

# F R E N D X

The SHORT WAVE BROADCAST Journal - Since 1962

**North American Short Wave Association**  
**Vol. XIV No. 7** **July 1975**



**Studio Building, Radio Clarin**

LOUDENBOOMER PRESENTS:

SON OF DX

FUNTAGES!

It's comforting to know that there are still a few things you can count on in this life. Again this year my WRTH is coming apart. I put my research staff to work on this problem and they believe they've isolated the problem. The glue used is made of re-cycled gummed backing off Brazilian mint stamps. Now was that or was that not a sticky problem?

Going up! That's what our country scores are doing! Malta is an established fact. Antarctica is a cold fact. Antigua still coming. And Admiralty Is., Cheju Islands too. Panama may be on the bands again one of these days too. And, as you insiders already know, Radio Bauru will soon have a powerful relay base on Fernando de Noronha. Radio Renacensa will follow suit on Madeira. Further, a report has just reached me that Shannon Air Radio will shortly add musical weather forecasts thereby adding yet another target. (See Rules for Country Collecting, Section 4, Part 3, Paragraph 12, as amended.)

Area DX Meet: The newly organized Roswell Area Tuning Society (RATS) held their first dinner meeting recently at the home of Head RAT, Bedoin R. Bogsworth, with some 391 persons crowded into his home. The ranks were swelled when the organization's name was taken to mean other things by local auto mechanics and piano tuners. Confusion was rampant as DXers surmised an "impeller" to be some kind of new preselector. The car doctors for their part believed "QRM" to be some sort of new invention out of Detroit for the purpose of controlling pollutants. And through all these confused discussions the seven piano tuners in attendance argued over the proper pitch of Bogsworth's spinnet. The next meeting has not yet been planned.

Band Survey: An aid you may find of use is the new North Texas State DX Association's 11 meter band survey which gives a complete rundown on the many interesting DX stations operating in this range. Handily formatted by frequency and cross-listed by time period, the survey comes on a 3 by 5 file card for easy taping to the side of your receiver. One dollar and an SASE please, to NTS DXA, Del Rio, Texas.

Can you top this? Wilbur J. Feltspun was recently declared the winner in the first annual Pennant Collecting Sweepstakes sponsored by Radio Damascus. Contestants had six months to build a pennant collection from as many different stations as possible. Wilbur's score of 1,252 pennants easily outdistanced his nearest competitor. Wilbur road to success by using a computer-run mail campaign which flooded the globe with airmail requests. And he should soon be enjoying his prize...A room-size oriental rug. Triangular in shape of course!

Contests are spreading. If you listen much to the big broadcasters you have dozens of opportunities every year to be a winner of everything from lp records to trips to the broadcaster's home country. Listening around the bands over the past month or so has uncovered Radio Moscow with a series of questions on the Pushkin Museum. Radio RSA will give you a lifetime membership in the Royal Johannesburg Golf Club if you know what a "Ble duiker" is. Radio Iran is offering a date with a belly dancer at the Vanak Hotel for the best 30 thousand word paper on the life of Artaxerxes. Radio Watahalpa will send you a bat used in the sport of Pelota de Guante if you can answer each of their current series of questions about Ecuadorian trees. If you do win this one, remember it's a federal offense to assault a postal employee while on duty!

And it's sign off time again! Next time we'll study the various forms of address used in Swahili letters and have a floor plan of the Radio Pastaza studios for you.

**THANKS:** A number of people have taken time to drop a note to Headquarters to comment favorably on the first FRENDX published by the new management. The kind words are appreciated, and most of the credit goes to Alan Mayer since he actually was the one who had to sweat out the arrival of late copy, argue with the printer and get the bulletin in the mail in accordance with his schedule.

**QSL REPORT TO RETURN:** We don't really know what happened to QSL Report other than the fact copy from the editor failed to reach the publisher for the March, May or June issues. Likewise it is missing from this issue but we are planning to bring it back at the earliest possible time which will be with the September issue. Larry Yamron who had this column previously agreed to take this over again in lieu of LR-B. In order for Larry to have material for his September column, anyone having items for QSL Report are urged to start sending them to him now at 540 N. Neville, Pittsburgh PA 15213.

**CONGRATULATIONS:** The Australian Radio DX Club commemorates their tenth anniversary in June of this year. Their offset printed bulletin AUSTRALIAN DX NEWS is impressive. Overseas inquiries are invited but sufficient IRCs must be sent to cover return postage costs. Publicity material will be sent airmail for 5 IRCs to North America. Write ARDXC, P.O. Box 227, Box Hill, Victoria 3128, Australia.

**RADIO CANADA SHORT WAVE CLUB IDENTs AND INTERVAL SIGNALS:** We learn from RCSWC Bulletin - Summer, 1975 that Radio Canada SW Club Ident and Interval Signals will be available in a series of cassettes or open reel tapes. The Canadian Handicapped Aid Program (CHAP) and Handicapped Aid Program (HAP) have been given exclusive distribution rights, and the proceeds from the sale will benefit HAP-US and CHAP, as well as HAP's in other parts of the world. The first part of this series is now available and includes ident, interval signals, and anthems of 27 African SW stations.

Future tapes in this series covering Europe, Asia, South Pacific, and The Americas will be made available during the coming months. The price per tape, either cassette or 3-3/4 ips open reel, is \$3.50 which will include airmail postage. Payment is to be by money order only payable to The Handicapped Aid Program (no stamps, cash, or personal checks). Those in the U.S. should send their order to Mr. Gene Moser, Director, HAP-US, 6805 Woodland Court, Coloma, MI 49038. Orders from Canada should be sent to Mr. Harold T. Sellers, Chairman, CHAP, 122 Giroux St., Apt. 20, North Bay, Ontario, Canada. Be sure to specify which type tape being ordered, and allow at least six weeks for delivery.

**1975 ANARC CONVENTION:** This will be about our last announcement about the ANARC Convention being held in Montreal August 22 to August 24. Complete details and a reservation blank was included in the May issue of FRENDX. For anyone considering attending, the best idea at this point would be to write or call the ANARC Convention Committee, 5766 McAlear Avenue, Montreal, Quebec, Canada H4W 2H1 (1-514/486-9614) for details.

**MEMBERSHIP CERTIFICATES:** How much interest is there in membership certificates? These have not been available for some time, and if there is an apparent trend in favor of certificates, Headquarters will see what is involved to have some made up for new members and current members who might like to have one to frame and hang in the shack. The previous ones were such that they were renewed each year for three years with a renewal sticker. Anyone interested in having this practice reinstated should send a post card (no letters) to this effect. If the trend shows sufficient interest we will pursue the matter further, but cannot justify doing this if only a few are interested.

**NEW LOG REPORT FORM:** A new log report form for use in sending reports to the Log Report editors is now available from Headquarters at no cost other than postage. Send 16¢ in stamps for twenty sheets. If a larger supply might be needed, send additional stamps in multiples of 8¢. We will supply the envelopes. The LR editors would appreciate their use.

**HELPING HAND:** Richard Saifyrd, 164 Somerset St., Elmwood, CT 06110 asks if anyone can give him the names and addresses of any surplus dealers who might be able to supply the R-392URR receiver mentioned in the May issue of FRENDX, SWC-5.

**ACKNOWLEDGMENT:** Credit should have been extended to American SWL Club for the propagation information which appeared on page LN-4 of the May issue of FRENDX as heard read over station HCJB which was the Propagation column of Richard Varron as printed in the May issue of SWL on page 34.

**INDONESIAN SURVEY:** The Australian Radio DX Club Indonesian Survey, edition #2 as compiled by Robert Hanner, completely updated and revised as of June 1, 1975 is now available for 5 IRC's airmail or 3 IRC's seamail from Australian Radio DX Club, P.O. Box 227, Box Hill, Victoria, 3128, Australia.

**DXING THE USSR:** A June supplement to the ADXN written by Bob Padula is available to non-members of ARDXC for 5 IRC's airmail or 3 IRC's seamail. Orders to Australian Radio DX Club, P.O. Box 227, Box Hill, Victoria 3128, Australia.

**FOREIGN LANGUAGE REPORT FORMS:** Spanish, Portuguese and French language report forms are being reprinted and will be available from Headquarters very soon. Anyone previously requesting these, and not having received them write again since they have been out of print for a while.... Send a single SASE with 10¢ postage attached for each one wanted, and specify which one(s) wanted.

**COMPASS ROSETTE:** Bill Paschke, 514B Portland (rear), Beloit, WI 53511 offers a 7" compass rosette to anyone interested free, except for return postage. Can be used for many useful things other than directionfinding. Fully graduated in degrees, in black, on 8 1/2" X 11" bond paper. He will send three copies for 15¢ in U.S. or Canadian mint stamps (no SASE). Equilivent in IRC's OK, very useful in DXing.

**NORCAL DXERS:** Having had a very successful Memorial Day gathering, will do it again! August 29 thru September 1, 1975. El Rancho Inn, 1100 El Camino Real, Millbrae, CA 94030 (415/588-2912); rooms \$16.00 single, \$20.00 two persons/2 beds, \$24.00 three persons/3 beds. Registration fee of \$1.00 is good for refreshments, snacks, and door prizes. There will be technical sessions, equipment displays, gabfesting and plenty of time for DXing. Advance registration unnecessary, feel free to drop in. Inquiries, further detail, bus and plane information, maps, motel reservation cards, etc., contact Rick Herald, 17412 Rolando Avenue, Castro Valley, CA 94546.

**THE DX "LUXAL" CLUB SPANISH** (International Listeners Club) wants to make contact with other regional DX clubs and invites exchange of bulletins. Correspondence in the Spanish or English languages should be addressed to Louis Díez Alonzo, (EA-1-12), San Javier, 5, Santander, España.

**HOT DOGS, BASEBALL, APPLE PIE, ETC:** In the process of transferring files and what-have-you from South Charleston to Liberty, I find a letter written a while back to Headquarters by a 23 year old electronic engineer in Czechoslovakia in which he says he finished his high school education in New Jersey in 1969 and the rest of his education in Czechoslovakia. Before returning to Czechoslovakia, he became interested in the hobby of DXing and through a friend in New Jersey he had received occasional copies of FRENDX. We pick up his letter at that point:

"But let's come straight to the porrage (sic) say I. I became a little homesick after your bulletin and would appreciate very much and also would be very grateful for at least one copy of it."

"Of course I don't want it completely free of charge so as payment I am including 56¢ in unused U.S. stamps to cover postage. I have no other choice because I am not allowed to send out any funds whatsoever from Czechoslovakia. I would appreciate if you could accept such a solution, since that way I am obeying the law as well as keeping up with the slogan 'the best things in life are not free any more'. I would like to maybe to become a member of NASWA, but unfortunately mentioning the above conditions it's not possible but as the saying goes 'a summer without one swallow will not be effected' so please make me happy through the year and send me the best there is and that is your Frenidx."

"Like the ITT ad says 'long distance call is the next thing to being there' so it will be if you send me a copy of your bulletin I will have the feeling like being in my other homeland and that is U.S. or better said, the States. Also be so kind and if you will send Frenidx to me please pack it into an envelope, because this way I have more chances of receiving it than just freely and the label of my name on it."

Examination of the stamps sent as payment revealed them to be Commeratives issued circa 1936-45, and closer examination of the gummed side show evidence of them at one time being a part of someone's stamp collection.

Thank God for Hot Dogs, Baseball, Apple Pie and the good old U.S. of A!  
(M. R. Leonhardt)

# Shortwave Center

Editor: G. A. Wootton

Send all new SWC material to incoming editor:

Jerry A. Lineback  
P.O. Box 325  
St. Joseph, IL 61873



LI. Newsday's Magazine. March 16, 1975.

March 16, 1975

## PEOPLE by Al Cohn



### TUNED-IN DIALECTICIAN

When Richard Wood of East Rockaway comes home from work each night, he likes to listen to the news on his radio. He particularly enjoys hearing about Russia being "well rid" of Alexander Solzhenitsyn, who is a "blight on Soviet society, a socially disruptive force." Or an announcement that "this is Radio Day," honoring the "discovery of radio" by Russia's Alexander Popov.

Such amusements are just a small part of being able to translate 28 languages into English, or to identify more than 100 languages while flipping the dial of a short-wave radio. Wood is the new chairman of the department of languages and international studies at Adelphi University, and his interest in dialects is closely allied with his ongoing

career study of the world's population. During a teaching assignment at the University of Hawaii, he observed that the Hawaiian language is all but dead, replaced by English or pidgin English. He noted that the social aspect of languages is at least as important as the languages themselves. Recently, the Garden City police asked Wood to teach them Spanish and Portuguese so that they could work better with the Portuguese community in Mineola.

Wood, 34, became interested in languages as a youngster in his native Scotland. "My uncles had a flower shop and I became friendly with a Dutch bulb salesman who taught me Dutch and German," he said.

Wood admits there is one language that throws him: pig latin. "My students are better than me at that," he said.

## TOURIST IN INDONESIA

"An On-the-Spot Report"

by our foreign correspondent, and  
Australia's ACE DX-er: Bob Padua

Over the past couple of years or so, there has been a tremendous upsurge in interest in DX-ing Indonesia. Previously, reliable and up to date information concerning transmitters, operating schedules, and data relevant to the possible existence of Indonesian broadcasting facilities was scarce, and it has only been in recent years that data associated with Indonesian medium-wave facilities appeared in the WRTVH. The emergence of the relatively high-powered outlet at Jakarta, of RRI, on 1335, came as a shock to many DX-ers in the Pacific area - strangely, QSLs for reception of that outlet have been few and far between, tending to suggest that the RRI authorities are not particularly anxious to disclose the existence of this rather novel operation.

I would believe that much of the groundwork behind the recent consolidation of Indonesian broadcasting information originated from the efforts of ARDXC member Craig Tyson, in Perth, Western Australia, about 3 years ago. It was his initial monitoring of stations not in the RRI network that focused attention (at least in Australia, North America, and Scandinavia)

on these unusual and previously unheard activities; his discovery of the various "Radio Khusus Pemerintah Daerah" outlets caused a great deal of attention to be placed on DXing Indonesia.

North American DXer Bob Bundy, when stationed in Truk, also brought to life a lot of material relating to non-RRI activities; and it was a tragedy that DXers in New Zealand, in the main, were apparently disinclined to venture into this aspect of DXing, where considerable skill and in-depth monitoring were prime requisites.

Many of the non-RRI outlets operate outside of normal bands, and it was perhaps this "modus operandum" that prevented them from being discovered until relatively recently. However, their existence is now well known, but exact and topical schedule information is unavailable in the WRTVH, and it has been left to the individual DXers and Clubs to publish data based on actual monitoring. In fact, schedule information on the RRI chain is still questionable for certain operations, and the efforts of those Clubs

and individual DXers, in devoting time and many long hours into unravelling the Indonesian DX scene should never be forgotten.

The desirability of publication of an initial listing of Indonesian stations was realized during 1974, associated with actual monitoring information made in Australia (and in Sri Lanka, by Victor Goonetilleke), with the issue of the ARDXC Indonesian Survey, edited by Robert Hanmer. This Survey was used in the compilation of the Indonesian listing the WRTVH-75, and resulted in a high degree of interest by DX-ers world-wide.

Later, in 1974, the second special Indonesian publication of ARDXC was also made available on a world wide basis; this was Robert Yeo's treatment on "DXing the Unknown", in which the results of many months of individual research and monitoring were offered. (Other ARDXC publications are and will be available - write to the ARDXC, PO Box 227, Box Hill, Victoria, 3128, Australia, and include 3 IRC's asking for the ARDXC's Publication List - SWC-ed)

Over the next few years, it is probable that there will be major changes and reorganizations within the radio broadcasting sphere in Indonesia. Indications have been made that a long-term plan will provide for the establishment of several high-powered MW outlets at strategic areas throughout the Republik. Proposals for the conversion of non-RR1 transmitters to MW were announced some time ago, and it is also believed that all SW operations for RRI activities will also be moved to MW. For these reasons, interest in DXing Indonesian at the moment is very intense, with the very strong possibility that most, if not all, SW activity will have ceased over the next five years.

Recently, an opportunity presented itself to visit the country, due to the introduction of a novel and relatively inexpensive type of packaged holiday offered by the Indonesian airline "Garuda"; so, armed with my little 3-band portable Sony, I went! My companion was a fellow ARDXC member, George Graham, and our 13 day trip took us firstly to Jakarta, then a five day "Overland" bus trip through to Denpasar (Bali). Overnight stops were made at Bandung, Semarang, Yogyakarta, and Semarang.

My overall impressions, related to broadcasting operations, were of the immense number of stations in existence, both on SW and MW. In Jakarta, from the hotel room, in the late afternoon, at least 31 different stations could be heard, on MW!

A feature was the relay at 1300 GMT (11 pm Jakarta time) by almost all of the non-RR1 outlets of the Central News Bulletin from RRI-Jakarta. News broadcasts offered by the non-RR1 stations themselves were practically non-existent. Programming, at least in the evening, from the Jakarta area stations was confined to music with many advertisements. Music featured old style Western Pops (in English), with some "modern" Indonesian vocals. If you wished to purchase

your own music, in Jakarta, you would need to have a cassette player - I cannot recall seeing any shops at all there that sold recordings on discs!

