\mathrm{R}^{\prime}$ s from about 10 to $300 \mathrm{k} \Omega$, both of which can be had in $\pm 1 \%$ $\mu \mathrm{F}$ and R 's f
tolerances.

There are some disadvantages to the active filter (figure 2): 1 ) Power is required for the amplifiers; however this can be simply a pair of $9 V$ batteries. 2) Power levels must be kept down to where the amplifiers can handle the signal - for the amplifiers to be described in this article this means the filter can't directly drive a speaker. The filter will have to be followed by a power amplifier, either the final stage of the receiver or an auxiliary amplifier (such as in a tape recorder).
B. Component selection

Referring again to figure 2 the component values are given by equations la through 1e:

1a) $R_{11}=T_{11} /\left(C_{11} f_{o}\right)$
1b) $R_{12}=T_{12} /\left(C_{12} f_{0}\right) \quad f_{0}$ is the cut-off frequency
1c) $R_{21}=\mathrm{T}_{21} /\left(2 \mathrm{C}_{21} \mathrm{f}_{0}\right) \quad$ in Hz ; $\mathrm{C}^{\prime}$ s are in $\mathrm{Fd} ; \mathrm{R}^{\prime} \mathrm{s}$
1d) $R_{22}=2 T_{22} /\left(C_{22} f_{0}\right)$ are in $\Omega$.
1e) $C_{22}=C_{21}$
In the above equations the $T$ *s are numerical constants derived from filter theory. Por this filter these constants are:
$T_{11}=0.04442 ; T_{12}=0.56261 ; T_{21}=0.10723 ; T_{22}=0.06600$ (Ref. 3) These constants give a filter with a 4 pole Tchebysheff response with 1 dB of ripple. This should be adequate for DXing without being unduly complicated. If you want to experiment with other filter responses see the appendix to this article for how to obtain the required constants.

The capacitors should be obtained first as there are not as many different capacitor values available as there are resistors tween. 01 and $.03 \mu \mathrm{~F} ; \mathrm{C}_{12}$ between . 02 and $.05 \mu \mathrm{~F}$. Perhaps the easiest thing to do is to buy 5 of the same value in the .01 to $.03 \mu \mathrm{~F}$ range and use 2 in parallel for $C_{12}$. If you can find them in your local surplus house get $1 \%$ silver mica capacitors, otherwise mica, mylar or polystyrene capacitors up to $5 \%$ tolerance can be used. Any voltage rating over 15 V is adequate.

When the capacitors are in hand calculate the required resistor values by equations la through 1d. Resistors should be kept below 250 ks if possible and certainly below $500 \mathrm{k} \Omega$ to avoid loading by the amplifiers. Use larger capacitors if necessary to keep the resistors below adequate. Any power rating of $0.1 W$ or better is safe to use.

The next item is the design of the amplifiers. These amplifiers have a voltage gain of 1 , which is not as worthless as it may seem. They do have a high current gain which buffers the input from the output. Thus the load current drawn from the output of an amplifier does not affect the voltage supplied to the amplifier input because the input current is many times smaller.

There are several ways to construct such a unity gain amplifiers (a.k.a. a voltage follower). The method that has been found best for this application is the enhanced emitter follower circuit shown in figures 3 a and 3 b . The two circuits give identical responses except for their DC offsets: about -0.7 V in 3 a and about
+0.7 V in 3 b . To balance out these offsets the amplifiers should be alternated - make $A_{11}$ and $A_{22}$ one kind and make $A_{12}$ the other kind.


Figure 3a


Figure 3b

Amplifier Parts List:
$R_{1} 5.6 \mathrm{k} \Omega 0.25 \mathrm{~W}$
$R_{2} 1.8 \mathrm{k} \Omega 0.25 \mathrm{~W}$
$\mathrm{C}_{1} 47 \mathrm{pF}$
$\begin{array}{ll}Q_{1} & 2 N 2222, \\ 2 N 3904, & 2 N 3903, \\ \text { MPS-A10 }\end{array}$
$\begin{array}{ll}Q_{2} \\ 2 N 2907, & 2 N 3905, \\ 2 N 3906, ~ M P S-N 70\end{array}$
(These parts are for both 3 a and 3 b )

Amplifiers such as these have 100\% negative feedback - this makes them quite insensitive to component tolerances. The capacitor and two resistors in the amplifier can have tolerances up to $20 \%$ and any of several general purpose audio transistors can be used - the transistor types listed in figure 3 are just some of the more readily available ones, many others will work as well. Incidently the capacitor in this amplifier is to roll the response off at high frequencies to prevent oscillations omitting it will likely wipe out nearby TV reception.

## C. Frequency switching

As mentioned above it is possible to change the cut-off frequency of the filter by switching either the $\mathrm{R}^{\prime} \mathrm{s}$ or the $\mathrm{C}^{\prime} \mathrm{s}$. The consideration of component availability leads us to leave the $C^{\prime} s$ fixed and switch the $\mathrm{R}^{*} \mathrm{~B}$.

The simplest switching scheme would be to use a 4 pole rotary switch to switch in a new set of 4 resistors for each cut-off frequency. However there is another way that gives more possible cut-off frequencies for the same number of components. Ta see how this is done rearrange equation ia as follows:

$$
f_{0}=T_{11} /\left(R_{11} C_{11}\right)=\left(T_{11} / C_{11}\right) G_{11} \text { where } G_{11}=1 / R_{11}
$$

Similar expressions can be formed from equations $1 \mathrm{~b}, 1 \mathrm{c}$ and 1 d . In all cases, if the C's are held constant, the cut-off frequency is proportional to the conductances ( $G^{\prime} s$ ) in the filter. when resistors are connected in parallel the total conductance is the sum of the individual conductances ( $G_{t}=G_{1}+G_{2}+G_{3}+\ldots$, where $\left.G_{i}=1 / R_{i}\right)$. Thus if two sets of resistors $\left(R_{11}\right.$ through $\left.R_{22}\right)$ are switched into the circuit of figure 2 in parallel they will act as a single set of resistors whose conductances are the sum of the conductances of of each pair of resistors. And since the cut-off frequency is proportional to these conductances the cut-off frequency of the filter will be the sum of the cut-off frequencies produced by either set of resistors alone. In summary: For this method of switching cut-off frequencies add directly.
D. Complete filter

Putting the pieces together we obtain the circuit in figure 4. This shows 3 sets of resistors and the required switching. The table of resistor values given here are merely an example; the actual values required will depend on the capacitors and cut-off frequencies selected. The $R^{\prime} s$ and $C^{\prime} s$ in this example are for a filter with cut-off frequencies of 100,200 and 400 Hz (and by the switching method discussed in section $C$ above the cut-off frequencies of $300,500,600$ and 700 Hz are also possible). Note the 2 values given for the resistors, the first is the selected $1 \%$ resistor value, the second, in parentheses, is the exact value calculated from equations 1a through 1d. Also, note capacitors $C_{2}$ and $C_{3}$ - these are to decouple the power supply lines.

## E. Power supply

The DC power required for this circuit is not very critical. Although the circuit is shown operating from 49 V gupplies these supplies can range from $\pm 8 V$ to $\pm 24 \mathrm{~V}$. For $\pm 9 \mathrm{~V}$ the current drain is

about 5 mA from each supply and so 29 V battaries, connectod min in figure 5 can be used. Alternately a simple power supply (ifgure 6 can be substituted for the batteries. The filter on/off switch is a 4PDT so that turning off the filter automatically bypasses the audio signal around the dead circuitry.

Pigure 5


Pigure 6

| $\mathrm{C}_{1}-\mathrm{C}_{6}$ | $330 \mu \mathrm{~F}$ |
| :--- | :--- |
| $\mathrm{D}_{1}-\mathrm{D}_{4}$ | 1N4001 or |
| $\mathrm{B}_{1}-\mathrm{R}_{4}$ | equivalent |
| $\mathrm{T}_{1}$ | 12.6 VCF |


F. Cons ruction

Por the most part the physical layout of this circuit is not critical. The one area where some care should be taken is in the amplifiers - leads within the amplifiers should be kept short and the decoupling capacitors ( $C_{2}$ and $C_{3}$ of figure 4 ) whould be mounted near the amplifiers. It is suggested that the mplifiers be built on perf-board or, if you have the facilities, on an etche PC boar. The filter resistors and capacitors can lso be moun ed on the ame board as the amplifiers or on the switoh terminals.
Q. Frequency response

Figure 7 shows the frequency response of this ifiter in dB, plotted in terms of the parnmeter $\pi$ where $\pi=f_{d} / f_{0} f_{0}$ being the cut off frequency the filter is designed for and $f$ being the frequency we want the response at. For example, at $f=60 \mathrm{~Hz}$ a 100 Hz high-pass filter would be found at $x=100 / 60=1.6667$ from the graph this $1 s$ 26 dB down. Changing the cut-off to 300 Hz would give almost 68 dB loss at $60 \mathrm{~Hz}(x=5)$. Incidently, the cut-off frequency is where the response is down by the amount of the passband ripple - in this case 1 dB . One advantage of this type of filter is the sharpness with which it cuts off: for frequencies below $83 \%$ of the cut-off the response is more than 10 dB down (more than $90 \%$ of the power is eliminated.

The choice of cut-off frequencies is one question yet to be resolved. The prototype of this filter was built with 3 sets of resistoris, one set for esch of the frequencise 100,200 and 400 Hz .


Figure $?$
H. Installation

As mentioned this filter can not directly drive a speaker so it will have to have a power amplifier following it, as shown in figure 8. This amplifier can be part of a $T / R$ (use the "Line In" input) or a hi-fi amplifier ("Aux input) or a receiver with prov isions for using it just as an amplifier (usually has an input of equipment you can use a general purpose audio amplifier such as of equipment you can use a general purpose audio amplif ler such as the IC type LM380 or a modular amplifier such as Radio Shack part
$\# 277-038$. Read and follow the instructions/data sheets/application notes that come with the one you use.

Figure 8 also shows the easiest and safest way to connect the filter input to the receiver. There are several possible variations on this scheme depending on the receiver used and these methods will be described below. If you have any doubt whether any of these methods will work on your receiver don't use them - go back to figure 8 and follow it exactly.

In some receivers the speaker can be disconnected without harming the output stage - if this is the case with your receiver you can disconnect the speaker from the receiver in figure 8 . If your receiver requires a load on its audio output stage you can still remove the speaker if you replace it with a resistor equal to the speaker impedance. Use at least a 5 W resistor. The filter can also be plugged in the earphone jack. If this automatically turns off the speaker and the earphone normally used is a low impedance type ( $8 \Omega$ or so) the filter input should be shunted by a resistor equal to the earphone impedance - again 5 W or more. If you have an auxiliary audio output on your receiver ("Hi-Fi Out" or something similar) simply plug the filter into this jack.


It is also possible to break the audio circuit of the receiver and insert the filter. Details will depend on the receiver but in general the method is: Disconnect the circuitry from the wiper terminal of the volume control. Connect the wiper terminal to the input of a buffer amplifier (such as fig. 3a) located near the volume control. The buffer output is connected to the filter input and the filter output is connected to the circuitry removed from the volume control wiper. The buffer is to provide a proper driving source for the filter; in some cases it may be possible to omit it. This method is not recommended for anyone who has not had experience working with the circuitry of his revr.

Use shielded cables for all connections to the filter.
Appēndix
The information presented here is not necessary for the construction of the filter - it is presented for those who may wish to experiment with more or less elaborate filters.

Reference 3 is a very good short article that gives designs for low and high pass filters up to 7 poles. If you can't find this reference the following gives a summary of the design method, For each pair of poles use a filter section like section 1 of fig. 2 . Here the R's and C's are related by: $\mathrm{R}_{\mathrm{ki}}=\mathrm{T}_{\mathrm{ki}} /\left(\mathrm{C}_{\mathrm{ki}} \mathrm{f}_{0}\right)$; $\mathrm{i}=1,2 ; \mathrm{k}$ is the number of the filter section. A circuit like
 section 2 of fig. 2 could also be used - follow equations $1 c, d, e$ as examples to find the $R^{\prime} s$ and $C ' s$. For an odd number of poles use the circuit above as a filter section. $\% 0$ onigulate the "'si nenumber of poles $r=p a s s b a n d$ ripple (dB) $\theta=\sqrt{10^{r / 20}-1} \quad \mathrm{~B}=\left(\operatorname{cach}^{-1} e\right) / \mathrm{n} \quad \theta_{\mathrm{k}}=(\pi / 2 \mathrm{n})(2 \mathrm{k}-1), \quad \mathrm{k}=1,2, \ldots(\mathrm{n} / 2)$
$T_{k 1}=\frac{\sin \theta_{k} \sinh E}{\pi} \quad T_{k 2}=\frac{\cos ^{2} \theta_{k}+\sinh }{4 \pi \sin \theta_{k} \sinh E} \quad \underset{R=\sinh E /\left(2 \pi f_{0} C\right)}{\text { For the odd }}$
The complete filter is made by cascading the various sections they may be cascaded in any order. The response of the complete filter is:

Attenuation ( $d B$ ) $=10 \log _{10}\left(1+e^{2} \cosh ^{2}\left(n \cdot \cosh ^{-1} x\right)\right)$
For the filter shown in this article $r=1 d B$ and $n=4$.
Referencent

1. Audio Filter by G.Nelson, DXN 3/8/1969, pg 21.
. An Introduction to Simply Constructed Audio Filters \& Networks by R.J.Edmunds, DXN 5/16/1970.
2. Simple Active Filters by M.Bronzite, Wireless World, March 1970, pg 117-9.

Between November 10-30, I vacationed in Hong Kong, Bali (Indonesia), Singapore, and Bangkok, with a layover in Tokyo. I used a Nordmende Condor plus a JVC cassette machine. Obvious signals are not reported, and locals from each location are listed only if there is some variance from previously reported info, or WRarvH.

## OVERIEN

HCNG KCNG-as per WRIVH. No Chinese jauming of 610-640-850 (Chinese language) per se, but a het from 1 or 2 signals is noticeable day and night, and very strong in Macau. Commercial Radio triplexes 610/850/1050, resulting in a strong image on $1250(2 \times 1050=2100-850=1250)$ which gives BF'BS trouble.
INDONESIA- About 28 AM signals noted in airport, all carrying goverrment program at 7 rm LT ( 1200 GMT ) ; this is in Jakarta. In Bali, 3 locals or semilocals; I don't know their exact frequencies, but quess 765-1206-1545. I am listening to don't know their exact frequencies, but guess $765-1206-1545$. I
SINGAPORE-As per WRIVH. However, due to mixing, 680 is also on 580 , and 630 also SINGAPORE-As per WRIVH. However, due to mixing, 680 is also on 580 , and 630 also on 730 ; both images are weak. Along with 630-680-790-990-1370, 940 and 1220 fra
Johore Bahru, Malaysia, across the channel, are strang. Kota Kinabalu-1475 was not good here or in Bali - only in Hong Kong. There are 220 v yellow fluorescent lights fronting each balcony in the hotel; this virtually eliminated DX.
THAIIAND. 41 AM and about 25 FM locals were carrying the goverrment program when I arrived in the hotel room at $8: 20 \mathrm{p}$ ( 1320 GM ). (Two nights later I found an FM which wasn't -- at 1215GMT.) There were four towers within a half-mile of the hotel. I positively identified 4 Thai stations, and did even worse on frequencies. When they are all on, about 5 outside stations come in! Before arriving, I heard that all EE programing had been eliminated. All that was left was on Radio Thailand 920/97 FM. Most stations overmodulate and are distorted; many of the records and comercials (off ETs) have terrible surface noise, and they use the echo chamber alot. Station 20 on 1520 by contrast is undermodulated.

The letter before the country indicates place of reception ( $\mathrm{B}=$ =Bangkok; FFHongKong; I=Indonesia (Bali); S=Singapare; $\mathrm{I}=\mathrm{rokyo}$

530 I INDIA. Jodhpur A fair 2355 11/26
T JAPAN. Morioka NHKl fair 1125 11/10. NHK chimes 2155 11/10//540 550570 630/650/670/680/740 (that's as far as I got up the dial)
540 I JAPAN. NHKI synchro good $112511 / 10$
T UNID TT 1845 11/22
565 i HONG KONG. RHK-3 weak 1610 11/26
548 T USSR. Vladivostok in RR 1132 11/10; at 1335 , still strong, with either anothar RR under it, or samething leaking through their equipment
560 T JAPAN. Kobe JOCR strong w/"Harbor Lights" \& cormls 1130 11/10
T KOREA, SOUTH. AFKN good $201011 / 10$
$570 a$ \# THAIIAND. UNID appears to be here (Bangkok)
$585 a$ H uNID. OC loud w/floating oscillator 1250 11/19, cl mx 1340. Seemingly jammed 1515 11/19, and from (B) 2015 11/27.
UNID TT 1820 11/22, and "Smoke Gets in Yr Eyes" 1827 by MV; pops 1845
T TATWAN. Taipei in loud thru JOAK slop 1335 11/10
H HONG KONG. Commercial Radio not jammed, but CC station readable under day/nite Good rock (Beatles etc.) noted w/CC talk 1500-1600 11/21
T UNID Chinese very strong 1335 11/10 hetting JOIK
B THATIAND. Bangkok. S/on 2100 11/27
620 B THATAND. Bangkok. S/on $210011 / 27$ Then $11 / 10$. S/on 2000. 11/10 w/anthem, //655
629 T UNID. Low modulation, cl mx $134011 / 10$
629 T UNID. Low modulation, cl mx 2010 11/10
$\begin{array}{lll}635 & \text { T KOREA, NORIH. Muady quality } 2010 \\ 640 & \text { T CHINA. Peking fair 11/10 2005, loud 2015. Weak from (I) } 1700 \text { 11/22 }\end{array}$
T CHMNA. Peking fair 1110 far, $134511 / 10$; Peking under
650a H CHINA. Canton/Kwangtung (quess). Very loud; cuts into RHK-640 day and nite.
B (as above). "Internationale" GV s/on 2045 11/27; very strong

B UNID jarming 1940 11/27
THAILAND. Bangkak. S/off 1700 11/28 w/2 voice duet of NA
anthem 2000 . Seemingly jammed $113011 / 10$ but not at 1335 . S/on with anthern 2000 11/10 with jamming; //625. At 2015 11/10, noted //745-785-805-855
UNID lkc TT 2117 11/27
INID, weak jammed 1340 11/10
$11 / 13$ into "With a Iittle Bit of Luck." At 2320 sec. ( 4 low, I high), 0300 by Mancini, and in instr. of "Another Tw/Another Ple " At 0000 11/14 "Chim Chim CHeree." Heavy drama 1345 11/19 with DZAS in/out. At 0900 11/16, "Wm. Tell overture" which started at 45 rpm and dropped to 33. At $152011 / 19$, anthem and s/off. ????
B BANGLADESH. EE nx , ID 1522 11/19, into native mx
T JAPAN. JOAB Tokyo. OC gces on 2010; chines start 2020 on all of NHK2
$T$ UNID, Jamming 1955 11/10 all alone - no audio
UNID TT $184511 / 22$
13 CW 1940 11/27 - - - - ; same oode on 1040
Fairly weak with 2nd sigmal noted under, possibly
Fairly weak with 2nd signal noted under, possibly CC
KORFA SOUTH HIKA Seoul. Noted 1340 ill
if PHILIPPINES. DZFM heard w/ "Manila Road Show" fair $101011 / 13$
E UNID. Loud $0007 \mathrm{ll} / 14$; then off; then back, as if pattern change or power reduction; much weaker than before
(11/23
H INDIA. Madras A w/het, fair 1945 11/27; still on 2045
If UND. "Raindrops KFOMH" and "Secret Love" (James Last) 0955 11/14
H 10 . Loud $\mathrm{w} / \mathrm{mx}$ around 2000 11/27
JAPAN. JOCK Nagoya NHK NX 1200 11/10, no stn. ID; China pips under
7 KOREA, NORIH. Noted fair 1345 11/10, and //635 $200011 / 10$
I MACAU. Vila Verde. "Campressed" by Chinse signals. Language here is $C$; "What a Friend We Have in Jesus" 0015 11/14 (theme to pgm in CC) KOREA, SOUTH. HLKG Taegu? The good book says HLKG but the tape sounds lik HKKD. JORR ID under at $2000 \mathrm{~s} /$ on $11 / 10$. S/on tape is of erratic speed. I UNID TT 1815 11/22

TAIWAN. Taipei fair in car days, E side of Hong Kong island. The jamming on here is audible throughout Asia

INDONESIA. Denpasar? On from 0100-0300 11/24; s/off 1700 11/22.
UNID Australian, I think
UNID Australian, I think, 1705 11/22
KOREA, SOUTH. HLKJ Seoul fair 1355 11/10
I SINGAPORE. Loud ID $120011 / 23$ and EE NX 1540. In (S) noted them with voice track of Yi 0430 11/26 accidentally played at double speed, then corrected. Heard "quarter to 12" at 1615, then Andy. Wis; s/off 1630 with anthem, with programming to resume at "6:01" (ITI).

## USSA. (Unk.) EF lessans $135511 / 19$.

USSR. Dushanbe (?) Moscow Bells 1700 \& 1800 11/22
UNID. Loud OC over Russian 2110 11/27
CHINA. CC very loud 2115 11/12: FRCM (B),good 1616 11/26
BANGIADESH. EE nx 1705-1710 11/26; then native mx; carrier off 1730
JAPAN. JOBB Osaka weak 2040 11/27; Chinese on top by 1055
CHINA. Pips, ID 1200 11/19, strong.. Fram (B) OC pqpped on while listening to JOBB 2040 11/27. On RS by 2105.
B INDIA. Vijayawada noted //860-720-940, all fair, 1920 11/27
840 B MALAYSIA. Kota Bahru //860 1705 11/26
850 B CHINA. Opera 1640 11/26 and again $203511 / 27$, //660. At $211511 / 26$, it
was $/ / 830$.
875 T UNID, //850 2020 11/10, probably $\propto$
880 H CHINA. EE 1345 11/19, just reading, //890
80a - CHINA? Very strong jamming noted throughout Asia
880 a I UNID. PHIIIPPPINES? "Radio Vegas" ID 1045 11/23, then talk about Rosary march.
B MATAYSIA? Bert Kaempfert misic 1655 Il/26. 50 min. before this, $C C$ heard.
1 FIJI? EE religious pgm 1045 11/23
I AUSTRALIA. UNID, W.A. W/ABC $n \times 1100$; then they say "quarter past 7 " and
"ABC in Western Australia" at 1115. W.A. should be on summer time
898a $H$ CHINA. ID on the jamming here

CHINA - same pam 1200 11/19: 920 weak w/UNID QRM
930 high pitched; QRN on air
940 good, but floating oscillator
950 Fair
*These 3 also // 1245
960 Loud, distorted; floating oscillator 970 Distorted
*980 pinched w/treble boost
*990 weat under 2 hets
The same pgm also on 1000 (maddy); 1150 (loud, distorted); 1220 (good); 1230 (weak w/het), 1290 (weak), 1320 (loud, muddy off-air pickup, perhaps of 940).

400 H MACAU. Barely audible in HK days (good on FM-98 though) due to at least two Chinese within 2-3kc. Most often in PP w/US pops.
I UNID. Heard "up to the minute nx" in EE 1830 11/22
920 B CHINA. Morning wake-up exercise-to-music-and-counting pgm 2110 11/27, //590-1000
B THALTAND. Bangkok HSK-9 ID for AM + SW xmtrs + FM-97. EE 2330-0130 daily, with s/off in Thai \& EE; then anthem; then immediate carrier cut. EE pgmy annod as returning 0415 .
B Crinda. S/on to outlet noted above was $2055 \mathrm{w} /$ "Internationale"
940 S MALAYSIA. Johore Bahru. EE nx 1350; tx pips, ID 1400; more EE nx; 11/24
H CHINA. Hofei, Anwei regional. EE lessons, thetoric 1320 11/19; ©C 1330
B Noted over India 2055 Il/27.
950 H CHINA. Unk., semi-local days in HK. (Tco strong for Fukien?
955 B CHINA, UNID. "Internationale s/on 2055 11/27
955 H BURNA. Rangoon. Presumably this was it w/Peggy Lee, and EE announcements relating to anniversaries, 1527 11/19. (Not noted in Bangkok).
I UNID. Pop mx 1833 11/22
970 H CHINA. UNID, semi-local in Hong Kong days
H CHINA. EE/CC alternating 1335 I1/19
990 B UNND TT 2057 11/27
1000 T CHINA. Peking L\&C 2030 11/10; from (I), fairl135 11/23
H PHIIIPPINES. DWSS Manila, "Double S." Andy Williams, Vikki Carr, Perry Comm noted thru 1537 11/19
1010 H CFINA, unk. CC 0215 11/18
B INDIA. Sounded like this, 1950 11/27. Only lokw, so maybe not.
H PHILIPPINES. DXXX Zamboanga City - most consistent RP signal here and in Bali. "D-triple-X at double-10." Soap opera 0915 11/13; Lifebuoy \& Bic spots; whiskey spot 1000 folo by Rosary, and Marcos taped speech 1007.
I Un 11/ 19, "Blue Xmas" Jerry vale 2050. Orten, teletalk show 1030. RBN.
Hard Core Hits" (syndicated on 100 stns, they say) 1135 11/23. "Pacesetter in relevant prograrming." Very loud in Bali.
B UNID. Anthem \& 2-tone time signal $210011 / 27$
1015 B UNID. Far eastèm of some sorts, not CC 2120 11/27
1020 I UNID Indonesian w/off center moog cut of "Fose Garden" 1135, 11/23
1050 İ PGTITPPINES. UNVD Filipino $183411 / 22$
1060 H CHINA. Canton, Kwangtung loud, cuts into HK-1050 days