The 120 metre band is commonly used for morning and noon transmissions - some outlets are also used in the evenings. Interesting programming in English, for 30 minutes daily, was noted from RRI-Surabaya, on 2370 at 0930 GMT with news about the Surabaya area, and then some English pop songs. English news from RRI-Yogyakarta from 1130-1145GMT on 5047 was regularly heard. English from Jakarta on 2450 was noted in the Metropolitan program at 1130 to 1200GMT. From our beach location just south of Denpasar, good reception was noted in the day from RRI-Banjarmasin, with its noon broadcast commencing at 0400 GMT on 5970 kHz.

Daytime reception on the higher SW frequencies was limited, due to the simple receiver used. However, the 49 metre band received Kuala Lumpur 5965 (Malay), 6025 (Chinese), and the Overseas Service on 6175; Singapore on 6000 (CC), and 6135 (Malay); BBC Far Eastern station on 6195. Signals from further afield started to come in at around 3.30pm (0830 GMT) about 2½ hours before sunset - these included KGEI 5980, AFRTS Phl 6095, and VOA Phl 6125.

The travelling was tiring, and the DXing was done on a superficial kind of basis. If one had the opportunity of an extended stay in the country, then I would feel that it would be an ideal DX locality, both for SW and MW. First hand knowledge and direct personal involvement in any kind of activity is always of supreme importance.

(SWC ed note: the red pen was used extensively here due to main info being on MW activities and some similar info on Indonesia in FRENDX a few issues ago.)

"OH, YEAH??:?:?:?"

Brandon Lovett writes that a recent Short Wave Centre article by Marlin Field carried the statement that no religious shortwave statement has ever been nationalized by the government. Actually, this is not correct. The Voice of Tangier, the Freed's (of TWR fame) first SWBC station, was nationalized by the Moroccan government many years ago. It was this forced shutdown that prompted them to lease the transmitters of Radio Monte Carlo for the present day Trans World Radio. Of course, in 1964, TWR expanded into Bonaire, Netherlands Antilles.

THANK YOU VERY MUCH FOR THE QSL in:  
 Indonesian: Banjak Terima kasih stas QSL.  
 Hungarian: Köszönöm szépen a QSLt.  
 Hawaiian: Mahalo nui loa no ka walaau.  
 Estonian: Tänan väga QSL eest.

## "A Cure for the Summer-time DX Blues"

by Scott Reeves

Don't let summer's QRN get you down. Summer here in North America offers excellent opportunities for 31 mb Latin American DX during the daylight hours. Listening to the 31 mb in the roughly 1100-1900 time frame frees you from the QRM of most powerhouse stations, although you do have to put up with fading and atmospheric noise. Anyway, fading and QRN is easier to work around than the QRM of powerful overseas stations. This type of DXing has yielded North American DXers a goldmine of DX; 12 countries and 26 stations - but the sky is your limit.

The following is a survey of stations logged over the past two years, with most indicated sign on times as per the WRTVH75. Please note that the signal peaks are those of my QTH, and that QRM may cancel out some stations at some times. Omitted is HCJB, due to ever changing schedules. As for QSLs, every station, with the possible exception of Radio Sideral, has replied to reception reports, and the vast majority of stations are excellent verifiers.

- 9505 RTV Dominicana, Dominican Republic. Listed \*1000, and used to be heard past 1600GMT, but now on \*2200.
- 9510 R Barquisimeto, Venezuela, is heard daily \*1200-0400\*
- 9515 Lvd America Latina, Mexico, heard \*1200-1800, peaking 1300-1430 here in Laurel
- 9520 R La Cronica, Peru, \*1100, rarely heard to past 1430
- 9550 R Grenada, Grenada, is heard daily \*1545-1930\*
- 9555 R Nacional, El Salvador, is still scheduled \*1200, but this freq hasn't been heard
- 9555 La Hora Exacta, Mexico (time stations), is irr., but has been heard by Hauser and Behr around 1500-1800
- 9562 R Nacional del Peru, Peru, \*1100 sometimes past 1430
- 9576 R Comercial, El Salvador, is an enviable DX catch, scheduled \*1200, and heard best from 1300-1400
- 9580v R Mar, Nicaragua, \*1200; on average days it peaks 1330; on many days no fade out
- 9594 R Cultura da Bahia, Brazil, on \*0900, rarely to 1330 or so
- 9600 R Universidad de Mexico, Mexico, \*1300 past 1900 at times, but now reptd on 9767
- 9625 R Atlantida, Peru, is listed \*0900, peaking rarely 1230-1330; hrd as late as 1600
- 9630 R Nacional, Colombia, often past 1430 or even all day
- 9645 TIFC, Costa Rica, sometimes heard 1100-1630
- 9675 R Del Pacifico, Peru, daily \*1145; late receptions at 1930
- 9682v R Puerto la Cruz, Venezuela. Noted irr peaking 1330-1530
- 9695 R Rio Mar, Brazil, listed \*1200 often peaking 1330-1530 - and at times, no fadeout
- 9704v R Mexico, Mexico, often heard. Scheduled \*1255-1605\*
- 9709v R Tropical, Peru, \*1050; heard before at \*1300-1345
- 9720v R Victoria, Peru, heard even less than above; try 1100-1330
- 9750 R Occidente, Venezuela, often heard with no fade out. List \*1030
- 9756 R Sideral, Peru. Watch for this around 1100
- 9760 R Nacional, Guatemala, listed \*1200. May be irregular
- 9770 4VEH, Haiti, often heard in English 1100-1400

\*/m/v/=/

## "THE DEUTSCHE WELLE IN TWILIGHT"

State of Things

from STERN, Heft Nr 15, 3 April 75, C8041X  
translated by: Richard A. Schwartz

Intimidated, Muzzled, and Blackmailed: Why the Cologne SW-Transmitter Deutsche Welle Plunges from One Crises Into Another

A melody from Beethoven's opera "Fidelio" is regarded as one of the most popular pieces of music in the world. This is the interval signal from the Deutsche Welle: "Der Bruder sucht seine Brüder" (the brother seeking his brothers - an innuendo of the confraternity of humanity which DW presumably attempts to engender). For the last 22 years news has been directed to and received by points from Samoa to Siberia, from Greenland to Australia,

This massive program has been broadcasted for a total of 89 hours a day in 33 languages, produced by 400 editors of the Cologne DW-center. With a subvention of 160 million DM annually, according to the telecommunications law of the Federal Republic of Germany, DW is obligated to provide a comprehensive picture of the political, cultural, and economic life in Germany to the world, and ventilate German attitudes to issues of international import.

DW accomplishes this task frequently with a bit of subterfuge: it advises the target countries not only of events in Germany, but of news and conditions in their own respective countries. However, Walter Steigner, Intendant of DW, has stated: "Authoritarian governments do not necessarily like this technique". Steigner should know it. This Journalist - during WW II news editor of the military newspaper "Von der Maas bis an die Memel" (From the Maas to the Memel), later director of the station "Sender Freies Berlin" - is responsible for the fact that DW succumbed to threats of blackmail and intimidation



minutes with very little effort.

(b) Hollow rod - to sink a hollow rod to any depth, you will need appropriate adapters, reducers, etc., to get a standard garden-hose female coupling attached tightly (either threaded, brazed, or epoxied) onto the tube. Then, connect your hose to the rod, turn on the water, and just keep a steady pressure on the tube while it burrows its way down. A ham friend put one down 20 feet in 15 minutes, with virtually no effort, in this manner. Just try beating a pipe down 20 feet with a sledge! If you live anywhere but in a swamp, you'll soon give up on that idea.

# BBC

"OBSERVATIONS"

with Neil Greenridge

## World Radio Club



WORLD  
RADIO  
CLUB

The BBC World Radio Club is quite a useful and interesting group for the DXer to join. Membership is open to anyone simply by request to the BBC, Bush House, London, England.

Free program schedules with frequencies are available as well as leaflets on receivers, antennas, etc. Each week the 15 minute DX Program "World Radio Club" is broadcast. It includes news, DX Tips, interviews, etc.

Periodically there is a DX Pennant Award question asked on the program. Any member answering correctly is sent a BBC WRC pennant. One recent question was the frequency in Hz of middle C on the piano. (256 Hz).

Once a year the main contest, the DX Award Competition, takes place, open only to members. Last year the Contest was based on monitoring from 11-24 August. The requirements were:

- (1) Report on a BBC World Service broadcast in English originating in the U-K.
- (2) Report on a BBC World Service broadcast in any language from one of the BBC's 3 main relay bases.
- (3) Report on a BBC broadcast for each of the other 2 bases.

One of the other of 2,3, & 4 had to be an English language broadcast; and the others had to be different foreign languages from each of the other foreign relay bases.

Correct replies received a special certificate, and the very best entry received a special prize. This past winner from Pakistan received a copy of the WRTVH.

I found it very difficult in the Eastern USA to receive the Far Eastern Relay station. In reply to a complaint by a US DXer about the difficulty of the Award Competition, the organizers of the Competition stated that the BBC deliberately made the requirements difficult in order to ensure that the coveted certificated would be well deserved.

A few words about the BBC in general. The English language service is on the air 24 hours a day, and even though the broadcasts are beamed specifically to NA for only a part of the day, the BBC can actually be heard quite well for the full 24 hours. The BBC should be considered not a DX catch, for it is a source of cultural and informational enrichment in detailed news, analyses, radio plays, musical concerts, science reports, sports, etc., which make up its varied fare.

The monthly program guide "London Calling" is available free on request. It is a cultural and informational gem. "London Calling" should be as much a part of the DXers monthly mail as the DXing magazines.

# DX Award



me the most unusual pennant in the most unusual way - a large green one with the head of a deer as the main attraction rolled up in an envelope. Another unusual one comes from Radio Sonora, El Salvador, 940kcs. It shows a rooster playing a guitar.

Since 1961 I have accumulated pennants, flags, and the like from 206 shortwave and AM stations in 58 countries, the last coming from Radio El Sol in Peru after 15 years of listening an 15 reception reports. My total collection, however, is somewhat larger as some stations over the years have sent out different pennants. Emissora Gran Colombia in Quito, Ecuador, for example, seems to send out a different one every year, each one changed only slightly from the preceding year. In fact, the only change is the year of broadcasting that the station is commemorating with the issue of the pennant. La Voz de Caqueta, Radio Suyapa, and Radiodifusora Teresina hold the unique distinction of sending me two different pennants with one verification.

One aspect of collecting pennants has been irritating to me. Each time I read the QSL Report in FRENEX I check the stations that have sent pennants to their listeners. If I do not have one from the specific station, I listen to the station, prepare a report, and request a pennant. More than once I have received a verification but nothing else. In fact, in some cases I have sent a number of reception reports but to no avail, for example, to Emissora Rio San Francisco. All of this is taking into account the fact that in some cases one may obtain a pennant but only under certain conditions. For example, to receive one from the CBC or Radio Portugal one must join the station's DX Club. This involves sending in a number of reports to the station over a period of time. A pennant from the BBC Radio Club is even more difficult to obtain. The Club awards 25 pennants as prizes each month, details for the competition being available only on its broadcasts over the BBC. The Voice of the Philippines sends pennants, but only to those who fill out and return a listener's questionnaire. Radio Pio XII required me to send a second reception report before sending me a pennant, a beautiful one when it came.

Some stations have apologized for not having pennants and have sent something else instead, usually postal cards or postage stamps of their country. Others have written "will send you one in the future". If all of these had done so, my collection would be somewhat larger than it is today. In most cases a new reception report at a later date has not brought the expected souvenir.

Even with this bit of irritation I and other DXers have experienced, we'll keep on collecting pennants. For some DXers, including the writer of this article, collecting pennants is about as important, if not as important, as the collecting of the QSL cards. I've yet to have a QSL card delivered to me personally by station personnel as happened to me with one pennant, my most prized one, from HRVC. It was delivered to me personally in Benton Harbour, Mich., where I lived at the time, by the station's program director, Ron Youngs, now a pastor in Minnesota.

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### "THIS IS FINN DX..."

by Juha Hintikka, DX Editor of R. Finland

Would you believe the world's best DX program comes from Finland? In any case, that's what many listener's to Finn DX, the weekly DX program of Radio Finland, seem to think. For those of you who may not be yet familiar with our program, here's a brief introduction:

Finn DX is produced by the Friendly DX Club. We started in summer 1972 with a 5-minute spot of DX news. A few months later our program time was extended to 10 minutes, and now, as of June this year, we have 15 minutes for each addition of Finn DX. The increase in program time is, no doubt, due to the good response from listeners. To keep the audience figures high and, who knows, once again extend the program time, we would not only like to have all our regular listeners with us, but also scores of new friends every time we are on the air.

The team responsible for Finn DX consists of experienced and renowned DXers like Jyrki K. Talvitie, one of the founders of organized DXing in Finland and former president of the European DX Council (EDXC); Kai O. Nieminen, who knows a lot about the technical side of DXing; Hannu Nillekselä, Europe's specialist Nr. 1 in North American medium-wave stations; and Simo S. Soininen, an expert in Latin America and editor-in-chief of DX-Kuuntelija, our world famous club paper. New members in the team include Antti Marvia, who probably knows more about pirate radio stations than anyone else in these latitudes; Ilhan Hamid, who, as a lawyer, tries to keep Antti and other pirate fans informed about what is legal in broadcasting and what it is not, and Petteri Kostermä, who has been to more DX countries than many of us through our radio sets. I, myself, fall somewhere in the middle with ten years of experience as a DXer and 147 countries verified.

As broadcasters we are amateurs after all, except for David Mawby, an Englishman residing permanently in Finland, whom you can hear on other programs of Radio Finland as well

and who was earlier employed by the BBC. David is now moving away from Helsinki, which will bring about some changes in the program structure and which hopefully will enable us to report more on DX events taking place in the inner parts of the country. Obviously, he will produce every fourth program by himself without any assistance from the Helsinki members of the team.

In our programs we have covered topics ranging from the effect of magnetic disturbances on the propagation of radio waves to the presentation of the world's most unusual station identifications. We have made features of radio stations in Hawaii, Mexico, Indonesia, Turkey, and many other exotic countries, after personal visits to these places, of course.

So as not to make you fed up with our voices we sometimes make interviews with Finnish and foreign DXers, radio station representatives and other persons who may be of interest to DXers. We also play an average of one piece of music in each program, and that, I may assure you, is the kind of music you seldom hear in any other DX program.

So, that's what we are offering you! What we would like you to offer us is reception reports and comments on the program, or any other material that we might use in the program. You can send your letters either to the address of Radio Finland or to that of the club. For a prompt reply to your reception report I, however, suggest that you addressed your letter to Radio Finland, Keskkatu 2, SF-00260 Helsinki 26, Finland; and for instant inclusion in the program to Friendly DX Club, P.O. Box 214, SF-00101 Helsinki 10, Finland. In the meantime, tune in and find out if Finn DX be your DX program, too!

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VARIETY, 16 October 1974

"BIGGEST SMELL IN COLOGNE, AS REDS PRESERVE THE RADIO JAM"

by Hazel Guild via Glenn Hauser

Frankfurt, Oct. 15

The international battle of the airwaves is intensifying here as despite the growing friendship links between East and West Germany — the Reds are stepping up their jamming.

Particularly hard hit of late have been the Deutsche Welle broadcasts at Cologne. The Russians let the station know that they've been interfering with the broadcasts ever since the outlet started transmitting readings from Alexander Solzhenitsyn's "Gulag Archipelago." Russian told its readers that the Cologne station has been beaming "anti-Soviet propaganda."

Problems date back a couple of decades since the United Nations General Assembly passed a resolution in 1950 condemning the international jamming of radio broadcasts. At that time, five East Bloc countries refused to agree to the resolution.

Salzhenitsyn remarked recently that "interfering with radio broadcasts is an insult to mankind and reduces people to the level of robots." Nonetheless, the jamming continues — and every time one of the Eastern satellites is particularly annoyed at the West German stations, the jam goes on harder, louder and longer.

Three Jamming Methods

Jamming experts cite three kinds of interferences. First, there are jammers on certain frequencies that send out loud hums. Second — the method used mainly against the Voice of America and the BBC — is to send a radio show on the same frequency so that the audiences hear two overlapping programs. Radio Majak of the Soviet broadcasting is one of the specialists in this.

Third method is the one that insiders report is being used between the Communist Chinese and the Russians. It's called "white jamming" and involves crackling and hissing sounds that almost completely eliminate the long-distance shows.

Being jammed is really a status symbol among nations, as it means that the shows are the ones bringing truth and generally forbidden information to the Eastern Bloc nations, to the annoyance of their rigid governments.

Most popular jamming stations in Germany are usually Radio Liberty and Radio Free Europe, with BBC, Voice of America, and Deutsche Welle also on the list. Communist countries, too, have been hitting out at Radio Nacional Madrid and Israeli stations, it's reported here.