THATHAND. Bangkok s/on 2100 11/27. Image on about 1530.
CHINA? Jaming - peripheral for Taiwan 1100 I guess
CHINA? Jarming - same as above
TAINAN. Taipei. Rarely heard; janming good throughout Asia
CHINA. More jamming
1110 a 1 INDONESIA. UNID 1155 11/23
1130 自 PHILIPPINES. UNID, easy listening, "Rose Garden" GV, Ferrante \& Teicher piano, "Radio gets to you" jingle, 1035 11/13; Rosary pgm 1.143. Het from China. From (I) heard Ray Conniff cut 1831 11/22. Program called "Overnight." Philippines mentioned in PSA. Presume DZHP Manila
If PHILIPPINES. Poro VOA good 1300 11/19 w/"Yankee Dooale"
UNID CC very loud 1045 11/13
1160 UNID Russian noted 2030 11/10 around it most of time; unreadable 1320 11/19. From (I) loud 1205 11/23
1196a I INDCNESIA. UNID 1155 11/23
1200 H MACAU. Not heard at any time in HK, and not in Macau during visit 2 pm IT. MACAL. Not heard at any time in HK, and not in Macau during visit 2pm ir.
In both places, there appears to be a CC about 1200 and an $O C$ about 1196 In both places
at all times.
1206 I INDONESLA. RRI Surabaya presumably the semilocal noted in Bali
1210 T JAPAN/CHINA. JOOR \& CC even $134511 / 10$
1220 H CAINA UNID ©C here days; weak
H CHINA UNID OC here days; weak $11 / 14$. Sounded like AFN outlet
1230 H CHINA. EE/OC lessons 1407 11/19
CAINA. EE/CC lessons 1407
UNID, US rock 1630 11/l4
1250 H HCNG KONG. BFBS, Sek Kong, New Territories. On erratically, //FM 95.5. Horizontal antenna; QRM from $850 / 1050$ image. Some EE pgmg 1000-1100, then Gurkha progranming; off 1300
11 PHIIIPPINES. DWWW w/teletalk $104511 / 13$, w/guest; on tape now it sounds like a sporting event. Live mx, Philips TV ad 1015 11/14. ID 1415 11/19. ID as "Super Radio 1-2-8" 1557 11/19. Chinese QRM occasionally
12250 T USSR. Vladivostok, Moscow bells 1359 11/10, seemingly off 1400
1320 H PHIIIPPINES, UNID 1645 11/14
1334 I INDONESIA. RRI Jakarta, fair evenings
1340 H CHINA. Kwangtumg regional/FS. Good days. FS for Philippines 1220 11/19, folo by $O C$, chimes, unk language, off SW; UNID Filipino under. The 1200-1230 pgm appeared to be repeated 1430. Gave Peking address in Tagalog. Ioun \& distorted. "Internationale" thru 1456; 2SW freqs \& 1340 mentioned. unID Aussie or British voioe w/rock under CC 1425 11/19. CC \& its het off 1428. EE pym mentioned4 other SW freqs. (Probably below)

B OMAN. Masirah Is. Must be the one here $\mathrm{w} / \mathrm{British} \mathrm{EE}$. skiing discussion 1928 11/27; Elvis discussion; stocks news; rock. "BBC World Service" ID
INDONESIA Kota Kinabalu strong eves, but muday "Syncopated clock" 1127, "Fxodus"1130 11/13. Billy Graham address tape in HK week of $11 / 10$ noted 1407 11/19 FE lessons $150811 / 19 \mathrm{w} / \mathrm{US}$ male, Indo YL: Unid. tbone solo semingly on carrier $11 / 19$. Wacky crystal squeal noted.
1430 II THAIIAND? Chieng Mai? Appears to be this in 1475 slop. EE lessons with sweet young American: YL 1405 11/19
1520 H H [IM UNID. CC, pips, more CC 1500 11/19
11) TIAAIAND. Bangkuk. Station 20, "thini song scon" ID 1500 at end of FF pgm. S/off w/anthem 1600.
1525 H CHINA. Came on w/ "Govorit Peking" (altemating man/woman) and "Internationale" (chimes \& orch.) while I was taping 1520 (above) 1500 11/19. From (B), "Internationle" chim-s/orch. into RR 2000 11/27
11 UvID. RR 1107 11/13 (missed 1100 ID)
1545 a I INDONESIA. Seered to be here 1400 11/23
1530 I AUSTRALTA 4QD Emerald. Time "9pm" then into ABC nx 1400 11/23
1 INDONESIA. Seemed to be one here under 4QD - on frequency (no het.)
H TALWAN. AFNT nx, PSA, wx 1103 11/13; good 1630 11/14.

| JAMMING. The following frequencies | appear | to be jamned at one time or another: |  |
| :--- | :---: | :---: | :---: |
| 585 | 750 | 1178 | 1300 |
| 650 | 880 | 1210 | 1310 |
| 625 | 1000 | 1240 | 1560 |
| 650 | 1090 | 1250 | 1570 |
| 655 | 1100 | 1260 | 1500 |
| 650 | 1110 | 1270 | 1590 |

Some are ratiner obvious; all the 1500 s could be to detract from 1580 listening, and the 1080-1110 could be for 1100 .

In addition, the Chinese appear to be attempting to deter mainland listening to Hiong Kong 610-640-850 and Macau 735-900-1200 by constructing transmitters near these areas simply for purposes of interference and putting them on frequencies 2 or 3 kHz off, either modulated or unmodulated. There is no actual jarming per se.

## Stuparary

san of the frequencies may be slightly off. Above 1200, the dial was rather tight, and when no reference signal was available, I had to guess. I am sorry I was able to do virtually nothing with the Thai stations; they were too close, and there were too many. I was in Hong Kong 11 nights, Bali \& Singapore 2 each, and Bangkok 3, and with normal touring, you can't spend all your time at the dials. I visited Radio
Hong Kong (RhK-1 is $640,-2$ its FN; RHK-3 is 545 , its $\mathrm{FM}-4$ ) and Caimetcial Padio Hong Kong (RhK-1 is 640, - 2 its FM; RHK-3 is 545 , its FM -4) and Camelcial Radio, but didn't have time to hit Radio Singapore or Radio Thailand.
It was fun and I hope some of the information is useful. Any information on sorre of the mysteries, particularly 680 , would be appreciated.
*in metrospect I think this was actually 1525 and "Govorit peking." there wab nothing ELBE ON THE dI AL from about 1400 on up and tuning on the portable 18 somemhat Ill-defineo up there. Also, "Moscow Bells" shoulo be "Kremlin Belle." - PVT

## BROOM-HILDA

FROM THAT I DEVELOPED
A VERY PAINFUL CONDTION

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The opinions expresced in this column are those of the individual membens, and do
not necomariiy rofiect thow of the editorn, the publizhers, or the National Redio Club.

HARRY HELMS - 115 lest LeRoy Street - Fort Mill, South Carolina - 29715 Greetings. The super low band TA CX of late October have yet to be repaated here, just the common high band stuff. Highlights since last Kuse: $11 / 3-\mathrm{KNUJ}-860$ TEST at poor to fair level, old style records, good CW ID 6 1:24am. I called them \& they mentioned my call © 1:30. No verie yet, but I have a verie from them for their FM station, heard here last May! That same morning, KGMO-1550 \& KQYX-1560 wiping out those channels $w / E T s$ around 2 \& seemed to be on most of the morning. KORL-650 back again © 3, this is getting to be a pest, hi. 11/10- I had Austria-1475 at poor level 12:12am, weak unID SS-854 12:31am, onward, maybe one minute of audio out of five listening, loop says maybe needed Peru. I'll get this one yet, I hope. 11/12 was domesticated w/WaTV-900 atop $5: 44 \mathrm{pm} \mathrm{w} / \mathrm{s} / \mathrm{off}$ routine, $K F A L-900$ left $\because / " T o d a y$ in History thing, "clear channel radio" promo till lost a $5: 49$. (clear channel \& lost, clear channel radio KoAM-860 atop nicely $45: 57 \mathrm{w} / \mathrm{a}$ super 0ldie "Beyond that s rich! -EGC) KOAM-860 atop nicely e 5:57 w/a super oldie Beyond the waterfall by Slim Mitman., then NBC NX. lla- what have I heard? UnID UnID-1600 w/WGIV looped $6: 03 \mathrm{pm}$, ending Ventura Hiway by Ameri ca, spot for a jewelry store in Natchez, then 6:05 s/off mentioning a
 idian are at oppocite ends of the state, \& I can't fine a 93.5 FM liste for either gity in my latest FM Atlas. New station or do my ears need. cleaning? om Holmes, ex-cub ireaurer \& BPcer, managed to find my pla but I wasn't in, alas. A quick phone call to Cbarlotte confirms he is still alive \& interested in $D X$, \& I'm hooking forward to having $D X$ \& gab sessions with him in the future. All the best of the Season to NRCers their families, \& friends, \& much good DX in the coming year. 73. (Harr:, Ferriday, La. has an FN on 93.5, just a smidgeon from Natchez-ERC)
DAVE SCLMIDT - 42 Chelwynne Road - Castle Iflls - New Castle, Del. 19720 Cif with another exciting DX adventure in Yusings! To DX: 11/30-WAVS-1190 5:24-5:30pm ending NX, then s/off, in clear; beard in the past, reported this time. 12/I-KSTT-1170 1:07-1:21am w/rr. WWVA was off, first time heard since the 60 s . 12/5- Another Pa. station for a report, WJUN-1220 4:29-4:43pm before NGAR took over, w/Nutual NX, then
 in clear. 12/8-DX TESTs from WNRI-1380\& WMTY-1090 both taken for reports, iNRI a little rough but got stronger as TEST went on. WMTY was alone w/CKKW nulled. WIVY-1280 heard but recently heard © SSS. NLLL930 not noted. Thile Een Dangerfield's friends, WEEZ, are runnint 250 w non-DA at night, they are getting many reports from WQaits area following their s/off. Very good reports recently received from Dailey, Armida, \& stiles, all verified. ire also recently received one from a Conn. INRC member who just sent in a very poor report after hearing wErZ back in 1972 , three years aso! The report was for s/on, very lacking in dein $\frac{1972}{}$ tails \& waree for only two minutes. That report was not verified, no tails \& Was for only two minutes. that report was not verlfied, ne it in toub cub when their the Club when their reports were sent, a fow tion iters, hi! Here's a special offer, another goodie from oungstown Which was recent ly located in my harvest of junk. First person to write gets a full $4 \frac{1}{2} \times 3 \frac{1}{2}$ picture of the 'HECT studios $y / a \operatorname{good}$ wish note from Jerry Starr written on the back. It's a collector's item. Antoer antique added, a Philco Kodel 90, cabinet in perfect condition \& in working order. only tunes to $1500 \& n e e d s$ an LiN to hear anything other than the locals here. I was hoping that $C X$ that were when this set was made would still be holdina on, but that gust a piece of readinematerial to me, ki! Veries: WVMA-1590 \& WiNS-1280, bott v/ls w CNs, ans mentioning only 3 , 780w into a $3 / 8$ ths weve tower. 73 s .

BRETT HaNis $V_{s i}$－ 845 First avenue－Chula Vista，California－ 92011 well．Since $9 / 1$ ，a total of 53 new gtations have been loging up pretty cent DX：11／I－KSVi－730，7：15pm s／off．11／9－KAIM－870，4：45ar，w／el mx． KRAI－550， $11: 49 \mathrm{pm}$ ，W／WX，ba rely broke through KOY．11／10－KYVA－1230， 7：JOam，time given in EE，then into Navajo prorram，w／rention of KYVA \＆ Navajoland．KVOR－1300，8：05am，coming out of CBS NX，11／11－KMED－1440 3：05am n／NEC NX，then into s／off．11／17－KSD－550，6：42am，up just long enough to hear announcer say＂KSD NX，＂u／KOY．INUB－770，7：24am，w／KOB nulled；local KFME off．JOGB－870，7：50AF，SUPEL－STFONG，C／WWL \＆unID jazzer．KSKY－660，8：05am，came out of nowhere in the middle of a NX－ cast，then PSA for Safw Boating；full ID，＂This is K－S－K－Y in Dallas， Texas，the Voice of the Gospel for the Great Southwest，6－6－0 on your radio．＂Then into religion． $11 / 27-K V E N-1450,4: 05 a m$ ，coming out of Iutual $N X$ \＆into Herb Jepko ${ }^{\text {s }}$ Nitecap SKow．KBIF－90c，7：28pm，w／religion then full ID \＆SID，$A D E O$ slop nulled．KCIN－1590，7：43pm，w／prayer state－ ment，then into s／offe $7: 45$ mixing w／XBB \＆K KLIV．11／28－XYCA－1490， 1：15am W／Arizona ildcat FB game．KMPS－1300，1：50am，for call change Totals now 490 heard in 36 states \＆five provinces．Only one recent
verie in，a $\mathrm{v} / \mathrm{q}$ from KDWN .73 s ．
JOM T．ARTHUR－Box 42 －Bridgevilie，California－ 95526
CX have been poor lately with sporadic $2 R V$ popping up to bury IDs fsomebody＇s timing seems good！）I＇ve only managed three Mis in the last two montas，with fair results．12／8－l：03am EST HJCY s／on one minute after KGO cut carrier，KONO was on for test \＆CHQR was way under．（Sounds like PST，no？－ERC）CJIB－940 in © 2：26 w／rr，weak but 5.5 pm of 5：55pm，very choppy．KSPD－790 made it w／NNIS \＆ID as＂NX Radio 79 ＂
 Was very disappointing w／no TP signals noted at all \＆only a few LAs RX：Hallicrafters SX－43．Antenna： $240^{\prime}$ LW ruming $5 \mathrm{E} / \mathrm{NW}$ ．Note：I no
 28．Thesp only did 01,500 asabe altogether！I have a few unIDs in \＆the other religious．Same day，cl mo sionals on 660 en $7: 35 \mathrm{~mm}$ ，one $\mathrm{c} / \mathrm{w}$ \＆the other religious．Same day，cl mx on $1550 \mathrm{u} / \mathrm{KKHI} / \mathrm{KRGO}$ a $10: 22 \mathrm{am}$ ． who IDs as＂The $\operatorname{sig} \mathrm{Xn}^{n \mathrm{n}}$ on 1210 －HKNX？TTwas $25: 43$ am u／wCAU Finally， TT on 740 a $4: 27 a m$ on $11 / 3$ ，heard reakly u／KCBS 0 ： 43 am u．WCAU．Finally， TT on 740 a $4: 27 \mathrm{am}$ on $11 / 3$ ，heard weakly u／KCBS OC．Any 1deas？Reports days）KIQS（ 36 days），KGMO（ 917 days）．$V / \mathrm{V}$ from KBND in seven days Bullsheet from KGFX in seven Thanks to mb coffeepot for seven days，\＆a Bullsheet from KGFX in seven．Thanks to mh coffeepot for getting me

HANK WILKINSON－ 16633 S．玉．Ninth Street－Bellevue，Washington 98008
I have been in this area since $11 / 20 \& I$ have been able to DX for the past several MMs，but I haven＇t heard anything very excit－ ing exch more volume than isual so was or （KFI was off）\＆2YC in Nellington wew zealand on $660 \mathrm{w} / \mathrm{good}$ volume have not heard any Asians at this location．I ust naceived aine． inite verie from the Director－General of＂padio valaysie＂verifyine report on their stationiin Kuala Iumpur $885 k$ n $11 / 3 / 74$ He enolos a fine assortment of his countiy＇s $B C B$ ．I have been DXing for foreion stations（other than canede \＆vexi co）off \＆on for 44 years \＆I still get that wonderfi plishment every time I hear a new station \＆lucky ；enough to find com－ $1 e$ card or letter in my mail box．The DX Hobby haa been a wonderful part of my life \＆I am glad to have been a small part of it a Nerry Christmas and the best New Year ever to everyone．

NORTAN NAGUIRE－2877 Kalakaua Avenue－Apt． 703 －Ėonolulu，Hawei1 96815 cargill \＆picked continuing from last issue，we stopped back in Inver－ $S$ of Riverton．We stopped a $t$ Merv＇s cottage for something to eat and

Vagalral \＆then to The Rocks，located at southernmost point，just $N$ of utonas 10 lighthouse atop sand dunes．Eric brought up Merv＇s RX \＆his SPR－4 \＆the batteries．Sore of the LWs were down，but we did hook up to two antennas．I was notsy－nosier than Sutton＇s．However，I would love to find it that quiet in Honolulu，hi！We again isistened to U．S．sta－ tions w／excellent volume，plus Cook Islands，WXLE，WVUV \＆other top Pac－ ific catches．At Christchurch，Ken Kackay \＆wife took me about．I al－ so saw Ken＇s wonderful verie collection．on to Melbourne where Art had arran eed for me to meet Harry Weatherley who took charge．He is a top DXer，both BCB \＆SW．I gaw \＆listened to his fine equipmemt including his Barlow－Wadey RX．The following day，he arrangee for me to be in－ terviewed over $R$ ．Australia by Keith Glover．In Sydney，Chris Martin called me as I arrived at my hotel．Jack buckley from Coogee took me to all the southerm beaches．We all had dinner at the Buckleys．The next day，after taking the hydrofail to Manly，Jack joined me \＆we drove to Chris Nartin＇s home ot Harbord．We listened a bit there \＆drove up the Coast．DX was fine from my hotel room on a little Sanyo transistor bourht in Melboume．I felt at home at Jack Buckey＇s w／his H2－180． Chris had a Trio RX．I toured Nandy，Lautoka，BA area on Fiji．Nost of保 in did not see any I hed a wonderful time thenks to all the most tations in ind soon

ALAN MERRIMAN－Box 6 －Foirfax，Virginia－ 22030
Well，FRC asked for it，so here is a Musing Reason for my lack of support is that DXing sessions have been few and far between．Here is what I do have－first the veries that have come in over the last six months：heq2－1580，TiSRKB－1125，cRu－1165，Jumbo－ 1150 ，CHTN，WFSP，WNNO，MPUT，ABFN， \＆WEOO．Here 1s DX： $6 / 2-$ CHTN－1190 finally good enough for a log． 11 10 －（That＇s right－no DX for five months！）WSNN－1150 generally poor on TEST－I finally got the last five minutes．WAGI－1560 a powerhouse I $1: 35$ ，unn．WEAG－1470 very tentative reception $@ 2: 27$ ，I sent tape \＆ verie says definitely them．TT heard on 1050 during aLY＇＇s sked time 2：30－2：45 but no IDs．11／23－iE00－940 12：01pm，third try for a verie \＆this time I scored．l2／1－WTBJ／KWIP tried but not heard，I doubt if former was on，\＆KWIF would have been a minor miracle！12／8－Unn iNORG－ $1580 \mathrm{ET} \mathrm{M}_{1}$ ，ID $12: 15$ ，strong．CHNR－1600 to s／off 1：06：30．WLIL－930 not heard，doubt if they were on．CKKW－1090 good 1：39．WIVY－1280 gen－ erally dominant $2: 29-2: 50$ ，sounded like RS，no mention of TEST．WNRI－ 1380，全 3 ，CTK IDs in like Gangbusters buf rest rough $u / Q R M$ including TOB also testing．WMTY－1090 3：32，playing exactly the same songs heard earlier on CKKH as I logsed them for a report！And that＇s it for the DX from this location．A couple of freebies－I have two wFSP－1560 CMs．They might be rare as this one is not a good verifier－first two SASEg ot 1 em．$T$ will try to be more recular in the future－maybe Ex－ Lax vill help．73．（Do you aave a radio in there，alan？－ERC）

DICK TRUAX－ 3003 Gleeson Lane－Jaffersontown，Kentucky－ 40299
Time for the latest DX（meager as they are）from the Blue－ grass State \＆Home of the 1975 NRC Convention．Latest addition heee is near mint $H 2-180$ just acquired．And if fate dontinues on its present course，I will soon also have an $\mathrm{HQ}-180 \mathrm{~A}$ ．After months of searching without luck，now two turn up！If the HQ－180A deal comes through，I＇Il have a near new HQ－180 for sale to any member wanting to update his e－ quipment．Nore on this later．DX： $11 / 30$－WPHN－1380 N1ch．W／PSA \＆ID 8：46pm all alone，WFBL－1390 N．Y．W／mx \＆ID $8: 53 \mathrm{pm}$ ．MM $12 / 1-\mathrm{KiOS}=940$ Ariz．W／ID \＆ERC $m x$ 2：48am for best－ever signal on this peanut whistle！ 12／6－KOKA－1550 La．w／ID \＆R\＆B $\mathbb{Q}$ 6：l2pm on decidedly Auroral evening； KNHN－1320 Ark．end of BKB game 2 ID $10: 55 \mathrm{pm}$ ，then ACN NX．MM $12 / 8$－ WNAX－570 S．D．W／ID 2 2 am ，I don＇t know if on ET or RS as not heard after
ID．WIVY－1280 Fla．on TEST w／nice signal $2: 36 \mathrm{am} \mathrm{w} / \mathrm{NX} \& I D$ ，then mx－ evidentiy RS on FN affiliate．in：RI－1380 R．I． 0 3am \＆3：04 w／code IDs u／ WLCY \＆unID TT，decemt voice ID \＆code ID © 3：13 for gtate \＃43，WMTY－1090


NARK CONNELIY - 47 Lakewood Drive - Sudbury, Niassachusetts - 01776 catches in both IDXD decided it s somwhat redundent to report the same catcr. than can be accomodatig unless there is more to be said about the ings will be primarily "gab." within the IDXD format; ting sudbury until next Summer when I'li, be getting married \& probably moving intoan apartment. Then, my parents' place in Nest Yarmouth, Nass. will become the location of my serious DXing w/the R390A on a once-a-month or so basis. Of course DXing from the car \& with the recently acquired TRF'76 portable will still occur regularly. The W. Yarmouth site has worse line noise than Sudbury \& much less antenna space, but its coastal proximity more than compensates. LA reception is exceptional. About the TRF, good clear split reception is obtainable with the split is not more than lodb reaker than adjacent stations \& is at least 3 k away from them. Crer the last few months, usind no external antennas, the TRF has picked up from Sudbury: St. Xitts-555; England-647; Portugal-665, Surinem-725; Senegal 764; Andorra/Norocco-318; Costa Rica-825; Delize-834; Italy-845; Nontser-rat-885; i. Germany-1016; Faiti-1035; Antigua-1165; i. Germany-1196; Eng-land/Albania-l214; St. Kitts-1265; St. Pierre-1375; France-1376; Albanif-
 tions were from the Sudbury River "superlocation" near Route 27 , but most were at the house, just an average locstion. Best time w/TRF is SSS before stations to they get strong. DX NivS reports from alose to the two aTHs I use are helpful sccurately what $T$ on expect to hear in sur sccurately what $u$ can expect to hear in Sudbury \& Nark Delorenzo s receptions more LA-oriented) are basically similar to what I get in iest Yarmouth. Info from my visits to J.Y. Thanksgivine \& around Christmas are being sent to IDXD seperately from Sudbury DX as there is a significant aifference between the two sites. Nany thanks to Bo Nensen for his eport on TA DX in Sweden - it seems there is much "over-the-pole Auroral Doukhnut-iole" propagation thereabouts. Dario Monferini's Euro-DX reportage also interesting. I hope TA CX improve over the rather dismal late rov. showings. The donstic note: Twc phone calls to the right plece got rid of bad wILD-1090 spurs on 1010 \& 1170 within 24 hours. 73 and lerry Christmas to all. (The "right place" was the FCC'in Eeifast, Vaine)
STAi: HCRSS - Route 3 - Eradford, Massachusetts - 01830
11/24- WNMT-1520 TEST easy w/no NKBW. 11/26-CHNR-1500 5:30 $\mathrm{pm} o / \mathrm{u}$ 汤NR for anotiaer try for a verle. $12 / 1-\mathrm{CKRV}-1400$ Drummondvilie, Que. for a report on AN show. $12 / 8-$ NTY $1000 \% / u$ CKKN. $12 / 9$ - NKAA1560 Aberdeen, S.D. at noise level 5-5:45am for a report. VEYY-1580 to $5: 45 \mathrm{pm}$ s/off tepe \& recort sent. 12/10- WYYG- $14404: 30 \mathrm{pm}$ but way u/waAB so not enough for a reoort. WRBX reported to a/off, plenty of NGKY $2 R N M$. 12/ll. Weak s/off on 1600 seemed to be dacx but too much. UNR. The NTA of s/off was clear \& I heard "l,000w" ientioned but replay of tape did not help any V/PF/c from 'Tivc, now $\operatorname{liPCE-1400\text {-ifyouhaveanoutetand-}}$ Inf report for woc sent it to the new address for "PBe, 1010 Park Ave., Norfolk Va. Keeps my record of 1400 iLOW-wHIE-iNOC $100 \%$ - now for a try WPCE.

EFIC FADER - 23-35 Eell Boulevard - Eayside, New Yori - 11360
Hi everybody. This tuse is soing to be a real quickie. n II 3, with all kinds of La activity on 680-690. on 680, R. Cumana-iaracai bo, R. Nacional-Zambrano, F: Fidel-Navana (ri), \& NAPA were all fichting it out amidst noise. I believe the cubans were //-690. The others were IDed and/ir surmised - VAPA was easily IDed. 690, F. Barquisimeto. I believe IDing as such. Also the Cuban, strangely weak \& saying "Ecuador, Ecuador" wing shach. Also the Cuban, strangely weak \& saying "Ecuador, this - there was sometring there definitely. CBF began fadins in about this - there was sometring there definitely. CBF began fadins in about
lipm so I gave up - all this was about lo:25 \& up. Also, I noted an LA llpm so I gave up - all this was about $10: 25 \&$ up. Also, I noted an
on 1070 too weak to ID, likely HJ. By the way - someone on 1420 has on 1070 too weak to ID, likely HJ. By the way - someone on $14 \hat{2} 0$ has before I go away. 73 s . (Where ya coin' Eric? -EKC)
AS THEY SAY IN McCOMB, MISS. "WHYY. ${ }^{\circ}{ }^{\circ}$ "WISHING EAPPY NEN YEAR."