Now and then, the Russians suddenly and surprisingly relent on jamming as apparently a short-lived friendship move. When Deutsche Welle, BBC and Voice of America were reporting on the European security conference meets, the Russians suddenly let up on the 3,000 or so jamming stations that had been interfering with the news shows from these three outlets. But the halt was brief, and the jams are going on again.

USSR Vs. Red China

Russians, though, have been concentrating more of their efforts to the East instead of to the West lately, as they are trying to cut out Russian-language broadcasts from Red China. One of the difficulties is that China has a friend in the midst of Soviet territory, Albania, which has been picking up and rebroadcasting some of the Chinese shows.

Right now, insiders estimate that it's much more costly for the

Russians to keep up their interference than it would be to establish their own new radio programs to sell the residents their own point of view. Russian jamming is generally estimated to cost well over \$200,000,000 a year, with considerable financial and jamming aid from their allies in East Germany, Bulgaria and Czechoslovakia.

Some of the Russian satellites, though, like Rumania, Poland, Hungary and Yugoslavia, have ceased jamming, and others have stepped up their activities.

Deutsche Welle's Greek shows were interrupted between 1967 and the end of the Junta regime recently, but the new government is no longer interested in interfering — to the joy of thousands of Greeks living in West Germany who no longer need fear reprisals when they go to Greece on vacation and report what they have learned from West German radio and tv shows.

Alma at Early Birds

West Germany's Deutschlandfunk is concentrating more than ever on getting information into East Germany, with a current budget of around \$30,000,000 a year for its shortwave and middle-wave programs. The station's experts have determined that East Germans go to work earlier than the West Germans do, and thus are increasing their informational and news shows between 6 and 8 a.m. They have even asked for the right to base a news correspondent in East Berlin, so that they can tell the East Germans what's going on in the country, but so far they haven't gotten the right.

East Germans are particularly anxious to keep their 17,000,000 citizens from listening to RIAS shows from West Berlin, but it's really a one-way street. Nobody bothers to jam shows in West Germany, and West Berliners were recently asked what programs they listen to — 54% reported Sender Free Berlin, 38% RIAS, 3% American Forces Network (AFN), while 1% heard Radio Luxembourg, Deutschlandfunk or other shows. But not a single person interviewed was interested in listening to the East German radio.

# Daughter helps broadcast name of Marconi, wireless inventor

By William Gildea  
Washington Post Service  
Washington, D. C. — For years, the name Guglielmo

Marconi has been slipping from public awareness. As an example, the Washington Post, trusting its files to be complete, carried no story relating to him for 14 years, until last year when he was inducted into a National Inventors Hall of Fame here.

### Fellowship given

That was the last heard of him until the other night when the first annual Marconi International Fellowship was presented here. Providing a grant of \$25,000 for work "to improve the quality of human life," the award was the idea of Mrs. Giola Marconi Braga, daughter of the inventor.

"It occurred to me while I was watching the first man to land on the moon on television that in all those hours they had to fill in, never once was the name Marconi mentioned," she said.

"My children go to school, and the name Marconi is never mentioned. 'Mommy,' they say, 'you must exaggerate. Nobody ever heard of Marconi.'"

### Titanic role

Once, people did. He often traveled to the United States and was well known here. In 1912, when the Titanic sank, hundreds of survivors were brought to New York and, learning that Marconi was in the city, marched en masse to his hotel, cheered him and cried out, "We owe our lives to you."

All because of the wireless aboard ship. He sent his first message a distance of one mile in 1895. Two years later, an 18 mile message from ship to shore opened the era of radio communications. And in 1901 he sent the first transatlantic message.

Mrs. Braga, who was 19 when her father died in 1937, recalled that Marconi never really sat back and enjoyed commercial radio, though he was the one who made it possible. Rather, she depicted him always busy with his work, trying to improve it.

### Worked on yacht

"He was most concerned with safety at sea and saw his invention as a way to save lives," Mrs. Braga said. "He was a very man himself and loved the sea. That is why he bought a yacht, which became his floating



Marconi at one of his wireless stations in 1931

lab. I spent summers with him on the yacht."

She said she remembered distinctly Marconi transmitting from the yacht, in the port of Genoa, an electric impulse that closed a circuit and turned on lights in Sydney, Australia, opening an exposition there in 1930.

In his final years, she said, he worked at developing radar on the yacht.

"When he would come in to shore, he would have the shades drawn and the captain would have nothing to go on but the radar signals."

Mrs. Braga moved to New York from Italy in 1932 and immediately made an appointment for a job interview with David Sarnoff, president of RCA Corp. It was the company that was the forerunner of RCA that in 1919 had purchased American rights to the wireless from the Marconi Co.

"When the great moment arrived to see Sarnoff, I was very nervous," Mrs. Braga said. "His office was high up in the Rockefeller Center. It was an enormous room. He said, 'Relax, if it weren't for your father, none of this would be here. What can I do for you?'"

When she asked for a job, Sarnoff, who as a 21 year old wireless operator received the first distress signal from the Titanic, replied that her father had once given him a job, for \$5.50 a week. She said she hoped Sarnoff would do better for her.

### History of radio

He placed her with NBC, where she "wrote memo after memo" to Sarnoff himself, decrying what she viewed as wasteful television programing and urging increased attention to the arts. After two years, she married George Braga of New Jersey,

a former sugar manufacturer in Cuba.

The first Marconi fellowship will be used to produce a history of radio broadcasting. The award was given to former Massachusetts Institute of Technology President James R. Killian Jr. by Mrs. Braga's friend, Vice President Nelson Rockefeller. Killian turned the \$25,000 grant over to British radio historian Asa Briggs, who will prepare the work.

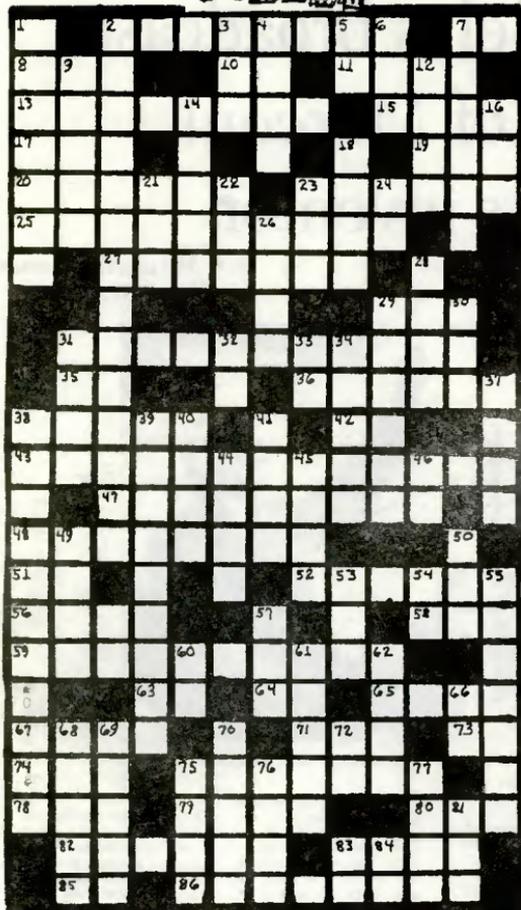
In the future, Mrs. Braga said, she hoped the award, which is administered by the Aspen Institute for Humanistic Studies in Boulder, Colo., and funded by a number of corporations, will be given to qualified young persons, "perhaps those who cannot afford to make a study . . . to finance that dream or inspiration of someone trying to relate science to the good of the community."

VIA MILWAUKEE JOURNAL  
6 MAY 1975

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1518 N. 29th Street  
Milwaukee, Wisc.  
53208 U.S.A.



# PUZZLE



## CLUES ACROSS:

2. External housing of electron tube.
7. To perform.
8. 1.114 meters.
10. Latin for King (abb.).
11. Having adequate power.
13. Amount of radiation.
15. Liver digestive liquid.
17. A curve part.
19. All India Radio.
20. Passover breads.
23. Undesirable in circuits.
25. Colombian network.
27. To act with force.
29. Automatic sensitivity control.
31. Devices for meas. resistance.
35. Symbol for Tellurium.
36. Floating in water.
38. Dress, as for display.
42. Bushels.
43. The exchange of ideas.
47. Not relative to anything else.
48. Also called FOCI on curves.
51. See: Observe!
52. Atmospheric.
56. He is often called Edom.
58. Closely united or alike.
59. Property of circuit element radiating energy away from a point.
63. Heading toward a point.
64. Artificial language.
65. Archaic word meaning lake or pond or marsh.
67. Very small.
71. French word meaning yours.
73. Early Roman coin weighing one pound.
74. Popular detergent around the Mediterranean area.
75. Scantiness of supply.
78. Coward or selfish person.
79. Many of the same.
80. Past of eat.
82. Used to trap gasses in electron tubes.
83. Sound of definite pitch.
85. Symbol for Einsteinium.
86. Formerly Ceylon.

## CLUES DOWN:

1. Capacitor substance.
2. Pertaining to generation of heat by electricity.
3. Measure of energy.
4. Untruths.
5. Diminutive of father.
6. Recede.
7. "Chicken -----"
9. Long Range Navigation
12. Untruth teller
14. Something found
16. Effective Radiated Signal
18. Foot item.
21. Happens when careless with electricity.
22. Word of male respect.
23. Not standing.
24. In contact with the surface.
26. ....and pepper.
28. 3rd person singular of BE.
29. Keen in discernment.
30. Some say goats eat them.
31. Italian eight.
32. Printer's quad.
33.  $\frac{1}{2}$  size of #32
34. Capitol of Morocco.
37. A certain sound.
38. Used to increase speed.
39. In a control system, the tendency to stabilize at more than one point.
40. These belong here: Y U S P
41. 1609.35 meters.
42. Cave creature.
44. Proboscis.
45. Idiomatic: to curse.
46. Same as #28.
49. To outdistance or elude.
50. Bowling target.
53. Tactical Air Command
54. Of a sailing vessel with head in the wind.
55. Musical instrument.
57. Very remote in space or time.
60. To such a degree.
61. Jottings.
62. Spew forth.
63. In a direction toward.
65. Supreme Deity in Egypt.
67. Likeness.
68. Musical sounds.
69. Used to equalize colors.
71. Either.
75. Verification.
76. Northerner in U.S.A.
82. Symbol for Tantalum.

Answers next month.

73%  
Caul

### Arctic Attraction

ROVANIEMI, Finland — At this point, where the Arctic Circle crosses Finland, a Lapp village and a small post office are tourist attractions. All outgoing mail received a special Arctic Circle cancellation.

# LISTENER'S



J 1  
U 9  
L 7  
Y 5

Editor: Glenn Hauser, 1312 West Oak, Anis CA 93701

Many thanks to all who have wished us well in undertaking this editorship! Deadline: 15th

Please note that items from the BBC MS may not be reproduced or broadcast without BBC MS permission. The approach, observations, and speculations in such items are those of this editor, not the BBC MS, which provided the raw data. Last minute items:

VIETNAM Viet Bac regional: 2330-0200, 1130-1400 on 7260, 6845, 4022. Tay Bac: 0200-0400, 0930-1145 on 6329, 9645, 4770. LAOS R. Pathet Lao has taken the freqs of Patriotic Neutralist Forces Radio (c) BBC MS

ANGOLA Until March 31, all privately-owned radio stations had been required to suspend their normal programs, while the Portuguese High Commissioner and the Presidential College of the transitional Government of Angola analyzed the politico-military situation. Since that date, normal programming has been allowed, except that all stations have been required to relay the newcasts of Emissora Oficial, which are being censored by a committee appointed by the Presidential College. At the same time, Emissora Oficial began carrying nothing but music and a reduced number of newcasts, except for certain programs presented by the three political parties, FNLA, MPLA and UNITA. The 1200 GMT news was heard to relay reports from Lourenço Marques and Lisboa. In February it was reported that the First Program of Emissora Oficial was networked to its regional stations (note frequencies!); Cabinda-4925; São Salvador-4825; Henrique de Carvalho-4860; Serra Pinto-4780; Luso-4970; Teixeira de Sousa-4885; schedule 0500(Sun 0600)-2400(Sun 0200). (c) BBC MS, by permission

COLOMBIA According to the Colombian Communications Minister, there are at present 350 commercial radio stations in Colombia broadcasting 280 newcasts daily which produce "an enormous and uncontrollable pollution". The Minister said that the Government intends to set up new monitoring stations to keep a close watch on the radios' programs and to introduce soon a strict radio and television law. (c) BBC MS

CUBA Recent observations indicate that Havana's external service in Guarani is now broadcast at 2200-2300, instead of 2000-2300. (c) BBC MS. The extended hours in Guarani had not been in effect for more than a few months. (gh)

CHILE La Voz de Chile was monitored in June as follows (in addition to English): Italian, 2210, 0030. French, 2230, 0050, 0150, 0250, 1150, 1310. Spanish, 2310, 0130, 0230, 0330, 1230. Arabic, 2330. Russian, 2350, 1130, 1250. German, 0010. This does not follow the rotation given in the WRTVH 75. Reception is best here in the mornings on 11810, afternoons 15150, evenings 9566.1 (when separable from 9565). By the way, did anyone notice just when the Chilean 'beep-beep' jamming of Cuba ceased? I haven't heard it for several months. (gh)

DENMARK Danmarks Radio has resumed an evening broadcast to North America: However, it's only in Danish except for the announcement telling us, in English, that they broadcast only in Danish.... 0200-0245 on ancient 9520 kHz. Still better daytimes on 15165. (gh, SCDX 5/20)

EGYPT Having trouble reporting to the Arab world? Here's your chance to learn Arabic. Cairo's "Voice of Africa" service carries lessons for English-speakers, at 17725 kHz, 1515-1600. Reiner Matzinsky, Tirschenreuth, W. Germany reports very good reception. (SCDX 5/13)

FINLAND Radio Finland's English programs have been 'temporarily suspended' due to a strike of 'free-lance program-makers' on May 29. It's still going, as of June 24. The earlier doubts about continued funding for English broadcasts were favorably resolved on May 30. (gh, BBC MS)

GERMANY, WEST Not a tactic to be emulated by North Americans upset about losing their nightly three-hour ration of Deutsche Welle cheer in English, but early this year in Ethiopia there were threats against the lives of German nationals, if DW didn't quit broadcasting in Amharic. DW seemed to be complying, but in February the BBC MS reported: (c) "DPA reports that the DW broadcasting Council decided, by a small majority, not to suspend broadcasts in Amharic to Ethiopia, thus going against the recommendations of its Director, Walter Steigner. However, the council approved his decision taken at the beginning of February not to broadcast for the time being news dealing with Ethiopian domestic affairs in the Amharic program because of possible danger to German nationals in Ethiopia." You can DX this controversial broadcast at 1415-1500 on 11965, 15410, 17825, 21600 (summer schedule; some are Rwanda, maybe Malta) (gh)

GREECE Differing slightly from the projected summer sked in the WRTVH 75 is this rundown of EIRT's Greek-only international broadcasts:

0500-0600	6175 Turkey/Cyprus	1400-1450	9520 Panama CZ	1900-1950	7215 Europe	(NHK DX)
0800-0950	15345 Australia	1500-1550	7215 Egypt	2000-2050	7140 Azores	program
1000-1150	15130 C. Africa	1600-1700	15345 Balkans	2100-2150	6175 Australia	June 1)
1300-1350	9520 Spain/Portugal	1715-1750	7215 USSR	2200-2250	11720 Japan	

HUNGARY Ever wonder why Radio Budapest bothers with 15, 17 (and during some seasons, even 21) MHz channels to NA in our evenings? The 1 or 2 kW units are for 'modulation experimentation'. We've never heard them, but they're barely possible in midsummer when there's lots of light on the path. How's your European QRP? Check 17710 and 15220 at 2230-0415 (Thurs, Sun-0400; Mon -0500). If you succeed, please let us know if they're SSB, FM, pulse, 10%, 150% modulation, or what! (gh)

**IRAQ** Radio Baghdad's 'main Iraqi domestic service in Arabic' (and where specified, some foreign languages) were observed as follows in May: (c) BBC MS (contradictions, theirs)  
 3195 1630-1730 Baluchi, 1700-2000 Persian, 7180 0225-0700, 0900-1900, 2000-2325  
 2000-2100 Turkish 9635 0225-0805, 1000-1340  
 3952 0800-1100 Persian, 1300-1600, 1930-2325 11785 0600-0900, 1000-2325  
 6095 0225-1700, 1700-2000 Persian, 1900-2325 17770 0225-0600, 0600-1000 irregularly,  
 6158 0225-0800, 1400-1630, 1730-2325 1000-2325

**IRELAND** Last month's dubious Dublin International item should have carried my doubts about its veracity. The SCDX reporter was Paul Ennis, in Dublin (gh)

**MALAGASY REP.** Radio Nederland moved to 9585 for the English program at 2000-2120, first noted June 16; much improved over 11730. It's no coincidence that REI had recently left this channel. These two, and several other NATO-area stations coordinate their frequency selection. In fact, their representatives are meeting in Boulder, Colorado, in early July to iron out the fall schedules. (gh)

**MALTA** RCJ unexpectedly and without explanation dropped its remaining Malta relays (0600-0800 and 1800-1957) on May 29. I've heard unconfirmed reports that the Maltese pulled the plug on them, though I know of no difficulties in Maltese/Canadian relations. (gh)