BRUCE BOOMER - 108 Norma Avenue - Nutter Fort, Nest Virginia - 26301 Greetings. CX have been back to normal the past two weeks 10 most of this Muse will cover one strange day, 11/29. First, the SSS Naw coming from the W: 5:17pm, WKKS-1570, Vanceburg, Ky. w/s/off. 5:27, WORX-1270, Nadison, Ind. s/off. $5: 40$, WKAM-1460, Goshen, Ind. w/rr. Then all of a sudaen the high band TAs started rolling in on 1466, i554, \& 1586 , all strong. I reard for the first time Austrian-1475 0 5:54pm \& Switzerland-l562 © 6:05. Gradually Switzerland became weaker \& Cuba1560 grew stronger \& by 6:10 no TAs were heard. 2NS-1540 was strong at 6:35pm \& the band was filied with SS stations. WKWF-1600, Key Weat, caught © 7pm w/ID \& CBS NX. The remaining highlisht of the night was an opening to New Emgland: 1l:26pm WTSN-1270 Dover, N.H. was in w/rr. Then on 11/30 12:30am, WABI-910, Bangor, Me. was u/CBO W/SID \& c/w - Maine \#l but not enough for a report. Otherthan that, I logged 40 new stations SSS the past two weeks, mostly from nearby states. Veries: v/q-WTSN. V/I-Carib. Radio Lishthouse Antigua, from Box 1057, \& R. Anguilla. DX NEWS has been especiallz interesting \& valuable this Fall \& I would like to thank and congratulate the Editors \& NJPC for the fine job. Happy Hollday Wishes and 73 to all:
JOHN SANPSON - 52 Delwick Lane - New Providence, New Jersey - 07974 1 all - shame on me for not kusing for a cpuple of years but I haven't been DXing (due to a broken radio last year \& no time this year. I have noted a couple of recent comments concerning caribbean DX We were on a cruise down there about nine months ago \& I thought $I^{\prime}$ a throw in some things I can remember. First, no sign of St. Vincent-705 We sailed quite close by the 1sland during the day 30 if they d been on I think I would have heard them. We stopped at Port-of-Spain for a visit - I don't remember what 610 did use as a slogan, but I remember they did NOT use R. Guardian. R. Antilles was the strongest station on the dial (except for locils at various ports) SE of Montserrat, but fell off considerably NW. During the day, the 740 outlet was //-930 also, or at any rate during the ra ndom times I listened. Congrats to Ron $S$. for hearing that one. ORTF-1310 Martinique was another powerhouse SE of the island, but also must be directional as they were inaudible on my portable by the time we got to St. Croix. Although we had a two-hour tour of Nartinique, I guess we didn't go anywhere near their XR, as I didn't spot anything which looked likely. Other tidbits - ontr, Guadeloupe ind deed exists on 1420; I tried to hear ORTF-Tluyana circa 1070 but I guess we weren't close enough - while docked in Trinidad, so no go. Strongest Puerto ilcan in the SE Caribbean is NRAI-1520 w/WIVV next. Another which made me drool was F . St. Lucia-660 (I didn't hear the 1565 k outlet listed In an old WRTVH). Seems like the 660 outlet should be audible in the $S E$ U.S. also. Anyhow, the trip \& DX was most interesting. other random comments - I engoyed the Convention at Hartford - thanks Ron \& Frank for a job well done. Belated Merry Christmas, etc. to all \& 73.

## J.A. KHCRESTER - R. D. \#l - Frankfort, New York - 13340

Hi out there! It has been just one month since my RX article appeared in DX NE:IS \& four of the six RXes available for this DX season have been sold. Allowing for the time to get this in print, there is a possibility that the remaining two may be gone by then. Accordingly I would suggest anyone still desiring to purchase one of these during the current season write me first to make sure one is avallable before undergoing the trauma of placing an 800 check in the mail. Holiday wishes to
TCNY LAGATTUTA - Box 6291 - Portsmouth, Virginia - 23703
Greetings. WDEL-1150 clear a noon $12 / 9$ nearly as good as WJWL-900. WHIC-1290 clear ${ }^{\circ}$ 6:05pm. WXYZ-1270 clear @606. WWBZ1360 topping channel often between 6:26\&7:10pm. WCHL-1360 ID only 7. iNJR-1430 clear at times around $10 \mathrm{pm} .12 / 10-\mathrm{WFBC-1330}$ fair-clear $10: 14 \mathrm{pm}$. During coming lay-off at work, I d 11 ke to phone each local station, inquirlng as to silent perlod, a possible clude this info in a Musing in this column. Report out to WWBE-1360
Best DX to all till next report. "HJON" - "HAVE a JOYOUS CKRISTNAS \&
AS THEY SAY IN BOGOTA, CONBIAAR:

MryN NHRPHY - 1411 Phyllis Avenue - Louisville, Kentucky - 40215 It's been a while since I've appeared in these pages due to a rather heavy school workload, but exams are over so I hope to have a "blitz" of contributions in the next two weeks. CX, while not spectac ular, have enabled me to log 55 in November \& 25 in December as of $12 / 13$ I bought a timer hast week \& have been using it w/moderate success. really blew it on the $\operatorname{NNFI}$ TEST when I left $E y$, BFO on \& a loud tone blot ted out $99 \%$ of the audio, even the CN IDs didn't make it through that crap. It was heard here by three others (only the CW) so it was there if I courd have pickod it out. I've been leaving the timer set for f/c that are too late to stay up for but too early to get up for (between 4 \& 6 usually). A big LADs welcome to new member Bob Walker of Westport. He's got a big plot of land \& great location re our locals, so trere may be our long-sought beverage site. Bob was the first new member obtained of our convention $v / q s$. hey have been a great PR device w/the local stations, giving us a chance to feel them out. Nost are friendy \& several CEs expressed interest in attending the Convention. I'd also like to thank Roger Gianinni for the free beverage wire. Everybody keep sept. $3-6$ open on their calendars. Now ERC doesn't have to ask where Louisville is any more, hi (DX NETS, Vol. 42 \#l). Season's Greetings, all KEVIN NOLANDER - 5555 Banff Court - Concord, California - 94521
ot much DXing done in early ovember due to poor CX, but CX finally picked up on 11/15. At 3 am KPLY-l240 was heard w/a very weak s/off. Then a surprise 4:20am was irING-1410, in a null of CFOG/ KERN. They had a fair-ro-good sixnal \& played rr. At 5:25am, CHEC-1090 was heard on 1570. CHUB was off so I suppose CHEC was using their XR Their format was rr \& their signal was very strong. ll/17 brought in CRID-1400 5 am which is one of my all-time best catches 600 lill letters \& time was all that was heard. Then © 6:02 1t was CFQC-600 "E. Saskatoon which I thought was KOGO until ID was heard. On 11/20, KBND-1110 7:23 $\mathrm{pm} w / a$ weak sicnal u/KPOP. Then $7: 53$ KYNG- 1420 was heard w/rr u/KSTN. Cn 11/21 ${ }^{2}$ 7:42am KNPT-1310 was in very strong o then seven minutes later I GEARD KPOD's s/off on the same frequency. The day after, I heard KTII 1590 7:40am. As you can see Ore. \& NT. Cal. were coming in great dur ing that week, The KYME-740-TEST was heard w/a very strong signal after KCBS s/off 3:05. They played oldies records \& gave complete IDs every five minutes \& requested reports from out of state of Idaho. KFRC-610 had a rarely-heard $S P$ on $12 / 1$ from 5-7am. And so KPKE was heard w/a strong signal (3:06 giving local WX. Their signal was very strong. Then on $12 / 8$ e $5: 04$, KLEI-1130 was heard s/off. They were beating out CKWX for control of the frequency. A few veries have also straggled in recently including: KSTN-1420, KWIP-1580, WCEY-1390, KDWN-720, KVIP-540, KFIV-1360 \& KIEV-870. I would like to meet more DXers, especially in this axea so feel feee to write. Also, I have a cassette tape recorder coaanyone wishing to exchange tapes, whether it be the usual medley of IDs or 30 -minute program segments, feel free to let me know. 73 s .

MICHAEL ROSLOiSKI - 3 Parmly Street - Rumson, New Jersey - 07760
Hi. I have been in the NRC since 3/75. Rumson is on the Jersey Shore 1.5 miles from the ocean. I am 22 \& employed in a local department store plus zoing to a commurity College. I would like to thank Mr. Cooper for sending me information on stations W6XAI \& WIXBS which I found listed on an old Zenith "Magic Eye" radio dial. I would appreciate any info about this strange radio with the glowing green-orange "eye" in the midile of the dial. Mine was made in the 30 's \& still works \& always causes comments. For DX work I use a Drake SPR-4 \& SN-2 \& LW to listen to both SN \& BCB bands. I'm too busy for a lot of listening but heard for the first time on $12 / 10$ ( $6: 40 \mathrm{pm}, ~ 2 B V I-780$, w/"It's now 20 minutes to 8 in the Virgin Isaldns" \& the announcer taking telephone calls. That's it for now. 73. (Welcome to the NRC, Mike, \& Who's this "Mr. Cooper?" I'm Emie, please, \& Muse often! -ERC)

WE AGAIN SUGGEST TO NKCERS WCNKING AT RADIO STATICNS TO TRY TO ARRANGE A DX TIP \& EXPIANATION VINI-PROGRAN A IA THAT ON KDWN-720. THIS WILL PROMORE DX \& THE N.R.C.: IF ON ALI NIGHT, HOW ABOUT DURING THE WEE HOURS?

OSEPH FELA - 150 Robert Place - South Plainfield, New Jersey - 07080 Recent veries are V/ls from WaSR-1420, the last six weeks WVCH-740-TESI: $11 / 17$ - NO WVOGnot much has been noted of late bur heard WMT louder. 2:05am, WGAC-580 600-1ESH, ending CBS NX Int over WTIC who -13.30 WORL-1270 s/off in the clear. 5:32, Wa carrying an SS program. 5 : WIN-1520 s/off. $5: 35$, WILX-15y weak w/NIS w/WKBW off for a short period $1600 \mathrm{w} / \mathrm{soul} .4$, waNr-1520 DAE-1250@ 4:06 W/ID, TC, Osmond record, \& surprisinc 4:13, WRMF-1060 strong w/EI/1. 152 WETC-1270 believed to be arbled but there, had W , M/N 2.58 Cuban jammer conon top momentarily w/ call, request 1ine numer 3:08, wNR-1380-TEST spicuously absent on 1140 but only rough but there. $3: 13$ 1D, though, 40 WMTY-1090-TEST heard with only a voice for very nice taped 1D. $4: 07$ WRAP- 850 finally after all little difficulty. 4, wTII-15 EIN (the signal then took a these years w/NX, SID, then probably into 1

- 202 Wehrenberg Hall - Valparaiso, Indiana - 46383 OHN S. BOWKER Greetings from Valpo-rainasnow, Wind-iana! Since this is my premier Muse, I feel that some kind of introduction is in orer am a sophomore iournalism student at Valparaiso Jniversity, been DXing for about eight years. I am a morning DJ turned ixcaster a the University station, WVUR, the IOw super-power of the Ma-West. I have logged 1, 365 stations, of which I have 35 veries \& elght outstand ave am using a portable Hitachi cassette-radio set up, not exactly the int but still efficient. The antenna, which consists of a ferrite rod, does a very good job of nulling, for the most part, Chicago. At rod, 1 least, picked
 WHIS here, Alhough Iny two a ti. DXing sure has picked up since le halt. 73 s for now.
BRETT HANAVAN - 845 First Avenue - Chula Vista, California - 92011 Merry Christmas \& Happy New Year to all. Only three new loggings lately. 12/b-KGRB-900, W. Covina, Cal. e l:lopm w/ Jazz, KDEO-910 slop nulled. Colosal ID. Also this morn many No audio on any of these except veries in, a v/a from KOAM-860 after al496 heard in 35 states. Recent verles in, Now I'd most a year. A $v / I$ from KIML-1270, also after almost a year. Now I d like to bring up the subject of local problems. San lego has wide on mous problem. Most stations here, eltar 585 to 615. the band, or are NSPers. KOGO-600 NSP, 65 , Nains , AM Stereo! KFNB-760, off KFI-640, SP MM. XETRA-690, NSP, slop 655-730, AM Stereo. Krive 825 to 890. MM. XEMO-860, off every morm, but causes massive slop from KDEO-910, off MM, slop 890-925. XEGM-950, off MM, but s1op Ira 970. XEPRS-the Nighty 10-90, NSP, Slop from 10 NSP. Mexicans on 1270 , off every morn. KCBA-1170, off MM. KSON-124, NSP off every AM. KGB1310, 1420, \& 1470 don't give much trouble; all 80 of every MM. Clos1360, NSP, slopover from 1340 to 1380 . XEBG-1550, of every . Strongest est XR to me is a Mexican, belioved to be XEXX $-150, / \mathrm{s}$. That's it. 73 s signals are KOGO-600, 61db $/ \mathrm{s}-9$, \& XEIRA-690, $59 \% / \mathrm{s}-9$. That's it. 73 s JERRY STARR - WHOT - Ypungstown, ohio - 44505

KZIA is a.ll NX/talk and Wouldn't play Easles. KRZI is NSP so s/off eliminates this too Sounds like an overly fertile imagination to me! 73 \& good. DX.

Via Davanzati 8 - 20158 inilano, Italy Cizo friends! After the big opening noted here on the last week of October unfortunately has been very poor of Yankee signals
 \& to be sincere only ins has had a timil show colombians \& Venezuelans However the scene here has been very full of combians \& \& the period ll/20-24. These are the new stations for me: especially in the period $11 / 20-24$. These are the new stations for me Chile $0!/ \mathrm{K}$. Globo 8-8:30pm \& I have a tape which testimony it is a relay Chile $0!/ \mathrm{R}$. Globo 8-8:30pm \& I have a tape which testimony it is a relay for Portuguese foreign service of the Chile kadio, anyone please may co firm this? Thanks. R. Caraibes-850 International w/FF 11/18 a 8:06pm R. Sensacion-830 \& 8:35, noted often! R. Norocco-701 operating A.N.S. $/ /-935$. YVZR-1320 e $8: 15 \mathrm{pm} 11 / 21 ;$ R. Mil, Santo Domingo-1180 2 $9: 15$, quite rare in my area, program "R. Mil Avanaa!" Emisora Rio Mar-1130 HJAC © $9: 30$; R. Cristal-1140 HJDL © $9: 40$; K. Pacifico-1030 Jali w/terreific signal, $25 A-4$ e lopm, a very nice surpise. HJGJ-l010 2 10:05. A very interesting remark is the fact the $11 / 21$ I hane noted very late colombians till 11:05pm EST so a real important opening to this area. R. Continental-930 Bosota $7: 50 \mathrm{pm} 11 / 23$; $\sqrt{2}$. Latina Valencia-1470 new Venezuelan $8: 5011 / 24$. A real interesting catch $12 / 1$ 우 $7: 30 \mathrm{pm}$ on $900, A . I . R$. Cuddapar w/s/on but not local ID. (Naturally this day RAI Milano-899 was in silent period. Noted from 12/4, all XRs of Emissora Nacional de Portugal operates 24 hours so you may try to hear them all: 12/7- I noted R. Gnome-1328 giving address Box 49, Abardeen, Scotland © 7 pm \& last DX, R. Antilles-930 Nontserrat $10: 05 \mathrm{pm}$ in SS. All times EST. So bye bye for now, 73 in ' 76 to all of you!

DAN FLAK - 2451 Bonita Drive - Highland, California - 92346
(UPI) - Las Vegas by the Sea - Sometime last year, when nobody was looking, California gradually separated from the continent \& drifted off to parts unknown. Submit locgings to IDXD! I'm sorry I do not habe any DX to report, but here's my commentary. I agree with Mr. Wiseblood's idea about a Califomia column, but it is up to us to do it. It is true that Cal. has unique DX problems. A DXer in Tennessee has over a dozen states within 500 miles. 500 miles in San Diego can get you San Francisco. There are also mountains which put your antenna 10,000' below the average terrain. However, no Cal. or Westerm DX column could appear in DX NEWS unless the flood (hi) of reports from this area doesn't pick up. I am just one of themany offenders (probably the worst). Special kudos to Mssrs. Hansch (Wis.) \& Ramiérez (Tex.) who kept the $12 / 8$ issue of DXDD from being the Eastern DXD. Yes, Capt. Glotz, there is a California, though even I find it hard to believe. You couldn't tell from those of us out here who hear no evil \& fail to report it. So it is my New Year's resolution to get off my gloutimus maximus, crank up my woodburning, steam-powered HE-40 with the hunk of bell wire antenne \& report. If anyone else in California owns an AM radio, he is free to join me. That's it from the methical storybook island of Caififornia.
KELLY ANDREWS - 819 Tipperary Drive - Greensboro, North Carolina - 27406 As every new rember to the NRC, I guess the Musings are the proper place for intros. I'm just coming off an extended period of DX inactivity. I was going strong in NNRC from 1964668 \& then took an informal hiatus. Reason was mainly lack of time \& rapidly deteriorating equipment. I recently ran across a Hallidrafters $5 X-99$ at a good price, so I bought it, strung an LW \& joined the NRC, realizing the errors of my younger days, hi! Imagine my amazement when the first bulletin came \& I found Bruce Winkelman was also DXing from Greensboro! I thought our breed only lived under rocks \& came out after dark. (No, they come out (2) SSS, h1-EFC) Now I think B.W. has updated me \& advised me on loop construction. Also, many thanks to Steve Bohac for getting the tuning capacitors Por-ta 'through DXchange. I wrote him on Monday, had the capcapacitors tor-ars by Thursday. That kind of service is rare! At current, present totals stand at 34 states \& 12 countries confirmed. I don't keep track of loggings too much; if I can't report it \& get a verie, I usually don't of loggings too much; if I can't report it \& get a verie, I usually don't pertinent info in the next wusing when I have more room. 73 . (Welcome to the NRC, Kelly, \& we will be watching for your DX doings here! -ERC)

Kan ONY SCHUK - 16771 Shea Avenue - Hazel Crest, Illinois - 60429 N ONYSCHUK - Season's Greetings. Total heard is now up to 614. I'11 ate. It's a little easier. Col. \#8, KREX heard u/3WE go state 8:45:55pm w/EL mx, mention of BKB game W/Nontrose, an in, read about three N.B.A. Conn. \#2, WPOP-1410. I got DX NEWS \#T II \#87, 88: WKEI-1450 w/ NIS in DXDD on l410. Then I heard ID © 2am. IDN. 50 , w/local NX © $5: 35$ WASK looped W/EL mx on 11/23, ID w/ID on 12/8. Ind. if 33- NHEL-1570 S/011 KNOE-549 heard o/u CBEF, 5:50-6pm on $12 / 12$. Nev. H1- KLUC-1140-TEST NX 6:50 till KOA's MM S/ on e $6: 5 \mathrm{am}$ on in Vegas on skywave w/MOR? \& WX 3:20-3:25. Ok/a. \#14- \#5-KXRB-1000-TEST heard 6:10-6:30 simultaneously w/s/offs on $12 / 3$. S.D. \#5- KXRB-1000-TES in very weak e $3: 10 \mathrm{w} / \mathrm{ID}$. Wis if $28-\mathrm{WTMB}-1400 \mathrm{~W} / \mathrm{weak}$. 12 . Ont. \#20, as u/KSO. Canadian \#49- CBEF-540 on W/FF u/O KNOE On $5: 45 \mathrm{pm}$, folo by WCPC of $12 / 15$ WMIX-940 I11. still on $5 \mathrm{kw} \mathrm{D}-3 \mathrm{w} / \mathrm{s} / 0 \mathrm{Of} 5: 45 \mathrm{pm}$, folo oy wePc $\mathrm{s} /$ off. Announcer mentioned $6: 30 \mathrm{~s} / \mathrm{on}$. $11 / 28$-TEST of 1170 WHLN was a washout, 45 minutes of KVOC/WiVVA. Oh well, I hope you ECers did better During telecast of Ind.-Ky. BKB of $12 / 15$, stations noted: WVLK WIRE and Wave. Nice to see \#l Hoosiers on Ch. 44, Chicago. NX note from George Lazarus: column in $12 / 9$ Chicago Tribune: NIS network is now 57 stations ${ }^{\prime}$ aim of 75 by $1 / 1 / 76$, long range goal of 300 to surpass old NBC Monitor 227. WMAQ is negotiating $3-5$ year contract to carry Bill Veeck s Sox. I hear ABA BKB regularly on WOAI-1200, Denver Nuggets on KHON-630, St. I hear ABA BKB regumaxis Spipits on KMOX-1120, Indiana Pace s on WIBC-1070, Ky. Colonels on WHAS-840. 73 \& Season's Greetings.
MIKE RAMIREZ - 5218 Roundtable - San Antonio, Texas - 78218
iTwas the night before Christmas when all through the house Not a creature was stirring, axcept for my HA-600A
The veries were on the wall with great care
In hopes that the verie fairy soon would be there.
The daptime stations were all in their beds
Thile visions of unlimited time danced in their heads Strentzach in his pajamas, and I in my cap
Had sust settled down for a DX session rap
Had just settled down for a DX session rap. the defunct Greetings! Welcome to NFL, the San Antonio Nings. We may get a new memartie Bigley who appears of mine \& Scott's. ber by the name of 1 ahsel Gutierrez but slow dow but the pace quickAlso, I had not really decided to quit but slow down bws going weekly \& ly sped up as I became more the good CX although as of $12 / 14$ it was 800 getting down to DX, firs of all the TESTS I heard here: 11/10- WAGL S.C. 3:29-3:31am, WMNT Ga. 3:21-3:41. DX starting w/fied issue of DX NEWS: KKLA-1570 La. 6:12-6:15pm w/ad \& s/off. The preceeding 11/15, followin 11/16: WOGA-1540 Ga. 7:01 s/on, many mentions of Sylvester. MM 11/17-WJPR-1330 Miss. 3:03am, WHI日-1290 0. 3:06, WBTS-1480 Ala. r/c 3:16-3:24 was the time I listened, mx between IDs, WEXY-1520-TEST 3:29-3:31: $3: 38 \mathrm{am}$, WKIG $\mathrm{r} / \mathrm{c}$. $11 / 18$ - KLPR-1140 Okla. ET, ID $6: 26 \mathrm{am}$. $\mathrm{IL} / 22-$ WSAO- 1550 Tex. $r / c$, ID (6:30. WKAC-1080 Ala. $5: 43-5: 58 \mathrm{pm}$ s/off. 11/22- Wsa0-15, M1ss. 7:02am s/on. 11/23-KBBB-1600 Tex. 7:01 s/on. XETOR-670 7:03 s/on $11 / 24$ - WBCM-1440 M1ch. A1 NX 1:05am. KULP-1390 1ex. 2:19 1530 Ga . testins w/rr. WCCR-1580 Ill. 3:05-3:15 r/c, 250w Ga. 2:20 testing $\quad$ :21-3:4lam. UnID-990 4:10am, would say 100 cycles, would have TT then 50 cycles, then TT, help, please k kev-1480 Kans 4:15am r/c. R. Aeropuerto-910 3:27am. WPTR 3:17. 73.

ANDY RUGG - 146 Francois - Apt. 212 - Ile des Soeurs, quebec - H3E IG3 . Here is a brief Muse from an inactive Dxer. Mited to one brief out of order but should be fixed soon. At ton on Andy, and welcome back, CANADA! -ENC)

AFTER THE JINUARY 19, 1976, DX NENS WE WILI NOT CARRY ANY MORE COMMENTS AFTER THE JZNUARY 19, 1976, DX NEN YOU HAVE SOMETHING TO SAY ON THE SUBON PROPOSED MERGER FEELINGS. INE IN TO PROVINCETOWN BY THURS. JAN. 8, '76:

WAYNE HEINEN - 1028 Pike Drive - Colorado Springs Colorado
303-634-5120. Please note new address \& phone. I am now Sales Manager of TV Facts of Colorado Springs, a family-type business where you work your tail off but I'm my own boss. My RX is set up in the laundry room \& I have a makeshift loop on the old RBB-4. DX has been light but some reports out. $12 / 10$ brought unusual telethon for Brownwood Humane Society on $13802: 02-2: 30 \mathrm{am}$ \& on although no call heard, tentative to KBWD. Earlier saw KWNS-1290 on ET/Mx/rr 1:50-1:55am W/ID, then off abruptly. KSCJ- $1360 \mathrm{~W} / \mathrm{MOR}$ to $2: 08 \mathrm{~s} / 0 \mathrm{ff}$. $12 / 11-$ WEAQ-790 Munning AN-rr 1:45-2. MM 12/15- KWKY-1150 very weak in pack, r/c 1:30-1:40 w/ID every, minute. I noted KRYS-1360 AN-Yr about $2: 58$. KXRB-1000 TEST in great w/ c/w \& lots of IDs, copied here 3:02-3:llam. I stumbled on KLUC-1140TRST as my $12 / 8$ DX NEWS didn't get here till $12 / 15$ ( H 2 , did you get my mid-Nov. address change?) Short copy 3:35-3:35, then to bed. I hope to contact Col. \& Colorado Springs area DXers. Re the NRC/IRCA possible merger, to my mind the IRCA menbers who wish to join the NRC should, \& if the IRCA wants to close up shop, then do so. As one who joined the NRC through meeting Ray Edge, a long time NRCer \& publisher, feel when the IRCA was formed they did it out of disagreement with the way the NRC was run. If they find they can't keep the kind of club running they want, I see no reason to jeopardize the NRC as it stands with any talk of merger. My hat is off to the late Ray Edge, Mr. Richard Cooper, Mr John Callarman, Gordy Nelson \& the BPC, \& RjE, PT \& the entire NJPC, aiso ERC, HMB \& the ga ng, Foxy, Joe Brauner, Al Merriman \& all the others who have kept the NRC going through both thick \& thin. I Inust admit I haven't done too much.- some CPC many years ago but i still feel a part of NRC \& hope I will have time in the future to devote to the hobby as a whole instead of just my own personal enjoyment. Have a good Holiday Season \& may Santa put a veri or two in your stocking this.year. 73.

DAVE SCHMIDT - 42 Chelwynne Road - Castle Hills - New Castle, Del. 19720 DX slowed down this report, due to getting ready for
Christmas. I am also getting a few problems with the fine noise again, so letters \& calls are going to Delmarva Power to get that straightened out again. It doesn't seem to be from their lines, thougn, I believe it's an "in the house" type, which may be a little tough to get correct ed - meaning, it's in somebody else's, not mine, hi! 12/15- WWHY-1470 12:26-12; $45 \mathrm{am} \mathrm{w} / \mathrm{ET} / \mathrm{TT}$, noted past 2:30, playing Bluegrass stuff by then. WTVR-1380 1:21-1:31am w/ET/c/w, some TT. WKTJ-1380 didn't show; WBNX is painfully strong here MMs w/WAMS off. WRAM-1330-TEST 2:03-2:15am w/TT, voice very weak, mostly u/WHOT. KXRB-1000-TEST 3:02-3:16 w/c/w, very rough w/FM'ing Vexican. Promo for Top 75 hits of 1975 quite clear @ 3:08 rough w/ FM ing vexican. Promo for lop 75 hits of 1975 quite clear @ $3: 08$ so word for word copy sent on that. I noted some c/w, some TT later on ter WRCP, quite strong. I missed the WDLM-960-TEST - I Iooked for them ter WRCP, quite strong. I Ilssed the WDLM-960-TESI - 1 looked for them on 860 ( 1 had a long day that day, hi! see Wes column for the comments -TEST w/sticker; v/l-KSTT-1170, WETB-790, WELB-1010. Pa. veries now -TEST w/sticker; V/l- KSTT-1170, WETB-790, WELB-lolo. Pa. Veries now stand at 98 , total veries around 700 now. I'm still working on the fil-
ing system for them. Foxworth's coments in the $12 / 15$ issue regarding ing system for them. Foxworth's comments in the $12 / 15$ issue regarding that propos sons I pulled out of it, its bickering over little things became just a little too much. May everyone have a good holiday Season \& let's hope 1976 brings good CX!. By the way, for those seeking a verie from the il 704 NW Charlotesville. Va. 22003 704 l2th St. NW, Charlottesville, Va. 22903 - send them to the attention of John Brown, SM. Coleman got a PP/c back from them but I was told if I wanted a verie, I had to sene a tape o Pr/ for being a carrier cur-

NEIL G. ZANK - 2445 "E" Street - Apt. 6 - Lincoln, Nebraska - 68510 Holiday Greetings to the NRC from the Finterlands. I have mil loop all trimmed with lights, I heard that Lindblade knows U. S. Highway 30 like the back of his hand; Nesolowski has an ace in the hole with his return trip ticket for the Nebraska City toll bridge, Whitehead is
(Zank) getting a finger stretcher for Christmas after typing the NRC Nembership List, Dabelstein has to live upstairs in his new home till he gets his bas on 630 ! A very good jear in 176 is wished to all. 73 s .