**MONGOLIA** Try Ulan Bator on 5054 to 1500\*; good signal. The former sign off was at 1420; duals are 4762 and 4077 (drifting into the clear from 4080). 10650 is no longer heard, nor are 4950 and 5960, which have returned to 7262 and 7237. The observed schedule on 7262: 0900-1030 Mongolian (30 mins. ea. of MS, Moscow and overseas service), 1030-1100 in UNID lang. On 7262 and 7237: 1300-1330 Chinese, 1330-1400 Mongolian, and a new Chinese service at 1400-1430. (Michael Willis, Hampton, Victoria) (trx, Mike: gh)

**PANAMA** An inactive station becomes even more inactive. La Voz del Barú (not heard on 6045 kHz) in David, Chiriquí, was destroyed by fire on 16 Feb. Damage estimated at more than \$25,000. (c) BBC MS (Now we'll have to rely on MW harmonics...hi. gh)

**PORTUGAL** Rádio Trans-Europa finds yet another use. On April 1, the Portuguese Social Communications Ministry introduced daily broadcasts for Portuguese working abroad "from Sweden to Italy" but mainly in West Germany. RTE, a commercial enterprise, is obliged to provide two hours a day of free air time to the Portuguese State, so the initial schedule may have been expanded from Mon-Fri 1700-1800, and 1200-1300 Sundays on 6115. (c) BBC MS

**RWANDA** Speaking of RTE, which also relays DW, and broadcasts programs of Adventist World Radio.... On July 1, ANR will begin using DW's Kigali relay too. (SCDX 6/17)

**SAUDI ARABIA** Riyadh Radio began broadcasts of the Qur'an on April 21 at 1400-1600 to SE Asia, 1600-1800 to N Africa, both on 21620 kHz. Probably encountering R France QRM, a move to 21590 followed, which just happens to be used by IBA, Israel, 1400-1640. (c) BBC MS

**TIMOR (PORT.)** Monitoring in March turned up some interesting aspects of Díli's schedule on 3668 kHz: 1000-1030 Saturdays, in Hakka; 1000-1100 Sundays in Timor dialect, Wednesdays in Fretilin Party political program; 1200-1215 relay Lisboa service to Macao and Timor. Sign off is at 1300 except Sundays when another Lisboa relay lasts until 1525. (c) BBC MS

**YEMEN, NORTH** In March, San'a was heard on a new frequency, 7235, dual 5805 at 1400-2200. In May it had changed to 7300 kHz (c) BBC MS Also dual 1100-2200 is 6135 (c) BBC MS

#### CLANDESTINE CORNER

**CUBA RADIO CUBA LIBRE** was heard almost daily in Ontario, May 15-23, on a variable frequency of 7076-7082 kHz. Program length varies from 15 to 40 minutes of Spanish anti-Castro talks and some march music, such as 0105-0145\*, 0130-0200\*, 0150-0217\*. Transmitter has slow upward drift of 2-300 Hz per half hour; sometimes jumps a few kHz. Signal varies from very strong to weak, probably running at least 1 kW from a shipboard or other mobile location, although they claim to be in the Sierra Maestra, announcing: "transmite desde las gloriosas montañas de Oriente", "contra la tiranía de Fidel Castro", and usually closes with "Viva Cuba Libre! Viva Cristo Rey!" Checking my old loggings, I found Radio Cuba Libre first listed in Sept. 1960 on 6130 kHz, but the present operation may not be the same station that was heard almost 15 years ago. (Ernie Behr, Kingston, Ont.)

**CHILE** Cuba's nemesis, now is the target of clandestine broadcasts. Radio Algiers began beaming to Chile April 1 at 2330-2400 on 7145 kHz. "La Voz de la Resistencia Chilena" is prepared by the information office of the Chilean resistance in Algeria. Also in April, USSR's Radioemisora Paz y Progreso began a new Spanish broadcast to Chile at 0200-0230. It is to include a daily program of "Radio Magallanes" (a former Chilean station) thitherto given at 0130 on Tuesdays and Thursdays. (c) BBC MS (no frequencies given--gh)

**MIDEAST** developments. "Voice of Iraqi Kurdistan," now defunct, was visited by a correspondent of the Beirut newspaper "Daily Star". The station in the mountains of northern Iraq was entirely underground and camouflaged. An Iraqi official said the exact location was never detected. The report, published April 18, says the site was near Darband at the start of the Shuman border, one km south of the Hamilton Road. The radio equipment, mostly British and American, was completely wrecked by the Kurds before abandonment. (c) BBC MS "Voice of the People from the Heart of the Arabian Peninsula", anti-Saudi went silent on March 25, when King Faysal was assassinated, and is presumed discontinued. It began on May 10, 1973 from a site believed to be in Iraq, on variables 11850, 9570, 7195. "Voice of Free Yemeni South" anti-PDRY, at 1630-2000 has moved to 9260v from 8405 kHz. (c) BBC MS Able Nathan's shipborne "Voice of Peace" is again active on 1440 kHz MW (SCDX 6/17)

## THE SITUATION

(Wherein we no longer try to categorize clandestine vs. official....)

CAMBODIA "Phnom Penh Voice of the National United Front of Cambodia", not to be confused with the station of the same name minus "Phnom Penh", purported to broadcast from that city. It announced that from April 5 it would broadcast the latest battle reports in addition to its normal programs at 0100 and 0700 on 7312 kHz. The pro-communist station expanded its schedule on April 17 and 18, and left the air, not to be heard again, at 0300 April 21.

(c) BBC MS. Another clandestine station, calling itself "La Voix de la Nation Future," operates from Thailand in the Khmers language. LV du FUNK says this station belongs to the "Khmers Serel" movement, a pro-American organization controlled by the CIA. (Bernhard Chénal, Mulhouse, France, in SCDX 4/29. No frequency or further details have yet surfaced-gh)

LAOS "Radio Pathet Lao" introduced a new transmitter, for a maximum of five for some broadcasts. Subsequent frequency changes led to the following usage: 8735 (ex-8658) 0256-0615; 7480 0256-0615, 0958-1600; 7265 (ex-7310) and 6215, all times; 6200 2328-0130, 0256-0615, 0958-1600; 4630 (ex-4660) 2225-0230, 0855-1600. Following a new program structure as of May 19, Patriotic Neutralist Forces programs were introduced at 0000 and 1130, presumably replacing "Patriotic Neutralist Forces Radio" broadcasts which have not been heard recently.

(c) BBC MS. However, more recently, our monitor says Pathet Lao on new 7490 at 0955-1605, and confirms use of four other frequencies simultaneously: 7310 (still), 6213, 6200, 4653w. Previously it was thought that 6213 replaced 7310. However, note that many frequencies are not heard for long spaces at a time in parallel. (Mike Willis) Also, Voice of Peaceful Laos (frequency? gh) now running to 1520\* often dual 6130 kHz (Willis via Larry Magne)

VIETNAM After VTVN's closure, Radio of Liberated Saigon (Dai Phat-thanh Saigon Giai-Phong) broadcasts from May 1 on 4877, 6165, 7175, 7245, 9620 and 9755 kHz at 2200-0400 and 0700-1600; noted relaying Radio Liberation around 1000-1100. (Isao Ugusa, Kobe, Japan) BBC MS confirms these observations, and notes that at 0900 April 30, relays of Liberation Radio commenced. The latter station had abandoned its scheduled programs for a continuous news and music service on 10225 and 7417 kHz. Already on March 21, special programs began at 0000-0200 for liberation troops; officers, soldiers and police of the Saigon administration; and for urban areas. At the same time, two additional frequencies were withdrawn from Radio Hanoi at 2200-0200 and 1100-1700: 6055 and 4995 kHz (Willis confirms 6055 at 1100-1500-). As the communist conquest spread, even more programs were introduced on April 1 at 0200-0400 (PLA program, and messages from "Puppet" troops to their families) and at 0700-0900 (including programs for southern cities, and for enemy troops, all in Vietnamese). On May 6th the Liberation Radio schedule for South Vietnam became a solid 2200-1700. (c) BBC MS

Radio Hanoi's Vietnamese programs to Vietnam were reorganized in March into three networks: to N & S Vietnam 2058-2400, 0900-1700 on 10056, 7375, 6450, 4892; at 2058-2400 and 1100-1656 on 6055; 2205-2400, 0900-1525 on 4708. Relay of domestic service to N Vietnam: 0000-0630, 0800-0900 on 6450, 4892; 0330-0600, 0800-0900 on 4708. To S Vietnam: 0000-0600 and 0730-0900 on 10056, 7375; 0000-0600 only on 6055 kHz. These last transmissions, on April 30, were given over to continuous news, music and patriotic songs. (c) BBC MS; 9964-a spur

Radio Hanoi's Indochina Network made some changes in languages about the same time. 9840 and 7512 kHz are used at 2300-0500, 0800-1630, with 4860 kHz added at 2300-2400, 0100-0130, 0330-0500, 0900-1630. 0000 Cantonese, 0100 Cambodian, 0130 Vietnamese (dictation), 0330 Cambodian, 0400 Laotian -0500. 0800 Viet (dict), 0900 Camb., 0930 Lao., 1100 Montagnard, 1400 Lao., 1430 Thai, 1530 Viet, 1600 Camb -1630. 2300 Camb., 2330 Lao. (c) BBC MS

Still a mystery is the non-Hanoi, non-Liberation Radio Viet on 7485 (Willis via Magne)

CHINA China Press Agency has moved again, outdated the previously published BBC MS sked. 1100-1400 on 5925, 12073, 16105, 16270, 16435, 17221, 17506  
1500-1700 on 5525, 11120, 12075, 16105, 17504, 16342, 14820, 13700 (Mike Willis)

Regionals. Some late schedules, observed by the BBC MS:

Changsha (Hunan Provincial) Standard Chinese on 4990 at 2105-1620 (exc. 0520-0845 Tue, Fri)  
Kunming Provincial #1, Standard Chinese on 4760 at 2150-1620 (exc. 0600-0920 Mon, Wed-Sat)  
Kunming Provincial #2, Std. Chinese & minorities, 6937 at 2155-0100, 1030-1605.  
Kweiyang Provincial, Std. Chinese, Kweichow, 7275, 3260, 2115-0005, 0150-0620, 0950-1605.

Inner Mongolian broadcasting was reorganized in Dec, Jan to this pattern:

Huhehot (I.M. Reg. Serv. in Mong.) 2130-0100, 0230-0550 (Sun 2130-0550), 0900-1335, 1500-1600 on 4895, 4068. This includes Peking's Mong. domestic at 0430-0525 and 1200-1255. The same transmitters carry Peking's Mong. external 1400-1500, Russian 1600-.  
Huhehot in Std. Chinese: 2105-0100, 0305-0520, 0850-1520 on 6840, 3270. Peking Program I relays are at 2230-2300, 0000-0100, 0900-1030, 1200-1230, 1400-1430, 1500-1515; Russ. 1600-.  
Silinhot, Silingol Reg. Serv. in Mong. 2155-0100, 0320-0550, 0950-1350 on 7200.  
Silinhot, Std. Chinese, 2200-0100, 0950-1000, on 4950.  
Tungsheng, Ikechao Reg. Serv. in Mong. 2145-0100, 0255-0525, 0945-1355 on 6045.  
Tungsheng, Std. Chinese, 2125-0100, 0255-0500, 0940-1400 on 4525.

Radio Peking's First Program HS, 2000-1735 (exc. Tue. 0600-0845) uses these frequencies at various times: 17605, 15550, 15230, 15030, 12120, 11330, 11290, 9080, 9064, 7935, 7504, 7095, 6750, 6665, 6225, 5880, 5320, 4905, 4800, 4460, 3450, 3220 kHz.

Radio Peking's Second Program HS, 2100-1600 (Sun -1645; exc Wed, Fri 0600-0950) uses these frequencies (again, not all at same time): 15590, 15450, 11505, 11040, 10260, 9745, 9670, 9510, 9020, 8005, 7770, 7190, 6745, 5163, 5075, 4850, 4250, 3290. all (c) BBC MS. The only channels used at all times are 11290, 9080, 9064, 9020 and 7504 kHz.

And finally, for its domestic minority-language broadcasts, Radio Peking has replaced 6620 kHz as follows: Kazakh 0130-0225 9820 kHz; Tibetan 2330-0025 8565; Uighur 0030-0125 9820. An apparent Soviet-based Chinese-language black clandestine noted jammed on 7300 at \*1520-1530\* (Willis via Magne) We note a mess on 7300 evenings, probably crummy Tirana mxtr (gh)

**KOREA** The Voice for the Revolutionary Reunification for Korea now heard signing off at 1415 on 4115, 4557. (Willis)

MISCELANEA RADIAL

**BELGIUM** Wim Frison, of the BRT-RTB PR dept. writes: "We changed from 9730 to 9755 kHz because our technical adviser in Washington DC, told us we had heavy interference from an Arab station. It is only in a few areas that we have interference from AFRTS. We get fairly good reception reports for our 9755 kHz. We once tested 9785 kHz but we didn't know we were above the band, so we changed again, although we had very good reports. We cannot use our 250 kW to North or South America because we don't have the necessary antennas. And I don't think we will get them very soon." (Out here, Bethany is like a local. Too bad not all of us live in the 'skip zone' donut around Bethany....gh)

**GREAT BRITAIN** An 1100 GMT World Service newscast around June 9 mentioned the strong possibility that BBC External Services in languages other than English would have to be curtailed as from January 1976, because of a cut in the Parliament's grant (Richard N. Allen)

**HANDS OFF OUR IONOSPHERE!!** Radio astronomy is an important science, somewhat akin to DXing. But while we depend on the ionosphere, it's a 'nearly impenetrable barrier' for ground-based radio astronomy at low frequencies. Getting off the ground being a bit expensive, two Boston University researchers propose 'knocking holes' in the ionosphere so the giant dishes can DX the galaxy on shortwave, without blockage by those pesky free electrons. Here's the plan as detailed in the May 17 Science News, in turn drawn from Nature of May 1: Repeat on purpose the "Skylab effect" of 1973 when the last Saturn 5 rocket's exhaust swept a huge temporary 'hole' in the ionosphere about 2000 km across. The first test is likely to be over Arecibo, Puerto Rico; a rocket would inject 100 kg of molecular hydrogen just below the F2 layer, which would produce a vertical tube 200 km across by 1000 km high, in which the free electron density should drop about 2% in less than half an hour, and last for several hours. This means that if you're listening to an LA or African station through this skip point, reception would be wiped out. But the article does not hint at any concern about such effects on SW reception! We can't blame them for wanting to observe the 3 MHz peak in galactic noise, but hope due consideration will be given by the National Science Foundation to the benefits of not knocking holes in our already fragile ionosphere.

**SOLAR-TERRESTRIAL CONDITIONS** Keeping track of natural ionospheric variations is easy now thanks to WWV broadcasts at 18 past the hour, updated daily at 0418. All it takes is a minute a day. You'll find that any given conditions (excellent or disturbed) tend to repeat according to the 27-day solar rotation cycle. By referring to this table, you can compare your unusual receptions to the date in question. Why not get in the habit?

Basically, the 2800-MHz solar flux index corresponds to the propagation efficiency, especially over high-latitude paths and higher frequencies. The A-index indicates how much auroral disturbance there was. Each four columns show date, flux, A-index, field status.

April	13	70	22	S	26	71	7	Q	8	71	12	A	21	68	11	U	2	71	23	A	15	66	9	U		
1 70	7	U	14	69	18	S	27	73	6	Q	9	79	12	A	22	69	10	U	3	69	13	U	16	69	15	D
2 71	5	A	15	69	5	QU	28	74	3	Q	10	69	21	A	23	69	8	U	4	68	14	AU	17	68	8	U
3 72	10	Q	16	69	5	QU	29	72	1	Q	11	68	3	Q	24	69	4	Q	5	67	9	U	18	68	10	U
4 73	6	Q	17	69	5	QU	30	72	5	Q	12	68	2	Q	25	68	8	U	6	66	13	U	19	69	9	U
5 74	7	Q	18	68	7	Q	May			13	68	4	Q	26	67	24	A	7	66	7	Q	20	70	6	Q	
6 74	13	U	19	67	6	Q	1 75	8	U	14	67	11	U	27	70	9	U	8	66	5	Q	21	67	90	U	
7 73	17	A	20	67	12	U	2 80	14	U	15	67	3	Q	28	69	5	Q	9	66	6	QU	22	68	6	QU	
8 73	31	S	21	68	20	A	3 78	18	A	16	67	25	S	29	69	10	U	10	67	6	Q	23	71	4	Q	
9 73	35	S	22	67	14	U	4 78	13	U	17	66	19	S	30	69	8	U	11	66	17	A					
10 73	32	S	23	68	24	A	5 77	23	U	18	67	11	S	31	69	2	Q	12	66	21	A					
11 72	26	S	24	68	14	U	6 75	31	S	19	67	16	S	June				13	66	15	A					
12 70	17	S	25	71	9	U	7 72	14	A	20	67	30	A	1 69	17	A	U	14	66	11	U					

U-unsettled; A-active; Q-quiet; S-storm; D-disturbed. Solar activity was 'very low' on all dates except May 7, 8, 22; June 11, 12, 13, 20, merely 'low'; 'quiet' (?) June 15. For an excellent article on further use of WWV at :14 and :18 see June GST.

**HELPING HAND** Greg Ravenhorst, Rural Route, Hollandale MN 56045, would like to borrow a portable SW receiver to be able to DX during a visit to Europe Aug 19-Sept 11. Postage on him

**CORRECTION SECTION** If you spot any error in LN, whether non-obvious typo, of fact, or once-right-but-wrong now, we urge you to let us know. We try our best to avoid mistakes, but the usefulness of LN depends on its accuracy, if not now, then later. All corrections, and comments on the content or format of LN will be welcomed. Thanks, Glenn Hausen

## PROGRAMS

In our avid pursuit of new stations and countries, it's easy to lose sight of the real purpose of shortwave broadcasting: programs to be listened to for their own worth--not just for 'reception details'. While it isn't our mission to reprint program schedules from stations with mailing lists in the hundreds of thousands, there are some stations which don't publish program titles, or are relatively obscure. If you can monitor the program summary for a station like Radio Cairo, we'll print it here. And if you have a favorite program you'd like others to know about, let us in on that too. We're looking for items like these:

BELGIUM "Belgium Speaking" announced these programs: DX Corner, 4th Monday, repeated on 2nd Monday; press excerpts, Tues.; Letter from Belgium, Wed.; Mailbag, Thurs.; travelogues, Fri. & Sat. (gh)

CANADA Readers of our Denver Post and Popular Electronics columns already know the high marks we award to "As It Happens", a Monday-Friday call-out show carried on the CBC Northern Service at 2230-2400 (Nov-Apr 2330-0100). A good balance of humorous and serious interviews with newsmakers not only in Canada, but in the USA and around the world. The final half hour on Fridays is taken by "Dr. Bundola's Pandemonium Medicine Show" of topical satire out of Vancouver. (gh) Hmmm...as I type this I get my first glimpse of A.I.H. co-host Barbara Frun, thanks to CBC-TV Network skip from CKPR-TV, Thunder Bay...!

SPANISH SAHARA Keep up with the volatile political situation here by monitoring these Spanish programs: "Soldiers of the Sahara" 1430-1600 on 11805; and "Date with the Future" 2330-2400 on 6095 kHz. (c) BEC MS

UZBEK SSR Some Radio Tashkent programs: Stories about the First Revolution, Mon. 1200; International Women's Year, also Mon. 1200; Youth Program, Tue. 1200; Life in the Village, Wed. 1200; Concert, Thu. & Sun. 1400; Our Mailbag, Sat. 1200; Philately or Sports Page, Sun. 1200; Radio Journal Friendship, Cooperation & Contacts, 1st and 15th of each month, 1200; "Salom Aleikum Listeners Club", last Sun. of month, repeat Sat. (Bill Quinn, MOIRA NY)

USA Our tax dollars are paying for them, and we domestics can find some good listening on AFRTS and VOA. If you're so unfortunate as to be in a part of the country lacking a local National Public Radio affiliate, you can hear a couple of NPR's best programs on AFRTS: The National Town Meeting, Weds. 1430-1530 (or slightly later); and All Things Considered, daily at 2100 (winters 2200), for an hour weekdays, half an hour weekends (if sports coverage doesn't preempt). On VOA, we enjoy the exotic "Music Time in Africa", Sundays at 1635-1700 and 1935-2000 on 15235 and several others; "Forum", Fridays at 2130-2200 on 11935 currently focuses on feminism; and the Mon-Fri "VOA Magazine" at 1330-1400 on 9730, and 1930-2000 on 11935 carries lots of interesting features on the cultural plans. (gh)

DAILY DX PROGRAMS?! Radio Budapest often includes DX tips in the last 5 minutes, like 0325-0330 on 9833, 11910, in addition to the weekly 15-minute DX show. SCDX May 6 reports that Radio Ankara has "DX News" Mon-Fri at 2230-2235, in addition to "For the DXers" Saturdays at 2215-2235, on 9515 and 11880 (now 15165) (Fritz Mulder, Brummen, Holland). On the debit side Radio Norway's final DX show aired June 1 (SCDX June 10), but on the same day, Radio Ceylon inaugurated a new weekly DX program, Sundays at 0420-0430, compiled by veteran DXer Adrian Peterson. (R. Australia DX program, June 8). NA reception may be tough, but our best chance should be right now on 1425 kHz, while there's lots of polar sunshine. (gh) By the way, we're considering presenting a detailed schedule of DX programs, next month.

QSL REPORT The R. Tashkent v/s is Mrs. Nadira Babadjanova (says Charlie Brunner). Walt Sharp, Cinnaminson NJ (sounds like a tasteful place to live -gh) points out, as does RCI's Ian McFarland, that the present RCI QSL design will last thru 1975, but there may be more than one design in subsequent years. Ian maintains that the new no-data cards are valid QSLs, unlike the BEC's, because reports are checked and no QSL is sent without accuracy.

INDONESIAN SURVEY Number 2 has been published by the Australian Radio DX Club, covering over 130 MW and SW stations. Cost is 3 IRCs seamail, 5 IRCs airmail from ARDAG, Box 227, Box Hill, Victoria 3128, Australia. (R. Australia DXers Calling, June 8)

SUMMER TIME Home services from a number of mid-eastern countries should be signing on an hour earlier tnx to DST. All these countries went to GMT plus 3h on May 1: Egypt, Jordan, Lebanon, Syria. Turkey set the clock forward already on March 22 (until Nov. 2), and was joined by Cyprus (Turkish part only!) on April 13. Israel did likewise April 20 (until Aug. 30--when the English programs at 0400 and 1030 should revert to 0500 and 1130). Italy's on GMT plus 2 between June 1 and Sept. 28, as is Spain (which ought to be on GMT) between Apr. 13 and Oct. 4/5. GMT minus 4 is the time now observed by the Bahamas, since Apr. 27; Cuba, since Mar. 30; and Chile, since March 8 (from its summer time of GMT -3). Both Hong Kong and Taiwan leave the mainland behind by advancing to GMT plus 9h, between Apr. 20 and Oct. 18; and April 1 and the end of September, respectively. This is not a complete list; just those noticed by the (c) BEC MS.

FUTURE PLANS BOLIVIA Ten million pesos will be invested this year in expansion of the telegraph and radio broadcasting systems. Installation of radio stations in 878 Bolivian towns linked thru a COMSAT earth station, is envisaged. Stations in Oruro, Cochabamba and Santa Cruz will be completed in December 1975. IRAQ The Babylon station will activate 2x500 kw transmitters and 17 antenna arrays in 1976. UGANDA R. Uganda's external service is to begin in July with the first of two 250 kw xmtrs, in time for the OAU conference in Kampala. (c) BEC MS

SOMALIA R. Mogadishu is on new 9585 at \*1100-1700\* (BEC World Radio Club, June 18)

# Yugoslavs Tune Foreign News

By Dusko Doder

Washington Post Foreign Service

**BELGRADE** — In an unprecedented move, Yugoslavia has publicized results of a study of international broadcasting showing that "nearly every sixth Yugoslav occasionally or frequently still listens to foreign radio propaganda."

The study demonstrates dramatically that the listening public in Communist countries continues to seek information from outside sources, thus giving credence to claims by Western stations of wide audiences in those nations.

The results are even more stunning since the Yugoslav society is far more open than that of any other Communist country and since the Yugoslav news media offers relatively unvarnished news.

Moreover, the Yugoslav government places no restrictions on foreign travel by its citizens. Unlike the Soviet Union and other East European countries, Yugoslavia also allows free and widespread distribution of foreign newspapers and magazines.

Western diplomats familiar with the highly competitive field of international broadcasting suggested that the Yugoslav study has added more weight to their claim that such radio operations as the Voice of America or the British Broadcasting Corporation command vast audiences in Soviet bloc countries where governments continually suppress or tailor all news.

The study was conducted by the Center for Public Opinion Research and Mass Communication at the University of Ljubljana. The entire study has not been made public but an account of its results has been published by the daily newspaper Delo, which said that it had been conducted over a period of 18 months beginning in mid-1973.

Delo provided no details about the conduct of the study, which it said was required because of the "social importance" of international broadcasting.

The study and its results represent a "sufficiently convincing proof of the importance of radio propaganda in the modern world," Delo said, adding that "despite a decrease" in the number of Yugoslavs listening to foreign radio, "the Slovene public should be acquainted, at least briefly" with the researchers' conclusions.

Ljubljana researchers disregarded radio propaganda intended for Yugoslav minorities in neighboring countries and instead focused on special programs in Serbo-Croatian or other Yugoslav languages carried

on radio broadcasts from 14 countries: The United States, the Soviet Union, China, Britain, France, Italy, West Germany, Spain, Romania, Bulgaria, Greece, Turkey, Albania and the Vatican.

Among the stations, which broadcast special programs totaling about 1500 hours daily, the Voice of America and Moscow Radio were found to have the widest audience in Yugoslavia, Delo said. Radio Bucharest and Radio Tirana also had sizeable audiences but these are believed to consist mainly of ethnic Romanians or Albanians living in Yugoslavia.

Among the patterns that emerged from the study, according to the Delo account, were the following:

More than 50 per cent of those questioned said they listened to more than one radio station, suggesting that Yugoslavs "listen to foreign stations cumulatively so as to be able to compare the news from various sources and to create a more complete picture about the reported event."

More stations including the Voice of America and Moscow Radio, generally stress "a positive value system which means a relatively constructive approach" to world events.

China and Albania along with the BBC, Paris Radio and West Germany's Deutscher Welle were found to be more "pessimistically" oriented "either because of the lost illusions about their great world importance [Britain, France and West Germany] or because of their prior opposition to a Soviet-American rapprochement [China and Albania]."

The study found that Communist broadcasts were more or less "rigid." Among these, Peking and Tirana stressed "a black-white portrayal and evaluation of developments," while Moscow and Sofia criticized Yugoslavia by implication.

Western stations—particularly BBC, Paris Radio and the Voice of America—present views which "are more or less alien to the Yugoslav system" in a "more refined and covert fashion" by stressing evenhandedness.

All Western broadcasts try to "denigrate" Yugoslavia's system of self-government and its unaligned foreign policy, which are the two basic elements of the country's political orientation, Delo said.

"Their common characteristic is . . . their concealment of the propaganda importance of the broadcast . . . by references to other sources" such as commentaries in various newspapers or statements by prominent

(via Pitt McNeill  
June 19 Post)

# Short Waves (ADD SIX HOURS FOR GMT.)

By GLENN HAUSER, Denver Post Special Writer

WHEREVER you travel this summer, in the United States or abroad, you can keep listening to your favorite network news commentators. All it takes is a portable short-wave radio tuned to AFRTS Washington.

Here is where you find AFRTS on your dial. Remember to convert the times if you are outside the mountain zone. (Times in parentheses apply only during sports coverage and some special events.)

Most programs on the American Forces Radio and TV Service are scheduled more than once—but it is likely that one or more of the airings may be preempted for sports coverage, especially during weekday evenings or weekend afternoons. Exact starting times of sports broadcasts are announced daily at 4:35 and 10:35 a.m. and in 15-minute special broadcast ends during the first half of an hour, the commentaries are delayed until the second half of the hour.

The voice you expect may be on vacation, too, and AFRTS can vary these normal starting times. Unless otherwise specified, all are Monday through Friday times (with some repeats into Saturday morning).

Forrest Boyd (alt. Thar) — 9:15 a.m., 10:15 p.m.  
David Brinkley (alt. Thar) — 9:15 a.m., 10:15 p.m.  
Joyce Brothers — 12:10 p.m., 7:15 p.m., 12:10 a.m.  
John Chancellor (alt. Newman) — 8:00 p.m., 12:10 a.m.  
Red Collins — 4:10 p.m., 2:04 a.m.  
Walter Cronkite — 7:30 a.m., 3 a.m.  
Paul Harvey (Monday-Saturday) — 10:17 p.m., 11:15 a.m.  
Robert Kennedy — 11:05 a.m., 10:25 p.m., 4:24 a.m.  
Here Kessler (alt. Reynolds) — 3:10 p.m., 1:10 a.m.  
Douglas Kirk (alt. Brinkley) — 3:15 p.m., 3:10 a.m.  
Charles Kuralt — (Dateline America No. 1) — Sat., 4:30 a.m.; Sun., 1:04 a.m., 8:04 a.m., 1:04 a.m.  
Charles Kuralt — (Dateline America No. 2) — Sun., 4:30 a.m.; Mon., 10:05 p.m., Mon., 7:04 a.m.  
Edwin Newman — 8:00 p.m., 4:12 a.m.  
Edward P. Morgan — 6:11 p.m., 11:31 p.m., 3:20 a.m.  
Evelyn Newman (alt. Chancellor) — 9:05 p.m., 12:07 a.m.  
Charles O'Donnell — 7:10 a.m., 10:40 p.m., 12:07 a.m.  
Harry Reasoner — 4:06 p.m., 12:56 a.m., 5:14 a.m.  
Henry Reasoner (alt. Smith, from TV) — 5:14 p.m., 1:04 a.m.  
Frank Reynolds (alt. Kaskow) — 2:10 p.m., 1:05 a.m.  
R. K. Rife (alt. Smith) — 4:10 a.m., 2:05 p.m., 10:05 p.m., Sun., 7:02 a.m.  
E. S. Sanford (alt. Smith) — 5:12 p.m., 10:05 p.m., 10:12 p.m., 9:21 p.m.  
Howard Smith (alt. Reasoner, from TV) — 5:20 p.m., 1:04 a.m.  
Doug Thomas (alt. Boyd) — 9:15 a.m., 10:15 p.m., 7:09 p.m., 3:12 a.m.  
John T. Jones (alt. Newman, Evans, Jones, K. Jesus, Al. Stanton, Horras, Neil Pearce, Paul Schafelner) — 6:04 a.m., 10:47 p.m., 4:06 a.m.; Sat., 10:05 a.m., 5:12 p.m., 11:15 p.m., Sun., 9:15 a.m., 10:15 p.m.

Today in Business — 5:51 p.m., 3:21 a.m.  
Your Dollars Now — 2—Sun., 12:10 p.m., 4:10 p.m.; Sun., 2:10 a.m.  
Your Dollars Now — Sat., 12:10 p.m., 6:10 p.m.; Mon., 1:10 a.m.  
The Big News — Sat., 10:09 a.m., 7:10 p.m.; Mon., 12:10 a.m., 4:12 a.m.  
Black Eyed Peas — 8:05 p.m., 2:16 a.m.  
Soul Entertainment — 1:05 p.m., 11:15 p.m.  
Entertainment West — Sat., 12:04 p.m., 2:20 a.m.; Sun., 12:04 p.m., 2:20 a.m.  
Entertainment East — Sun., 12:04 p.m., 2:20 a.m.; Mon., 12:04 p.m., 2:20 a.m.  
Assignment — Hollywood — 7:20 a.m., 10:17 p.m.  
What's New of the Movies — Sat., 4:10 p.m.; Sun., 1:10 p.m., 10:17 a.m., 4:10 p.m.; Mon., 10:17 a.m., 10:15 p.m.  
Weekend Weather — Sat., 9:05 a.m.; 1:10 p.m.; Sun., 1:10 p.m., 10:15 p.m.; Mon., 4:55 a.m.  
Your Earth — Sat., 7:10 p.m.; Sun., 4:56 a.m., 10:21 a.m., 10:25 p.m.; Mon., 4:55 a.m.  
The Law and You — Sat., 7:05 p.m.; Sun., 3:36 a.m., 10:16 a.m., 10:21 p.m.; Mon., 4:54 a.m.  
One View of the Press — Sun., 10:25 a.m., 10:15 p.m., 10:15 p.m., 10:15 p.m.  
Letters to CBS — Sun., 7:05 p.m.; Mon., 12:04 p.m., 4:09 a.m., 7:10 a.m.; Tue., 10:04 p.m., 4:09 a.m.; 4:05 p.m., 10:04 p.m.; Wed., 10:04 p.m., 4:05 p.m.; Mon., 4:04 a.m.  
Abe Repp — Coding — 10:14 a.m., 10:20 p.m., 10:14 a.m., 10:20 p.m.  
News — 4:10 a.m., 10:10 p.m., 4:10 p.m., 10:10 p.m.  
News — 12:31 a.m., Sat., 7:10 p.m., 4:10 p.m., 12:31 a.m., Sat., 7:10 p.m., 4:10 p.m., 12:31 a.m.  
First Live Report — 4:04 a.m.  
Washington Report — 5:07 a.m.