JEFF KOSNETT - 1410 Chicago Avenue \#205 - Evanston, Illinois - 60201 JEFF KONT - Merry Christmas \& Happy New Year to the entire membershop! I'm in the midst of final exams, \& will be soon sending out numerous resumes \& job applications. Any managing editors in the club. How a How about a dine \& also a bit on MM 12/8. Here's what I hearo, still using time to my aged Panasonic -159inatins or spending my \#\# elsewhere. Here's the but Ireep on procrastinalin briefly as the announcer mentioned it was on thé air for a test © $2: 27 \mathrm{am}$. At $2: 37$, tentative KXYZ-1320, as I on the "Kir f" well enough. Station was mixing rr with another one, which heard Kx--well enough. it out till 3, but by then both stations were quickly faded. I stuck 1t out till 550 heard well a $5 \mathrm{w} / \mathrm{NX}$ \& a "cash call" to "II som that all the ruckus has died down, moving per WXCL-1350. No sign of WIOU, which is usual somewhat $12 / 11$ SSS- KMPL- 1520 blasting in w.bruy readable here at this time. was quite a shock. They were stronger dal rér $5: 15$ - though only 15 than WLAC \& NKI. WAD $5: 34$, WTRU-1600 heard miles away, ulfair kan slgnal, wan as id from Jerof 73 s to all - \& special mention to the LADs sey over Hopefuly I'Il make it to LOUISVILLE next year, especially if I am liv-. ing in Evansville.

JEFF ROBERTS - 945 East Noore - Decatur, Illinois - 62521
Lots to report since I've heard 56 new stations since my last Nusing in October. Great TA opening here 10/23-28 - lots of carriers, but only definite new log was Monacc-1466. 10/27- CFUN-1410 B. C. lopping NW W/rr 2:14am, new prove 6.48 pm . KRGO-1550 s/off e 6:45pm. 10/30- KLOE-730 Kans. weak w/ c/w e $6: 48 \mathrm{pm}$. KRGO-150 Salt Lake City atop briefly w/great ide catches ever. November seems tor 860 Vinn mesm heard very weakly here MM 1l/3 was a good example. KNUJ-860 Minn. IEST hear 1/8- KBWD-1380 Tex. atop brielly w/1 times since. 11/12- KMUN-1300 0. \& c/W, @ 6:19pm. 11/14- KLOV-1570 Colo. all alone ID MM 11/17 was good. R. Feloj-700 Costa Rica was @ 2:35am w/WLW off. WEXY-1520 Fla. TEST was excellent 3:39am W/TT, IDs, \& mention of the NRC noted. Highlight of the morning was R. Na-cional"-854 Lima, Pery which was in/out a good part of the morning wit light SS mx, ID 5:19am. 11/19 SRS-WPTL-920 N. C. weak 6:25 w/c/w WKIX-850 N.C. crushing KOA w/rr © $6: 47 \mathrm{~m}$. SSS- KTJS-1420 Okla. great signal W NX, WX \& ID 6:25-6:30pm \& heard several times since. MM $11 / 24$ I tried for KSIR-1470 Colo. TEST, but nuthin' heard. WSJS-600 N.C. poppedin a 3:10 w/an ID on ET. 11/25- KAJN-1560 La. strong w/state NX pm. Good IA CX the eve of 11/26. Best log was R. Melodia-735 Quito, Ecuador $\mathrm{w} / \mathrm{light} \mathrm{mx}$ \& ID @ $11: 04 \mathrm{pm}$, country \#21. 11/27-"C. R. Ilghthouse -1165 antigua weak to fair from $8: 459 \mathrm{pm}, \mathrm{s} / 0 f \mathrm{f}^{2}$, religion format noted, country \#22. MM 12/1-KSSS-740 Colo. nice surpr se on ET W/TT \& ID © 3:12am. Strong R. Vision-650 alone w/ads \& SID 4:10am. 4VEH-1035 Haiti very good w/religion in EE e $6: 45 \mathrm{pm}$, country \#23. MM 12/8- wIOB-138 N.C. gave everyone waiting for the WNRI TEST a bonus w/their own EM, 3:03. WNRI was very weak here, but definite ID heard ${ }^{6} 3: 13$, \& Morse Cod: WRI was heard for me. 12/9-Good TA openins w/nice audio from TWR-1466, Nice-1554, \& WDR-1586. Nany strong carriers also. 73s. NOW, BACK TO WEEKIY UNTII ONE SKIP THE WEEK OF FEBRUARY IO, WE WANT YOUR MUSINGS \& YOUR VERIE SIGNERS IN PROVINCETONN - DEADLINE, THURSDAY.

KADET - 816 Easley Street - \#1401 - Silver Springi Naryland - 20910 friends Season's Musing is prompted in part to wish all my old DXing ing \& my DXing juireetings \& a prosperous 1976. Frank Nerrill is Remember MM 3/16/66, ERC? That was the ine when there was fontert Aurora \& Castro had every station on the island on unsl his anti-China speech \& there were $S S$ \& $F$ island on until almost 3am with channel including the graveyarders mat's fat ion MM of the decade. I am thinking of bakt $s$ Frank $s$ and my most memorable rond for a few months beginning maybe be U.S. Where the Dxing cx oinning this March \& settling elsewhere in the Capital. Any DXers out a air pollution are better than in the Nation's ing around Europe ing around Europe \& maybe further for a spell? How about writing? 73 particular MM (Hi, Jeff - welcome back, but I don't remember that particular MM you mention - [FOYbe it was "before my time"-hi -ERC)
JEFF KLEPPINGER - 502 East 2 Street - Northampton, Pennsylvania - 18067 Well it's about time for another Nusing. Following stations from 9/29 to 12/9: WIOD-610, WNVA-1350, R. Belize-834, CJRN-710 VMJN-730, WHOM-1480, WHNC-890, WMIN-1590, CMHI-570, WHYN-890, WRAW-1340, finally, WVOJ-1320, WPRJ-1310, \& WCHE-1520. My SM-2 really has it over the LW when it comes to locals. Beginning $1 / 1 / 76$, WHP- 580 in Harrisburg will go 24 hours, maybe an MM SP. I can't get them nights here so it Won't affect me. WHOL plans to increase to 2,500w on 1600k. A third tower would be added if this goes through. This will be my last Nuse for a few months. On $1 / 5$, I go for basic training in the Coast Guard in Cape May, N.J. Then to Petaluma, Cal. for Radioman School (21 weeks). Could anyone in the area inform me of DX CX there? My total logsing is 353 from 35 states. Local WKAP- 1320 now has $20-20$ NX ( 20 minutes before \&i NX on the hour during hour. On Sunday nights between 9 \& midnight is ( Open Mike". 73 s to all \& good DX.
MARK CONNELLY -
47 Lakewood Drive - Sudbury, Massachusetts - 01776
Hello again. First, thanks to Dario Monferini for debugging my tentative Ireland-566 reception, guess I just had the German in can understand why Ireland is so hard to get when England-647 bombs in at potent oevels, frequency atop WSN/YVLH-650. Re 818 Poland vs. Ituseful in deciding aidn t get much of talae on tape, nothing that could be useful in deciding what I had. TAs have picked up here in the ea rly AM hours. BBC-1214 \& Langenberg-1586 at cruncher levels on MN 12/14, along W/many others (See IDXD for details) I've recently acquired 2,000 ( 600 m ) of boverage wire from Gordon Nelson, to be installed at Sudbury Pine Swamp for steerable-condioid pattern phases-beverage operation. I've of Mike Mike Levintow's study was very interesting. Any place where WBZ, WGN, \& similar all audible on gtoundwave is a tremendous location! I've made similar studies from the SW tip of Nova Scotia, Cape Cod, Cape Ann, Nontauk Point, L.I., the Atlantic City area, \& several other sites. I did not, however, have a loop antenna. I suspect WGTR as the possible unID M1ke lists on 1060, as they were heara well at Montauk Point. Cape Cod stations WOCB-1240 \& WVLC-1170 should be possible there, tool both were good at Montauk \& in N.S. I'm tempted to send my Shag Harbour/Clark's Harbour, N.S. daytime DX in as Mike did w/N.C. I've often wondered about consisant prope Fortaleza, Brazil "like a rocet sit must dump into Senesal at pestilon surinam-725 the Caribbean, \& Europe Good rece tion of E. NA, likely on Brazil's is coast. Has any trevellar African reception are er researched this? Another location travelling DXer w/good equipment evland, during could all dump potent siensls are yet another area w/outstanding there at the szme time. The szores fer my another area w/outstanding DX possibilities. Now I wish to conrer my Insipidity Award for 1975: it goes to the Jepko Nitecap Show. Its retarded themesong has got to be the worst atrocity ever perpetrated on the public. Its talk content is banal \& plastic, a marked contrast from truly interesting shows as Larry Glick of WBZ. Happy New Yea r, 1976!73.

JEFF FmiCONEA - Clinton, Ontario
Hello people. It's been quite some time since yours truly has appeared in these pages, mainly due to the Canadian f.C.'s strike. Now the strike is over I plan to Nuse frequently. Great DX so far this season w/CX being mainly Auroral in nature, W/some good TA openings noted. 10/2-TAs in quite well; France-863, BBC-908, France-944; DDR-1043, SWF-1016, Portugal-1034, BEC-1088 all in w/good audio, all new here as well. $10 / 6-$ WVCH-740 in , $/$ TEST, l:lOam after CBL s/off. 7 pm , a log taken on new Antigua outlet on 1165. 11/12, a new RX arrived here, a collins $51 J-4$, purchased from Fair Radio Sales. I am very pleased with it so far, but haven t had much chance to seriously chase DX with it as yet. DX W/new RX: 11/14- FCOG-1560 (1320? -ERC) w/s/off in mess e $5: 30$ om. 11/16- WGVA-1240 on tov $\mathrm{w} / \mathrm{s} / 0 \mathrm{off}^{2}$ lam. TKKS-1570 ID ह 6:08am. 11/22 - NAR-1520 clobberine frequenc w/R\&B 4 pm . NLAS-910 in w/NX /WFDF/ CKLY © 4:30 17/23-WGAD- $1350 \mathrm{u} / 0$ TSIR w/rr 5 pm ISAO-1550 o/CBE W/WX a $5: 55 \mathrm{pm} 11 / 24-$ WETY-1230 on top w/rrel:03am. HCVS-1450 strons on $r / c$ l: 35 am. Several others heard but have been mentioned in IDXD or DXDD, so I won't mention them here. 73 for now \& I hope everyone has a Merry Cbristmas. 73.