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Charles Kuralt — (Dateline America No. 2) — Sun., 4:30 a.m.; Mon., 10:05 p.m., Mon., 7:04 a.m.  
Edwin Newman — 8:00 p.m., 4:12 a.m.  
Edward P. Morgan — 6:11 p.m., 11:31 p.m., 3:20 a.m.  
Evelyn Newman (alt. Chancellor) — 9:05 p.m., 12:07 a.m.  
Charles O'Donnell — 7:10 a.m., 10:40 p.m., 12:07 a.m.  
Harry Reasoner — 4:06 p.m., 12:56 a.m., 5:14 a.m.  
Henry Reasoner (alt. Smith, from TV) — 5:14 p.m., 1:04 a.m.  
Frank Reynolds (alt. Kaskow) — 2:10 p.m., 1:05 a.m.  
R. K. Rife (alt. Smith) — 4:10 a.m., 2:05 p.m., 10:05 p.m., Sun., 7:02 a.m.  
E. S. Sanford (alt. Smith) — 5:12 p.m., 10:05 p.m., 10:12 p.m., 9:21 p.m.  
Howard Smith (alt. Reasoner, from TV) — 5:20 p.m., 1:04 a.m.  
Doug Thomas (alt. Boyd) — 9:15 a.m., 10:15 p.m., 7:09 p.m., 3:12 a.m.  
John T. Jones (alt. Newman, Evans, Jones, K. Jesus, Al. Stanton, Horras, Neil Pearce, Paul Schafelner) — 6:04 a.m., 10:47 p.m., 4:06 a.m.; Sat., 10:05 a.m., 5:12 p.m., 11:15 p.m., Sun., 9:15 a.m., 10:15 p.m.

Today in Business — 5:51 p.m., 3:21 a.m.  
Your Dollars Now — 2—Sun., 12:10 p.m., 4:10 p.m.; Sun., 2:10 a.m.  
Your Dollars Now — Sat., 12:10 p.m., 6:10 p.m.; Mon., 1:10 a.m.  
The Big News — Sat., 10:09 a.m., 7:10 p.m.; Mon., 12:10 a.m., 4:12 a.m.  
Black Eyed Peas — 8:05 p.m., 2:16 a.m.  
Soul Entertainment — 1:05 p.m., 11:15 p.m.  
Entertainment West — Sat., 12:04 p.m., 2:20 a.m.; Sun., 12:04 p.m., 2:20 a.m.  
Entertainment East — Sun., 12:04 p.m., 2:20 a.m.; Mon., 12:04 p.m., 2:20 a.m.  
Assignment — Hollywood — 7:20 a.m., 10:17 p.m.  
What's New of the Movies — Sat., 4:10 p.m.; Sun., 1:10 p.m., 10:17 a.m., 4:10 p.m.; Mon., 10:17 a.m., 10:15 p.m.  
Weekend Weather — Sat., 9:05 a.m.; 1:10 p.m.; Sun., 1:10 p.m., 10:15 p.m.; Mon., 4:55 a.m.  
Your Earth — Sat., 7:10 p.m.; Sun., 4:56 a.m., 10:21 a.m., 10:25 p.m.; Mon., 4:55 a.m.  
The Law and You — Sat., 7:05 p.m.; Sun., 3:36 a.m., 10:16 a.m., 10:21 p.m.; Mon., 4:54 a.m.  
One View of the Press — Sun., 10:25 a.m., 10:15 p.m., 10:15 p.m., 10:15 p.m.  
Letters to CBS — Sun., 7:05 p.m.; Mon., 12:04 p.m., 4:09 a.m., 7:10 a.m.; Tue., 10:04 p.m., 4:09 a.m.; 4:05 p.m., 10:04 p.m.; Wed., 10:04 p.m., 4:05 p.m.; Mon., 4:04 a.m.  
Abe Repp — Coding — 10:14 a.m., 10:20 p.m., 10:14 a.m., 10:20 p.m.  
News — 4:10 a.m., 10:10 p.m., 4:10 p.m., 10:10 p.m.  
News — 12:31 a.m., Sat., 7:10 p.m., 4:10 p.m., 12:31 a.m., Sat., 7:10 p.m., 4:10 p.m., 12:31 a.m.  
First Live Report — 4:04 a.m.  
Washington Report — 5:07 a.m.

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The voice you expect may be on vacation, too, and AFRTS can vary these normal starting times. Unless otherwise specified, all are Monday through Friday times (with some repeats into Saturday morning).

Forrest Boyd (alt. Thar) — 9:15 a.m., 10:15 p.m.  
David Brinkley (alt. Thar) — 9:15 a.m., 10:15 p.m.  
Joyce Brothers — 12:10 p.m., 7:15 p.m., 12:10 a.m.  
John Chancellor (alt. Newman) — 8:00 p.m., 12:10 a.m.  
Red Collins — 4:10 p.m., 2:04 a.m.  
Walter Cronkite — 7:30 a.m., 3 a.m.  
Paul Harvey (Monday-Saturday) — 10:17 p.m., 11:15 a.m.  
Robert Kennedy — 11:05 a.m., 10:25 p.m., 4:24 a.m.  
Here Kessler (alt. Reynolds) — 3:10 p.m., 1:10 a.m.  
Douglas Kirk (alt. Brinkley) — 3:15 p.m., 3:10 a.m.  
Charles Kuralt — (Dateline America No. 1) — Sat., 4:30 a.m.; Sun., 1:04 a.m., 8:04 a.m., 1:04 a.m.  
Charles Kuralt — (Dateline America No. 2) — Sun., 4:30 a.m.; Mon., 10:05 p.m., Mon., 7:04 a.m.  
Edwin Newman — 8:00 p.m., 4:12 a.m.  
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Here are some other network news features:  
Inflation Watch — 11:10 p.m., 9:23 a.m.  
Wall Street Report — 4:19 p.m., 2:15 a.m.

politicians, the paper said. It described Radio Bucharest as "most akin" to the Yugoslav mass media and said the Greek and Turkish radio broadcasts were primarily interested in explaining their respective internal policies to Yugoslav audiences.

And That's Not All: AFRTS has many other programs designed for military members only. And be prepared for a barrage of military-oriented announcements (instead of commercials) at all times.

NASWA member David Walcutt recently spent some time in Europe, and sends us these comments: The one thing that first struck me about European radio is that it is holistic. What does this mean? First, distances are short by NA standards. For DXing, and the reception of programs across cultural boundaries, the effect is that such reception is routine, casual and very easy. France is large by European standards, yet 20 Francs will fit into the area of the continental US. Thus, it is an easy matter to receive transmissions from beyond the borders. Commercially in France this fact is taken as a loophole thru the tight governmental regulation of all broadcasting, via stations in the surrounding city-states, as well as W. Germany. Second, holistic because there is a continuity between long wave, medium wave and short wave. Both LW and SW are the long distance modes. It is why the commercial stations use long wave to reach France, i.e. Europa I (Germany), R. Luxembourg, R. Monte Carlo. With respect to SW, the relation between distance and frequency directly relates to this continuity. This is because only low SW bands are feasible, for intra-European broadcasts, e.g. SEC 3985, 6165; BBC 3952, 5975, 9410; France Inter 6175; R. Monte Carlo 6135 and 7135; R. Luxemburg 6090.... 19a, for example, would be out of the question because of the high angle of radiation required and the high intensity of ionization this implies. The significance of the use of low SW frequencies is that practically speaking no electronics are required to 'throw in' a SW band on a home receiver. And, on these frequencies day-to-day local quality reception is possible of foreign stations. Many stations run these low band SW frequencies in parallel with MW and LW, which I think indicates the local character of SW. Thus, SW does not represent a drastic break from local MW transmissions. Thirdly, MW itself is used for international broadcasting. BBC, R. Sweden, ORF, not to mention the eastern Europeans, e.g. R. Prague. Coming from the US, it takes a while to get accustomed to hearing international broadcasts on these MW frequencies.

With David's cogent points in mind, I am going to publish some MW/LW notes. I do not propose to broaden NASWA's accepted SWBC-only specialty, nor do I intend to publish MW information from any source other than the BBC MS. The reason: NASWA has paid for the rights to reprint this material, but none of the major MW clubs (IRCA, NRC, NNRC) does so. This info is being published on a space-available basis only, not at the expense of SWBC coverage, and normally would do nothing but fill out a page. This time, we have a backlog of several months to cover. If you remain totally disinterested in MW, why not pass this on to your MW/LW DXing acquaintances? We hate to see this go to waste, but if enough complain, we'll not try this again.... all items are (c) BBC MS:

ARGENTINA R. Nacional, Córdoba, LRA-7 (750) doubled power to 100kw on May 14.  
BANGLADESH The 10 kw Khulna xtr of R. Bangladesh was to go into use 'soon' after March 19.  
BRAZIL From the Minister of Communications we have these future plans for MW broadcasting: (apparently, not only SW, but MW channels are being shuffled) Frequency changes and power increases, a more rational distribution, more than 379 new stations, for a total of 1170 in 861 cities. Max. power of 200 kw, min. 100 kw for Braz.-exclusive channels; 800 and 900 khz to be reserved exclusively for Fed. Govt. stations; new stations in the Amazon and border areas; increase in daytime power for better groundwave; increase in nighttime power where feasible; elimination of directional antennas wherever possible. The gov't's "Radiobras" will put in stations where the private sector has no stimulus: Amazon, border, central/west. New authorizations: R. São Miguel, Uruguiana; R. Progresso, Ijuí RGS; Soc. R. Ponta Porã.  
CZECHOSLOVAKIA The Uherske Hradiste xtr on 272 khz is being rebuilt; since April 6, xtrs at Moravske Budejovice and Olomouc use the channel instead. 1232 khz is now 24 hours.  
DOMINICAN REP. R. Clarif'n's 0930-1200, 0200-0230, 0400-0410 newcasts are relayed by R. Azul, R. Juventud, R. Puerto Plata, R. Montecristi and R. Tamboril, per announcements.  
FRANCE Mae Baudrier, Dir-Gen of R. France says the MW nets are being improved, and a more powerful LW xtr at Allouis for France-Inter is planned.  
HONDURAS "LV de Honduras", since April 29 has a new relay at Siguatepeque, 680 khz.  
INDIA AIR says a high-power station has been set up at Najibabad in U.P. to cover the hills of Garhwal and Kamaun; and xtr power at Alwar, Srinagar and Shillong is being increased. A high-power station for the capital of Arunachal Pradesh has also been approved. As of May 1 eight more AIR stations carry commercials and "Vividh Bharati": Bhopal, Indore, Cuttack, Jaipur, Jodhpur, Patna, Ranchi and Trivandrum.  
INDONESIA RRI is beginning this year to instal 52 new MW stations. The transmitters will take the place of about 73 of the 130 xtrs scheduled for replacement (most of these must be SW! gh). Japanese aid provides for a 300 kw MW station in Jakarta, and 100 kw MW stations in Medan and Surabaya.  
IRAN The 620 khz Bandar-e Abbas station will raise power from 10 to 100 kw this year.  
IRAQ On April 8 a 2000 kw MW xtr at Babylon was inaugurated on 1038 khz, carrying Baghdad's main Arabic program; night coverage is beamed toward North Africa.  
KOREA, NORTH South Korean Radio says NK increased the Sariwon xtr from 150 kw to 1500 kw early this year, (930 khz per FBIS); seven other stations, including Kaesong, Haeju have raised power from 50-100 kw to 100-500 kw, with high directivity; hours have risen from 19 to 22 hours a day, and a 1400 kw MW xtr is being imported from Japan.  
KOREA, SOUTH The NK power is blotting out local reception, esp. in the west coast islands of SK. SK responds to this deliberate QRM by raising power at nine locations.  
LIBYA Tripoli Radio says Egypt is deliberately QRMing Libyan Radio news and commentaries.  
NETHERLANDS HS 3rd Program is now 24h on 674 khz, ex-1250 khz.  
NIGERIA A new 100 kw NBC station is being built in the North Central State.  
POLAND A new xtr at Kossalin on 1205 khz has gone into service. A 300m-high radio mast for the new 1500 kw MW xtr at Katowice is under construction for Europe's strongest MWer.  
YUGOSLAVIA Pristina Radio, 1412 khz, 100kw wants Radio Maribor 20kw, off its channel.

MAN-MADE NOISE

by Charles A. Wootten

The 1st time we discussed man-made noise, we saw some of the sources and very briefly discussed a means of how to locate it. Now, let's look at some ways to overcome radio noise.

Radio noise may be bottled up within a well-shielded source by using capacitors or filters across all leads entering or leaving the source. Typical bypass capacitors, even with very short leads, are effective up to only a few megahertz, as they become more inductive and less effective above their self-resonant frequencies. For example, a capacitance of 0.05 microfarad with an effective lead length of 2 inches resonates at about 3 mHz, and becomes considerably less effective than an ideal capacitor at frequencies of 6 mHz and up.

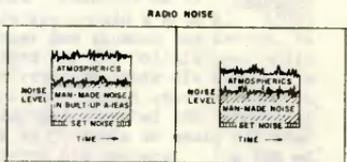
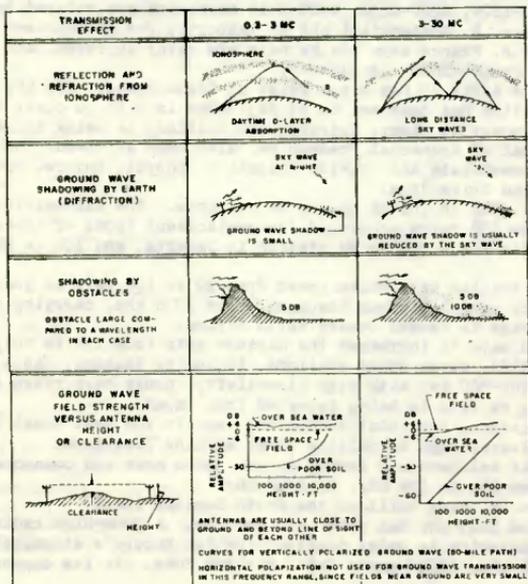
When installing intrahouse cabling in the receiving station, it is advisable to separate conductors carrying rf signals from all other conductors. It is also advisable to separate, in so far as possible, all conductors carrying audio signals from those carrying keyed dc signals - for you hams amongst us.

The ground connection of a radio receiver is often a means of bringing noise into the receiver. The best remedy is to provide short, direct, independent connections from the receiver and from the noise source to separate low-impedance grounds. Keep all receiver ground leads physically and electrically separated from the ground leads of any noise source.

Good bonding practices and maintenance are essential to obtain low-impedance ground connections between equipment or suppressors and vehicles or frames and thereby prevent generation or spread of radio noise. Connections should be direct, and contacting surfaces clean, bright, and firmly held together. Where parts must move, they should be bonded to the stationary frame with flexible straps of tinned copper braid. Such straps should be kept as short as possible to reduce their inductance.

Good electrostatic shielding of a receiver can be insured by enclosing it in a high-conductivity metal shield, such as solid copper or aluminum shielding or copper screening. All wire entering or leaving the equipment (except the antenna leads) should be properly bypassed or filtered. Necessary holes or cracks in the shielding should be kept as small as possible. Shielding can be improved by bonding the joints at closely spaced points. The lower the frequency, the thicker must be the shield.

Next: Other Types of Radio Noise - Atmospheric Noise, etc.



General radio propagation and noise characteristics.

73's  
 Charly

ENGLISH BROADCASTS ON SHORTWAVE

audible in North America

Compiled by Glenn Hauser; published by the North American Shortwave Association

**Introduction.** We hope the information contained in these four pages will help you to tune in more easily English broadcasts from the countries of your choice. It is the result of a great many hours of research and monitoring. Whenever possible we have monitored official schedules and made changes where necessary to reflect the actual frequency usage, which often contradicts, for a variety of reasons, on-air announcements and schedules mailed to listeners. Nevertheless, some of the information here inevitably is out of date, though we have been able to include some changes up to the last week of June 1975. Members of NASWA will receive, in coming months, continuing updates in "FRENDEX", the NASWA magazine. Dues per year for first-class mailing in North America are \$12, to NASWA, Box 13, Liberty, IN 47353. This is not simply a list of broadcasts to North America, but of broadcasts which may be heard here, given favorable conditions, whatever their intended targets, based on the compiler's monitoring experience. We could have added several African countries in the 2000-2300 GMT period if we were dealing with winter conditions. Some lower-frequency receptions depend on varying sunrise and sunset times, in which case we put "~" next to the times. English broadcasts are only a fraction of the total SWBC output, and the serious listener can benefit from programs in other languages. Similarly, roughly 15 more countries can be heard in NA, in English, but only on mediumwave. All times are GMT, frequencies kHz; all schedules daily, u.o.s. Sources consulted include FRENDEX, NU, SPEEDX, TES, TDXX, ASWLC, SCDX, BBC MS (copyrighted, used by permission), and as a last resort, WRTWH 75. Information from mass circulation magazines and books was scrupulously avoided. Also useful were DX programs of R. Australia, R. Japan, HCJB and RCI. Contributions from these individuals were especially helpful: Richard N. Allen, Bill Davis, Dan Ferguson, Mac Leonhardt, Al Niblack.

A--alternate; v--variable	9570 0645-0915	BELGIUM RTB/BRT
<u>AFGHANISTAN</u> Radio Kabul	9580 1115-1245	2255-2315 9755 11855
1130-1200 15195	9770 1000-1730	2330-2400 9730 6080 (Sunday;
1400-1430 4775	11740 0730-0800, 1000-1230	multilingual)
	15270 0645-0915	0040-0100 9730 6080
<u>ALBANIA</u> Radio Tirana	11810 1100-1300, 1400-1500	
0000-0030 7065 9750/9757	11810 1530-1730 (11870A)	<u>BELIZE</u> Radio Belize
0130-0200 6200 7300	11840 1800-2200	~0400-0510 3300
0230-0300 6200 7300	11930 2100-2315	
0330-0400 6200 7300	15140 0030-0600	<u>BRAZIL</u> Rádio Nacional-Brasília
Radio Peking relay	15160 2100-0700	2100-2200 15245 (11780A 9605A)
0100-0155 9780 7120v	15240 2245-0730	
0300-0355 9780 7120v	15290 0300-0330 Fri	<u>BRUNET</u> Radio Brunei
	17820) 0400-0530	1200-1435 7215
<u>ANGOLA</u> Emissora Oficial	15320)	
1130-1145)	17795) 0100-0300	<u>BULGARIA</u> Radio Sofia
1435-1515) 11875 9535 (week-	15355 2300-1000 (exc. Sat/Sun	0000-0100) 9700
days)	0330-0400)	0400-0430) 9700
	(Sat -0330)	Radio Moscow relay
<u>ANTARCTICA</u> APAN	17715 0100-0400	0130-0400 9700
~0700-1100- 6012 7050A	17740 0100-0600	
	17870 0130-0730	<u>BURMA</u> Burma Broadcasting Serv
		1430-1600 5040
<u>ARGENTINA</u> RAE	ABC Domestic SW Service	
2300-2350 11710 (Mon-Fri)	Adelaide (via R Australia)	
0300-0400) 9690 (Tues-Sat)	11810 0000-0600	<u>CAMEROON</u> Radio Yaoundé
0600-0700)	Brisbane	0530-0600 (Sun -0645) 4972.5
	4920 ~0700-1402	
<u>ASCENSION</u> BBC World Service	9660 ~0600-1402	<u>CANADA</u> R Canada International
(AA--includes African alter-	Melbourne	0100-0157 11940 9650 6085
native programmes)	6150 0830-1402	0400-0600 9655 6135
6005 0400-0730 AA	9680 0830-1502	0620-0640)
6055 2245-0330	15230 2230-0815	0700-0720) 11915 9605 6145
7105 0600-0630	Perth	0740-0800)
7260 0500-0700 AA	6140)	0800-0900 9625 5970
9580 2000-0430	9610) 1000-1602	1115-1215 15175 11825 9655 5970
9600 0600-0815 AA (except:	15425 2300-0941	1800-1857 17820 15325 (11855A)
0630-0700; Sun -0915)	Sydney	2102-2159 17820 15325 11855
11770 1600-1745 AA	6090 ~0630-1402	
11820 1745-2115		CBC Northern Service
11860 0730-0915 AA (Sun 0915-	<u>AUSTRIA</u> ÖRF	0900-1028 5960 9625 (tests)
1030-1130 1030 also)	0130-0200 6155 9770	1028-2400 11720 9625
15400 0730-0915 AA (Sun 0915-	0330-0400 6155 9770	0000-0507 5960 9625
1030-1745 AA 1030 also)	0430-0500 5980 (6110A)	(also in French, Inuit, Cree)
17840 1430-1615	2000-2015 11855 15345 (Sun)	CBC Armed Forces Service
	0915-0930 9770 7170 (Sun)	1630-1645 17820 15325
<u>AUSTRALIA</u> Radio Australia		2159-2230 15325 11855
5995 0700-1400	<u>BANGLADESH</u> Radio Bangladesh	
6005 0800-1400	0445-0515 15405	(see also Great Britain)
9540 1800-2100	1815-1915 9633 9488	

**BEC World Service relay**  
 1100-1130 15365 5990 (Sun)  
 1100-1215 15365 5990 (Mon-Sat)  
 1600-1745 15365 (Sat)  
 1600-1709 15365 (Sun-Fri)  
 2300-0030 9510  
 2300-0430 6175

**CFRX, Toronto**  
 6070 24 hours

**CFCX, Montreal**  
 6005 24 hours

**CHNX, Halifax**  
 6130 24 hours

**CKZN, St. John's**  
 6160 0930-0500

**CKZU, Vancouver**  
 6160 1400(Sun 1500)-0905

**CHAD** Rdif. Nat. Tchadienne  
 4904, 5 0600 (unconfirmed)

**CHILE** La Voz de Chile  
 1050-1110)  
 1210-1230) 15150 11810  
 1330-1350) 9566.1 6195  
 2250-2310)  
 0110-0130) (times vary)  
 0210-0230)  
 0310-0330)

**CHINA** Radio Peking  
 (see also Albania)  
 0000-0055 17675 15060 11945  
 8300 6810  
 0100-0155 17855 15060 11945  
 11675 11515 11455  
 11445 11375 11305  
 9940 8450-SSB  
 8240 5545 17675  
 0200-0255 17855 17490-SSB  
 15060 11675 11455  
 10865 9940 8240  
 0300-0355 17855 17735 17530  
 15385 15060 11515  
 11630-SSB 11445  
 11375 11305 10865  
 8240  
 0400-0455 17855 17735 17530  
 15385 15060 10865  
 11630-SSB 8240  
 1200-1255 11685 5250 4130  
 Voice of the Malayan Revolution  
 0930-0955 11830 15789  
 1445-1520 11830 15789

**COLOMBIA** Radio Nacional  
 1130- 4955 9635 (lessons)

**COSTA RICA** TIFC  
 0300-0435 9645 6175

**Radio Casino**  
 5954 2300-2400, 0430-0600

**CUBA** Radio Habana Cuba  
 2010-2140 11855  
 2050-2150 17750 11960  
 0100-0450 11930  
 0100-0600 11725  
 0330-0600 11760  
 0630-0800 9525v

**CYPRUS** BEC World Service  
 (AA-includes African alter-  
 native programmes)

7250) 0300-0345 AA  
 9725)  
 11955 0145-0430  
 15105 1500-1530 AA  
 15285 0300-0330  
 15420 0400-0730  
 15420 0900-1745 AA  
 17885 0900-1615

**CZECHOSLOVAKIA** Radio Prague  
 0030-0055 6055 9740  
 0100-0157) 11990 9740 9630  
 0300-0357) 9540 7345 5930  
 1430-1457) 21670 17840 15110  
 1530-1625) 11990 9605  
 1730-1825 21670 17840 11990  
 9605

**DAHOMY** LV de la Révolution  
 9565 2100- (unconfirmed tests)

**DOMINICAN REPUBLIC**  
 Radio-Televisión Dominicana  
 2145-2200 9505 (time varies)

**ECUADOR** HCJB  
 0100-0500 11910 9560 5970  
 0500(Wed Fri Sun 0515)-0700  
 11915 9560 5970  
 0700-1030 11915  
 0700-1045 9745  
 0715-0830 9760  
 0715-1045 6130  
 1230-1630 15115 (Sun -1600)  
 1215-1630 11745 (Sun -1600)  
 1900-2030 17715 15300

**EGYPT** Radio Cairo  
 2145-2300 9805  
 0200-0330 9475

**ETHIOPIA** R Voice of the Gospel  
 0400-0425 7165  
 0530-0610 11800  
 1810-1825 9705  
 1945-2030 11830

**FINLAND** Radio Finland  
 1400-1430)  
 1600-1630)  
 1800-1830) 15185  
 2030-2100)  
 2300-2330)

**FRANCE** R France International  
 1702-1758 15200 15210 15300  
 15360 15425 17720  
 17800 17820 21620  
 (freqs. subject to change)

**GAMBIA** Radio Gambia  
 4820 0630(exc. Sun)-0715-

**GERMANY, EAST**  
 Radio Berlin International  
 0100-0145)  
 0230-0315) 9730  
 1830-1915)  
 0330-0415 11890 11840 9560

**GERMANY, WEST** Deutsche Welle  
 (see also Malta, Rwanda)  
 0130-0150 6010 6040 9565 9690  
 0530-0550 6075 6185 9545  
 0600-0630 9615 11905  
 2100-2200 9765  
 0120-0220 6065 7210 11945  
 0430-0515 7150 9565 9765

**GHANA** Radio Ghana  
 1445-1530 21545 21719  
 2000-2100 11850  
 2045-2215 9545  
 0600- 4915 6130

**GREAT BRITAIN**  
 BEC World Service  
 (see also Ascension, Canada,  
 Cyprus, Malaysia, USA)  
 5975 2300-0430, 0500-0630  
 7325 2245-0330  
 9410 0300-0730, 0900-2430  
 9580 0430-0730  
 9640 0545-0915  
 9915 2245-0430  
 11750 1700-0730  
 11780 2115-2430  
 11955 0545-0915  
 12095 0600-0730, 0900-2115  
 15070 0500-0230  
 15260 1500-1515, 2000-2330  
 17740 2000-2115  
 17790 1300-1615

**R Canada** International relay  
 0620-0640)  
 0700-0720) 11720 9685 7155  
 0740-0800)

**CEC** Armed Forces Service  
 1200-1215 11720 9560

**GRENADA** Radio Grenada  
 1545-2430 5015  
 1545-1930 9550

**GUATEMALA** TGNA, Radio Cultural  
 3300) 0300-0430 Mon-Sat  
 5955) 0045-0400 Sun

**GUYANA** GBS  
 3290) 0812-0350 (Wed, Fri,  
 5950A) Sat -0450)

**HAITI** Radio 4VEH  
 6120) 0000-0100; 1100-1450  
 9770) (Sun -1400); Sun 1700-  
 11835) 2100

**HONDURAS** La Voz Evangélica  
 0300-0430 4820

**HUNGARY** Radio Budapest  
 0200-0230 exc Mon) 11910 9833  
 0300-0330 ) 9585 7250  
 0400-0415 Wed Sat) 6000

**INDIA** All India Radio  
 1330-1500 11810 15345  
 1745-1945 15080 11620 9575  
 9525  
 1945-2230 11620 9912 9525  
 2245-0115 15280 11825 11770  
 9575 9520 7215

**INDONESIA** Voice of Indonesia  
 0900-0930 6045 11790  
 1100-1200 11790  
 2330-2400 11790

**IRI, Yogyakarta**  
 1130-1145 7110 5047

**IRAN** Voice of Iran  
 2000-2030 9022

**IRAQ** R Baghdad International  
 1930-2020 9757v (nom. 9745)

ISRAEL IKA  
0400-0615  
9009 7395 5900  
others: 15405 15240  
15125 11700  
1030-1100 to NA: 15485 15125  
12025 others:  
17688 15465 15405  
15240 15100 11959.4  
2000-2055 to NA: 15485 12025  
9815 others: 15405  
15240 11959.4 11700  
9009 7395

ITALY RAI  
0100-0120 11810 9575

IVORY COAST Radio Ivory Coast  
1845-2000 11920

JAPAN Radio Japan  
2345-2445 15270 15300 15430A  
0130-0230 15195 15420 17725  
17825

1115-1145 11875 9675  
1630-1700 11705 9670  
1830-1900 11960 9605

Radio Japan General Service  
5990 1000-1315 (15 min. on  
the hour exc. 1000-1030)  
9505 0600-0915 (15 min. on the  
1400-1815) hour except  
1400-1430)

15105 1900-0515 (15 min. on  
the hour exc. 2300-2330)  
(also 2 ea. other duals: 9585  
11815 15195 15310 17880)

Nihon Shortwave Broadcasting  
1530-1615 6055 9595 exc. Sun

Far East Network  
6155 3910 24 hours

JORDAN Radio Jordan  
1600-1730 9560

KOREA, NORTH Korean Central  
Broadcasting Station  
0600-0753 9820 12075v  
1000-1050 9340 11535  
1200-1350 9370 15630  
1800-1950 9977  
2300-2345 9410 11535

KOREA, SOUTH Radio Korea  
0500-0530  
0630-0700  
0900-0930 } 9640 15335  
1100-1130  
1430-1500  
1900-1930

KUWAIT Radio Kuwait  
0500-0800 15345  
1700-2000 11940 9555

LEBANON Radio Lebanon  
0230-0300 9525 9675A  
1830-1900 11830

LIBERIA ELWA  
4770 0600-2300 weekdays  
0630-2245 Sundays  
11950 0630-0700 weekdays  
0630-0730 Saturdays  
0645-0800  
1345-1615 Sundays  
1915-1945, 2015-2100

MALAGASY Radio Madagascar  
1500-1600 17730

Radio Nederland relay  
1400-1520 11740  
2000-2120 11730A 9585

MALAYSIA, WEST Radio Malaysia  
0930-1630 4985

Voice of Malaysia  
0625-0855 11900  
(see also Sabah)

BBC World Service  
9740 0900-1830 (some days  
carries cricket)  
11750 0900-1615  
15310 0900-1830  
17880 0000-0030

MALTA Deutsche Welle relay  
0130-0150 6100 9745 11865

MONACO Trans World Radio  
(transmitters in France)  
7105 0625-0750 (Sun -0800)  
(Sat -0915)

MONGOLIA Radio Ulan Bator  
2200-2230 11810 11860 (week-  
1220-1250 8892 17785 days)

MOZAMBIQUE LM Radio  
0300-0445 3265 4923.5  
(mixed with Afrikaans)  
(subject to Independence)

NETHERLANDS Radio Nederland  
(see also Malagasy, Nether-  
lands Antilles)  
1400-1520 21480 17810 15415  
1830-1950 11730 17700  
2130-2250 11730 9715 exc. Sun

NETHERLANDS ANTILLES  
Radio Nederland, Bonaire  
0630-0750 11730  
0800-0920 9715  
1645-1651 11820 15190 Mon-Fri  
2335-2410 800 Mon-Fri  
2300-2410 800 Sat (multi-  
lingual)

0200-0320 6165  
0500-0620 6165 9715  
Trans World Radio  
0030-0130 11815  
1105-1235 11815 Mon-Sat  
1105-1222 11815  
1230-1430 15255) Sun

NEW ZEALAND Radio New Zealand  
1700-1945 9755  
2000-2400 11900  
2000-0545 15110  
0000-0545 15280  
0600-0845 6080 9540  
0900-1145 6080 9520

NIGERIA Voice of Nigeria  
0600-0735 7275

NORWAY Radio Norway  
1400-1430 17800 Sun  
1600-1630 17800 Sun

PAKISTAN Radio Pakistan  
0230-0245 # 17830 15205  
0340-0345 17830 15323.5v 11885  
0430-0445 # 17830 15323.5 11885  
0530-0540 17830 17750 15520  
0700-0715 15323.5v 15115 9460  
0803-0806  
0930-0935 15323.5v 11855  
1100-1115 # 17665 15110  
1300-1310 17820 15520  
1350-1405 Sat 9460  
1530-1545 # 17820 15520  
1815-1820 11672 9460  
2100-2145 9460 7085  
0000-0010 15205 11885 9460

PAKISTAN Radio Pakistan  
(# - slow news)  
0230-0245 # 17830 15205  
0340-0345 17830 15323.5v 11885  
0430-0445 # 17830 15323.5 11885  
0530-0540 17830 17750 15520  
0700-0715 15323.5v 15115 9460  
0803-0806  
0930-0935 15323.5v 11855  
1100-1115 # 17665 15110  
1300-1310 17820 15520  
1350-1405 Sat 9460  
1530-1545 # 17820 15520  
1815-1820 11672 9460  
2100-2145 9460 7085  
0000-0010 15205 11885 9460

PAPUA NEW GUINEA NBC  
~0700-1400 4890  
~0530-0800 9520

PERU Radio del Pacifico  
4975 0200-0300 weekdays  
4975 0200-0215 Sundays

PHILIPPINES V of the Philippines  
9579 0700-0954, 1400-1654

Far East Broadcasting Company  
2330-2400 15440 15385A  
0000-0100 17810  
0100-0600 (Sun -0800) 15440  
0800-0900 9505  
0800-1000 11890 11920  
1100-1130 11855  
1245-1630 15440  
1400-1630 15300

POLAND Polish Radio  
0200-0230 and  
0300-0335 15120 11840 11815  
9675 7270 6135 6095  
0630-0700 7285 9540 9675  
1830-1900) 9540  
2030-2100) 9540  
2230-2300 9540 7285 6135 5995

PORTUGAL Radio Portugal  
0230-0300 6025 11935 11840A  
0430-0500 6025 11935  
1400-1430) 17895 21495  
1600-1630) 17895 21495  
1800-1830 11875 21495  
2030-2100 9740 6025  
Radio Trans-Europe  
2030-2100 9670 Mon Thu Fri Sat  
2100-2115 9670 Sun

ROMANIA Radio Bucharest  
0130-0230 11940 11775 9690  
0400-0430) 9690 9570 6190 5990

RWANDA Deutsche Welle relay  
0430-0515 7225  
1200-1245 15410

SABAH (MALAYSIA)  
Radio Malaysia Sabah  
4970 1300 (1100 Sat Sun) -1500  
Voice of Malaysia  
0625-0855 15275