AARRY J. HAYES - Star Route - Box 226c - Goulasboro, Penna. - 18424 CX these past two weeks have been very good, although I raven't sent that much time at the dials. 12/6-12:13am NBKC-1560 Char don, 0 . heard testing w/rr \& two cracked-up DJs who were really carrying on. A verie from test was received last week. I roted station still testing around 3 am except the DJs went to bed. $2: 25$, WIRV- 1550 Ky . W/excellent sicnal \& Barry Thite mx, IDs siven three times each ID period. $12 / 7-5 \mathrm{pm}$, WEET-1320 Va. gcod signal. $12 / 9-3: 45 \mathrm{pm}$ WGSE-1380 N.C. in w/ fair steady signal w/soul \& MB NX $12 / 10-4: 37 \mathrm{pm}, \mathrm{WONP}-1290 \mathrm{C}$ 。 loud w/ rr. 5pn, unID s/off on 910 at this time, very strong, only call given Waich sounded like WBEL or WBDL. Closest thing is WAVL Pa. 6pm, WCSH970 Ne. weak steady signal w/NNIS. $12 / 14-7: 54 \mathrm{pm}$ YVOZ-1200 Venezuela, F. Tiempo in/out w/good signal, mxing w/ Cuban Reloj outfit. I2/l5- WKRT$920 \mathrm{~N} . \mathrm{Y}$. in $4: 28 \mathrm{pm} \mathrm{w} / \mathrm{MoR}$. $12 / 18-2: 10 \mathrm{am}$, WYSL-1400 N.Y. in fair $\mathrm{w} / \mathrm{rr}$. 1:56pm, WSYB-1380 Vt. W/Weak readable sicnal. $4: 45 \mathrm{pm}$, WIOO Pa. s/off w/ proro to stay tuned for more hit music on WCFL Chicago." 4:50pm, WKDE$1000 \mathrm{Va} .4: 54$, WETE-990 ilindsor, N.C. in w/good signal \& c/W. 5:15, WFIC-860 N.C. S/off heard weakly. $12 / 19-4: 30 \mathrm{pm}$ WIZR-930 N.Y. in w/ sports, difficult throurh semi-local NCNR. 4:45, WARC-540 Pa. nice signal w/progressive rr. That's it till next time - Keep up the Nothball Nemories, Emie! (Thanks, Harry - will do! -ERC)

STEVEN: C. WISEBLOOD - 707 Loma Way - Santa Maria, California - 93454 I haven't noted eny TP DX since early IJovember, perhaps due to Sunspots or seomagnetic activity? lormally, this is the best time of theyear for TP DX. If CX had been good enough I may have even been able to log my first TA station, but no luck yet. I am trying out various nuling techniques on local radio stations, \& have been hig Lu success KSMA notched out \& $7: 33 \mathrm{pm}$. KLIP-1220 s/off @ $7: 45 \mathrm{w} /$ ID. KKAR-I220 $\mathrm{s} /$ off right after KLIP s/off. KBON-1240 w/NBC NX \& ID o/KSMA null (28pm. KOAD$1240 \mathrm{w} / \mathrm{ID}$, soul e $8: 26 \mathrm{pm} .12 / 17-6: 17 \mathrm{pm}$, KRGO-1550, booming in $\mathrm{w} / \mathrm{c} / \mathrm{w}$.
 ledades, w/ads for Bakersfield. This was in KSEE-1480 null © 6:14pm. I also noted in KSE: null KDB-1490 fading in/out w/EL. Harmonics from the TV Sweep frequency ( 15.75 x ) are quite noticable here during the daytime, making almost every frequency impossible to DX. Near SSS the problem disappears to some extent. I plan to get my thirdclass license sometime next year, \& Iy first class license in 77. Perhaps i will make it as a DJ. Of course it would mean having to project my voice for three-four hours. The DJs down at KCBQ \& KIQ2-FM in Los Angeles have been noted with the voice projection technique. It is mostly noted only on Top-40 rr stations, NEVEF on progressive rock. Nore next time, until then, 73 s AS T:EY SAY IN ELKIN, N.C., "WIFM." "WONDERFUL ISSUE FOR KUSINGS!"

BRUCE REYNOLDS - Route 2 - Warrensburg, Mhssouri - 64093
DX: $11 / 17$ featured a very strong evening Aurora. KOLE $13405: 56 \mathrm{pm} w / \mathrm{NX}$, then rr ; WQPD-1430 a.ll alone w/rr $5: 38 \mathrm{pm}$, then one of my best graveyard catches, KBMY-1240 Blat this one until Skip $D$. reminde me of the "donut" Auroral effect GPN exponded upon a few years back. $11 / 18$ - KCAD-1560 6:35-6:45pm s/off $\mathrm{w} / \mathrm{c} / \mathrm{W}$. $11 / 21$ - WkNN-1320 $5: 45 \mathrm{pm} \mathrm{s} /$ of KOCA-1240 atop 6:34pm w/FB interviews. il/22-KADI-1320 s/off $5: 44 \mathrm{pm}$, folo by WNGO s/off. MM Il/24-KSIR-TEST got three IDs through the XES \& CFRW. By the way, the Tijuana station had an EE spot, but SS otherwise. CFRW. By the way, the T1 juana station had an EE spot, but SS otherw MM $12 / 1$ was a washout; WTBJ not on $\&$ the GR-64 couldn't handle XERF Well
enough to let KWIP through. (HQ-160 is still slck). MM I2/8- KFGQ-1260 enough to let KNIP through. (H2-160 is still sick) MM 12/8-KFG2-1260 ETing w/ religious mx u/KSPL which was running c/w, apparently ETing w/ FM s audio; had ads \& all. WIVY-1280-TEST got three IDs through WSGO WGBF. WNRI-1380-TEST made it OK on CW, but nothing else - state \#48 (Vt. \& Alaska needed), thanks Skip! WMTY-1090-TEST u/KAAY OC \& buzZ. MM 12/15- WWNS-1240-TEST through on CW IDs \& two voice IDs. WRAM-1330 u/KFH 2:06am. HOL82-1090 Panama 3am. WKLF-980-TEST 3:14am thanks to
 Veries are extremely slow. V/I-KIRI DHL KADI WIGO WKIG KOLE KBNY KSIR
$\mathrm{V} / \mathrm{q}-\mathrm{KJJJ}$. V/f- WANI V/r-KHMO WMTY. I hope everyone had a good v/q- KJJJ. V/f- WANI $V / r-K H M O$ WNTY. I hope everyone had a good
Chrismtas \& much good $D X$ to y'all in 176 ! * That receptcon sot domit hole! Chrismtas \& much good DX to y'all in '76! * That receptcon shot domut hole KARL FORTH - 630 South Ardmore - Villa Park, Illinois - 60181

Greetings. All four IRCA TEST' for MM $12 / 15$ were on, \& all were heard here but IKTJ, which just couldn't cut through the $2 R M$. WCFL was ETing w/a dummy load when KXRB came on, but a call to the XR \& they agreed to quit from 3:09 to 3:24am EST, I d be interested to hear how far WCFL sot out on this arrangement. SSS Ds for December: 12/2- WMES1570 \& WLOV-1370 s/off © 5:30 \& 5:31. 12/4-WNWB-1360 @ 5:31 W/ID and spots, KBOK-1310 w/Ark. radio net NX, then s/offe 6 . KWBC-1550 s/off @ 6: 29 \& then KBAN- $1410 \mathrm{w} / \mathrm{s} /$ off @ $6: 30$. $12 / 14$ brought KOYY- $1360 \mathrm{w} / \mathrm{s} /$ off @ 6:01. MM 12/1- WYSH-1380 on ET © 1:2lam. MM 12/8 WNRI-1380-TEST w/surprisingly good signal W/CW, rr, \& even vnoce IDs heard. WMTY-1090@ 3:53 W/ID U/KAAY ET. MM 12/15-WDLM-960, WNNS-1240, WRAM-1330 \& KXRB-1000 TESTs all heard. (WiNS was not IRCA, Karl - 'twas NRC only -EFC) WKLF was not heard but I was told they were on. WDIM \& ITRAM receptions leave only 14 to be heard from Il1. Totals now stand at $1,674 / 892 / 831$ (heard) verified/taped), stations, $48 / 48$ states, \& 9/9 provinces, \&30/19 countries. The few veries back so fa $r$ this season include $v / q s$ from WKIS740 \& KUOM-770, $\mathrm{V} / \mathrm{I}$ from KBOK-1310 \& v/rs from WWWB-1360 WYSH-1380 and KYSN-1460. I'm looking forward to seeing you all in LOUISVIIIE next Summer, \& at my get-together some time in February (some of you anyway). Happy Holidays and a Good 1976 to all.

CHARLES A. NOLFF - 4911 Proctor Road - Castro Valley, Calif. - 94546 MM $12 / 8$ was a wipeout, $w / C X$ mediocre to the $S$ a rotten everywhere else. Only DX was YNX-750 w/ L"La X" IDS. This from $4 \frac{1}{2}$ hours of DXing. Things got better the next weekend, however: $12 / 13-1-1: 23 a m$, WCAU in for a report. l:43-2, WCBS. Both these have been tough for me; 880 has a low mumbling het on 1t, plus occasionally a KCBS image; 1210 has an occasional KDIA image, or just lots of static. MM 12/15, a report taken on XERF, plus the KXRB-1000-S.D. TEST \& the KLUC-1140 Nev. TEST were both heard \& reported; KLUC has been heard u/KRAK, but never for a report. To other things: There's a possibility of TWO (count 'em) WC Con ventions next Summer, \& miracle of miracles, therili be within a weel of each other. A group from Portland has bit for WTFDA, \& apparently has a good chance of getting it, \& Bay Area Radio Freaks have bid for IRCA. Both of us are looking at early August, \& I' ve been in touch with the guy Who's bidding for WTFDA, \& We'll be working out our skeds. Next BARF DXGT will probably be in April, \& I promise to do a better pubiicity job on this one. SCADS may go Preswdents' Day in Feb., but no decisions from them yet. Thanks to Mike Maloney for his tips on improving the Wedge. Anybody'who's built one \& has complaints/praise/money/questions to Jive me, feel free to write. WC NRGers, MUSE! Or Capt. Glotz'll getcha! 73.
 Back in thosenostalgic 3Cs, there were ondy several hundred AM stations in the U.S.A. \& Canada, and outside of the largest cities - like New York, Chicago, Philadelphia \& Los Angeles, most of the big cities had just four to six locals. Pittsburgh, until after World War II, had five statoons: KDKA, WCAE, WJAS, KQV, \& WhSW. Amont the P\&ttsburgh locals, KDKA has alwayw been the most famous. Then, as now, KDKA was 50kw, but the frequencty was 980, changing to 1020 in the 1941 reallocation. KDKA was NBC's Blue Network outlet for Pittsburgh, \& the only station in town to really go in for live, local programming. Until the late 30 s , their $X R$ was at Saxonburg, about 25 miles $N$ of the city, \& fading was common at night. KDKA then had an Sir parallel, W8xK, \& percaps the most farreaching program sent out by these stations was Messages to the Far ing CAE-7220 (later 1250)
 gahela River. WCAE carried the popular NBC Red orograms, as well as Mu tual: \& was probably the most listened-to station in town. And they didn't s/off until 2 a.ma! WJAS-1290 (later 1320) was the local CBS outlet, \& shaead an XR on the $S$ side with sister station KQV. At night, at 1,000 W, the WJAS signal was a little weak, \& one could often hear, with verifiable clarity - NBC programs from WEBC, Duluth, also on lagok. Once, WJAS got into the doghouse with the three Pittsburgh newspapers by getting their NX from an outfit called Transradio News, instead of from the papers \& their news servieesg so for several years these newspapers, in their reddo columns, would not put any NJAS programs into the "Tontght's Best Bets" section, even though some of the great shows from radio's
golden days were on CBS. Under the same ownership was KQV - 1380 (now Eolden days were on CBS. Under the same ownership was KQV-1380 (now 1410), 500w. The two stations shared studios as well as XRs, K2V also In the Winter, K2V was on at night only from $7: 30$ to 10 , in the went stroisht through to 70 pm . Funn in favor of WSMK, it was WALA, Mobile, that almost always boomed ine

ERNEST R. COOPER - The Cape Tip DXer - 5 Anthony St. - Provincetown, Mass. unsolicited, from V/qs in from Milan-899 \& WDLM-960-TEST; v/l, 202657 plus data \& CM , \& $\mathrm{V} / \mathrm{r}$ from WMTY-1090-TEST, very poor, as my letter was typed on buff paper with red type, which didn't Xerox very well - illeg1ble, in fact. Now, DZ: Sat. 12/13- The SS-1025 turns out to be ex-710 Ecos del Combeima, Colombia, unn. And, unID /Jepko on 990 e 2:37am! Unn WGNA atop 1320 @ $1: 07$, \& WINZ-940 seemed silent today - all R. Eco. Mx then cricket news on 885 , unn Montserrat, no doubt. That aftermoon, a pleasant surprise on 1300 as NPNH pushed in u/semi-local NJDA for a report, 3:59-4:15pm s/off. SN 12/14-Unn UKBR-1250 s/off-SSB © 2:06. 2238 unn semi-local WHET-1330 testing. MN 12/15- Ny NiNSS-1240-TEST made it that spot. WDLN-960 tentative on TTs at various times, but they didn't use Cir so no definite ID, but they verified my tentetive, so tey as they WOR-710 off, IRDN-1480 atop - NN, $2: 27$. Unn IKTJ-1380-TEST weakish but there $\mathrm{w} / \mathrm{FN}$ program of $\mathrm{KTTJ}-F M$. An unID TA onl295 2 2:42am. WHAS off an SS there turned out to be only a "HI-Fidel". On 7IO, SS w/ID as either R. Super or F . Sucre, \& mentioned Colombia - whossis? An AN SS on 945 also, very weak on a non-AU morn. SM 12/21-Ugh- Holfman Jack is on CKTS-900 till they s/off e 2:03 GSQ! TTer on 990, N/s, unID 2:06 \& on. On 1610a, CW station sending " $R$ A $B^{\prime \prime}$ over \& over. Weak $c / w$ on 1560 , but the wicked slopover from CKIN killed chances for probable log on stillneeded KKAA. MM 12/22- Tester on 1580 left air around $1: 27 \mathrm{w} /$ no announcing, \& later, after 4, seemed to be back playing mx again - quite loud. Unn ADEE-1500's/off-SSB © $1: 31$, leaving a talk-talk station AN - is this KSTP? The SM-2 said it was N/S - could it be WKIZ, Rons S.? CFGO-1440 Was off today, WCCP-TEST made it fairly well, but again, CKLN's slop Was rugced. Then WKBH gave up the ghost around $3: 35$ \& a log finally on 4:30am w/NX. Repeat "dIS heard on $7404: 22 \mathrm{o} / \mathrm{u}$ WIS/CBNM. Try next week!