**SARAWAK (MALAYSIA)**  
Radio Malaysia Sarawak  
1100-1230) 4950 9605  
1400-1600)

**SAUDI ARABIA** BSKSA  
11855 1000-1300, 1700-2000

**SEYCHELLES** FEBA  
(spring schedule)  
0630(Sat Sun 0600)-0830 15160  
11915  
1530-1645 15325 11810  
1745-1800 (Tue Wed) 11865 11715

**SIERRA LEONE** SLBS  
0600-0730)  
~2400) 3316 5980

**SINGAPORE** Radio Singapore  
2230-1630 5010 5052 11940

**SOLOMON ISLANDS** SIIBS  
0630-1115 5020

**SOUTH AFRICA** Radio RSA  
0300-0425 7270 5980 4875 3995  
0611-0705 17780 15220 11900  
1000-1045 15220 11970 Sun  
1100-1158 21535 15220 11900  
1300-1550 21535 15220  
1300-1456 11900  
1600-1650 15175 11900 7270  
2100-2150 11900 7270 5980 4875  
2230-2320 11900 9695 9525 5980

**SABC home service**  
3285 0358- Mon-Fri)  
0430- Sat } -0520  
0500- Sun }

**SABC Springbok Radio and All-Night Service (mixed Afrikaans)**  
3250-2200-0522

**SPAIN** Spanish National Radio  
0100-0145)  
0200-0245) 6065 11925  
0300-0345)

**SRI LANKA** SLBC  
0025-0430 15425 11725 9720  
1030-1130 17850 15425 11835  
1230-1730 15425 11725 7190  
1900-2000 15120 11800 9720

**SWAZILAND** Swazi Music Radio  
0400-0500 4980

**SWEDEN** Radio Sweden  
1230-1300 15315  
1400-1430 15315  
2300-2330 11705 9605 6035  
0230-0300 11705 9695

**SWITZERLAND** SBC  
1315-1345 15140 21520  
1530-1600 15430 17830 21520  
2100-2130 9590 11720 11870  
15305  
0145-0215 5965 6135 9725 11715  
0430-0500 9725 11715

**SYRIA** Radio Damascus  
0430-0500 7105  
2030-2200 9625

**TAHITI** Radio Tahiti  
1900-1907 15170 11825 exc Sun

**TAIWAN** Broadcasting Corporation of China  
0200-0350 17890 17720 15345  
15125 11860

**TANZANIA** Radio Tanzania  
1600- } 15435  
1800- }

**THAILAND** Radio Thailand  
0415-0530 11905 9655  
1040-1145 11905 9655  
1130-1145 7115

**Bangkok Meteorological Radio**  
~1245-1330 7863 (mix w/Thai)

**TURKEY** Radio Ankara  
2200-0119 9515 11880A 15165

**USA**  
AFRTS-Washington  
6030 (2300-)0600-1130(-1200)  
6095 0900-1430  
9700 0700-1630(-1730)  
11790 2000-2300(-2345)  
11805 1430-1630(-2200)  
11805 0500-1000  
15330 1230-0700(-0830)  
15430 (1200-1330-2300  
17765 (2100-)2130-0500(-0630)  
(Normal schedule may be extended as shown for sports coverage or special events)

**Voice of the OAS**  
2345-2400 15160 11740 9640

**BBC World Service relay**  
0030-0330 9510

**WINB**  
1600-1745 21580  
1745-2100 17720  
2100-2245 15185

**KGEL**  
0700-0800)  
1000-1100) 5980

**WYFR**  
0100-0245 9525 11720  
0245-0300 9715 11855  
0300-0500 6155 9525  
0445-0500 5985 9715 11855  
1230-1600 15110 Sun  
1230-1400 15150 17730 Sun  
1230-1500 17865 Sun  
1500-1600 17870 Sun  
1545-1600 15150 17730  
1605-1700 15150  
1605-1900 17845  
1700-1900 11805 15440  
1845-1900 15110  
2045-2100 17845  
2100-2245 15110 15135 15150  
17755 17845  
2245-2300 15135

**United Nations Radio**  
1800-1805) 21670 15235 Fri  
1830-1835)  
0230-0245 17850 15270 Sat  
0500-0505) 6055 9530 Sat  
0545-0600)  
0707-0720 6055 9520 Sat  
0845-0900 5955 9555 Sat  
1000-1015 6145 9660 Sat

(standby for Security Council coverage; also in French.)  
6055 9520 11760 15235 21670

**USSR** Radio Moscow  
(subject to change!!) Pgm. I:  
2300-2430 17900 17760A 17720  
15245 15210 12050  
12000 11870 11750  
11720 9685 9665A  
9635 7330 6020  
5905 4860  
0100-0300 same except: 11750  
drop: 9600 (to 0200)  
9530 add  
0300-0330 9685 9665A 9530 7330  
5905 4860  
(see also Bulgaria)  
0330-0400 same, add 11720 12000  
0400-0500 same, add 11770 11735  
9720 9600

Pgm. II:  
0330-0400 17720  
0330-0500 15245  
0330-0730 15210 15180 15130  
12050 11960 9635  
6020  
0400-0730 15100  
0430-0730 9710

**Radio Kiev**  
0030-0100 17900 17760A 17720  
12000 15245 15210 12050  
11735 11720 9730 9665 9600  
0300-0330 17760A 17720 15245  
15210 12050 9720  
9610 9520 7150  
(both: Tue, Fri, Sun only)

**Radio Tashkent**  
1200-1230) 15460 15115  
1400-1430) 11925 11730

**Radio Vilnius**  
2230-2300 Sat Sun 9685 11770  
11790 11750  
0030-0100 Sun Mon same exc.  
11750

**Radio Yerevan**  
0322-0328 17900 15180 15130

**Radio Peace & Progress**  
1300-1330 17835  
1430-1500 15210 15295  
1530-1600 15200

**VATICAN** Vatican Radio  
(transmitters in Italy)  
0100-0115 5995 9605 11845  
1000-1015 17840 21485 weekdays  
1045-1100 17840 17900 21485 "  
1415-1430 11790 15165 17705 "  
1700-1715 11700 15120 17900  
2045-2100 9625 11700 15120  
2115-2130 9625 11700 15120  
2210-2225 7235 9615 11700  
2230-2245 7235 9615 11700  
(Mon, Wed, Fri)

**VIETNAM** Voice of Vietnam  
0100-0130) 10040 12035  
1000-1030)  
1300-1330)  
1600-1630) 10040 12035 15012A  
1800-1830)

**Liberation Radio**  
0700-0730)  
1030-1100)  
1430-1500) 7470 10010  
2030-2100)  
2330-2400)

**YUGOSLAVIA** Radio Belgrade  
2200-2215 9620



## LOG

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DEADLINE- 15 JULY '75

## REPORT Section A

W1 All Right Robert/6 is taking a one month leave of absence from FRENEX (going AWOL). I, Kevin Szot, am pinch-hitting for him this time around while he's getting prepared for his trip to the ECNA and the Field Day contest.

Unfortunately, conditions haven't been as hot as the temperature here in Vacaville, already with a high of 105°. But when things start cooling down in Fall, just watch the Tropical Bands pick up.

And once again, before getting on to the loggings, let me give my thanks to our Down Under reporters in Australia for holding this thing together. Also thanks to our Down & Out Dx'er Bob Hill, who promises to return next month.

- 2301 N. KOREA. Hyesan. 1401 KK ancts. QRM from unid Indo. (Willis)
- 2410A FALKLAND IS. FIBS. 0130, also 536 MW at 2235. This logging is from Pablo Castiarena, Buenos Aires of the Argentine DX Club, forwarded to NU by John Tuchscherer, and to FRENEX by Bob Hill!
- 2510 S. KOREA. KBS, Taegu. 2010 KK ancts. VG (willis)
- 2525 INDONESIA. UnID. Noted 1300, Love Ambon, into nx relay (not sure where from). Not Suara Annida! (Cosier)
- 2653H PHILIPPINES. DXCR. Heard 8 & 9 June with an ID at 1300. Semi-Classical mx is always played. Freq annd as 1330. ID always slurred and unreadable for me. Thanks to Darrel Buxton for ID'ing it. (S#0t) 1130 ID, into semi-class mx; 1200 ID. ID's in EE, but unreadable. Best sig on 2-MHz!; F-G (Hill) (This is my unid of last month. 2 X 1326.5 KHz with 5 kw; KMS).
- 2919 INDONESIA. RPKD Klaten. 1259 ID, Jakarta nx 1300. (Cosier).
- 3165 INDONESIA. RPKD Kota Madya, Surabaya. 1214 mx and M talk, ID 1215; F (Szot) ula)
- 3223 SWAZILAND. SMR. Runs late on Sat's with pop mx, EE, 2235\* (Pad-
- 3232 CONGO. Brazzaville. 0620-0635 M in Vern., choruses; F (Shingler) 2140 f/in, FF talks, held to 2200. (Padula 5/17).
- 3241 INDONESIA. Ambon, RRI. 1311 w II talk. Nx?; F (Szot)
- 3250 S. AFRICA. SABC-Springbok Radio. 0000-0415 in lang (Afrikaans, KMS) & EE. Jingles, Afr mx; F (Anderson, Eichenhorn, Bowlsby), 2150; VG (Willis), EE/Africaans ex 4810. 2100\* w-days, 2200\* Sat. All-night pgm continues past 2245 f/out. (Padula 5/31).
- 3285 S. AFRICA. R. RSA. 0408-0413 w nx. Mx to 0430 alt. with talk. ID and nx followed. (Shingler) 2015 mx & EE ancts (Willis) 2100\* on w-days. EE Sve ex 4945. 2205\* on Sat's. (Padula).
- 3300 BELIZE. RB. 0500 nx EE, C&w mx. 0510\* with NA. (Green, Bowlsby).
- 3300 GUATEMALA. TGNA R. Cultural. 0328-0410 EE religous pgm'ing; F-G.
- 3306 RHODESIA. RBC. 1600 EE nx, early f/in. (Brunner, Green) Separable from Ranchi on 3305. (Willis)
- 3320 S. AFRICA. SABC. \*0400 NA, rooster call. Nx 0401-0405 in Africaans; F-G (Bowlsby, Shingler) NF ex 4875, noted 2100\* (Padula).
- 3325 GUATEMALA. R. Maya de Barillas. SS talk only, no mx (also no time on this logging, KMS); Clear, VG (Green).
- 3330 CANADA. CHU. 1950-2000 time sigs. Alternating EE-FF voice ancts;
- 3338 MOZAMBIQUE. L. Marques. Extended sked with s-off (Chet Smith), varying between 2215-2245. //4865. Don't confuse with Zanzibar which also runs late some days during this period. (Padula).
- 3339 ZANZIBAR. RT. 1545 in Swahili. Again early (Willis)
- 3345 ANGOLA. R. Clube do Huambo. 2220 f-in, PP talks, pops, past 2240. 1st time this winter. (Padula 5/31).
- 3350 GHANA. R. Ghana, Ejura. Netwk 1 (Verns) native hymns 2130-2145 in church service on 5/21; noted til 2230 f-out on 5/31. (Padula).
- 3355 VENEZUELA. R. Valencia. 0350 pops, TC; final ID, anthem at 0400\*. (Sparks 6/13), but see this...R. Impacto, new name for R. Valencia, but call still YVLC. 0330-0335 t-out. Talk by M, LA mx. 0330 ID & ancts, then more mx. (Tuchscherer 6/10) (In light of Bill's logging of them still using "R. Valencia" after your

- logging, I suggest "R. Impacto" may be a slogan. (KMS).
- 3365 VENEZUELA. R. Puerto La Cruz. 0330 ID & pops. (Sparks 6/6).
- 3366 GHANA. GBS. Netw 2 (SE). 0600-0615 SE nx. 0607 ID; P with static. (Barhart, Shingler), 2120-2130 western pop mx (Padula 5/11).
- 3385 ASIATIC RSPFSR. QTH??? Feeder in RR here QRM'ing Rabaul. 1211 M-W nx; P (Sztot) Is SSB...
- 3390 ECUADOR. R. Zaracay. 1120 SS ancts. (Willis)
- 3395T VENEZUELA. R. Universidad. (TENT) 0340 SS, quiet mx, echos, ID, 0358\*. (Duke 6/5) (Format and S-off time suggest Universidad. (KMS).
- 3640 P.R. CHINA. FLA. 1316 CC W comtry // other freqs. (G). (Sztot).
- 3780 ASIATIC RSPFSR. QTH??? 1140-1150 RR HS px. // 4050, but not // 4030. 4030 & 4050 run // acc. to B. Davis, but hrd here with different pgm's; F-G, but RTTY QRM. (Hill).
- 3913½ AZAD KASHMIR. R. AK. Presumed here, as ex 3380, after BBC s-off 1615, as it was last year. Urdu type ancts. (Willis 5/30).
- 3980 S. AFRICA. SABC. 0034 SE, cig ads, MoR mx, //3250; G (Miller) 0355-0400 EE, ads, ID, mx, S-7 sig, also Afrikaans. (Schwartz)
- 3995 W. GERMANY. DW-Julich. 0048 M-W discussion, HAM QRM. (Miller) 0045-0100 GG then IS and more GG. Static, HAM QRM. (Anderson)
- 4000 S. AFRICA. R. RSA. 0345 SE, mx pgm; G (Talbot 5/23) (Not 3995)
- 4005 BOLIVIA. UnID. 0410\*, much QRM. Also see 4990. (Tony Jones, KMS)
- 4045NF P.R. CHINA. FLA. 1100 CC, after Apr & June Paraguay, de SCDX
- 4050 ASIATIC RSPFSR. Yuzhno-Sakhalinsk. RR HS still going from 1330 t-in til 1400\*; Vy weak. (Davis)
- 4210NF N. KOREA. Unlisted KK stn // 4273 at 1350; P (Willis 5/15)
- 4330 P.R. CHINA. FLA. 1325 CC M comtry. //4380(VG); G (Sztot)
- 4520 ASIATIC RSPFSR. Palana, Kamchatka. RR \*0700-0800\* weak, noisy. \*0500 pgm too weak too hear summers. \*0700 is still wed, Fri, Sat & Sun. (Davis)
- 4665 ASIATIC RSPFSR. QTH??? RR R. Moscow HS 1450 still here. Rather Lao hrd 4652v this day, others as low 4635. (Willis 5/12)
- 4750T ZAIRE. R. ZAIRE. 0440-0445 FF. Unreadable FF but too poor to detect, or "copy" ID: 131 (Barhart 5/25)
- 4756 MOZAMBIQUE. 0425-0440 choruses, M ann'cer in Vern; P (Shingler).
- 4762 ECUADOR. R. Cenit. 0403 HCBJ pgm. R. Cenit ID and termination of b'cast with NA. Other LC. stations relay HCBJ too. (Field)
- 4770 LIBERIA. ELWA. 0622-0640 EE, religious pgm's. BBC nx 0700. (Cosier via LP, Bowsly, Schwartz), 2219-2300\* EE relig pgm. Offer of a R. Listening Guide from Calif. address; F (Schwartz, Barhart)
- 4777 GABON. Libreville. 0515 Vern one day, & FF at 0545 with nx on another day; G (Schwartz), 0610 FF ancts, QRM de 4775. LF (Willis), 1710 FF noted vy early, usual no earlier than 1900! (Cosier) 2017 FF; Exc. (Willis), 2200-2250 FF, Afr mx, 1st time this year. (Padula), 2232-2248 in Vern & FF (tho WRTH lists only FF) with string melodies. G (Barhart), 2245 FF, S-4, ID. 2335 FF nx, ID. 2345 EE of American Co.'s interest in Gabon; F-G (Schwartz).
- 4780 AFARS & ISSAS. R. DJIBOUTI. Continuous Afr mx 1715. (Cosier)
- 4783 MALI. RM. Afr mx 0710. Long rath! (Cosier), 0630 FF ancts, // 5995. QRM'ing a Latin, presumed Atlantida on 4785. (Willis, 4784).
- 4785 TANZANIA. Dar-Es-Salaam. EE pgm in Overseas Sve. Rarely hrd due to Mali QRM at this time. (Cosier).
- 4787 COLOMBIA. Ecos del Combeima. 0540-0555 SS, good LA vocals, ID's; G (Brunner), 0625 ID's, TC's, SS pops. (Bowsly).
- 4790 INDONESIA. Pak2 (Fak-Fak). Noted with full ID 0930, then Jayapura nx relay. (Cosier).
- 4790A UnID. FF with M & W talking, ID 2135. P (Anderson 5/18) (Mali 4784v? KMS).
- 4795T COLOMBIA. R. Reloj (TENT). 0505-0518 SS, Colombian type pop mx, "machine gun" announcer. No definite ID after 15 min. (Barhart).
- 4800 VENEZUELA. R. Lara. 0120-0140 SS LA mx, clear ID by w at 0134; G (Brunner).
- 4810 S. AFRICA. 0345-0415 EE, nx, mx, birthday wishes to golden agers, etc. (Rosinski)
- 4810 ASIATIC RSPFSR. 1330 RR pgm'ing. Presume asiatic QTH, but may be further west. (Willis 5/27), 1700 Trumpet IS, short RR nx, then mx by Charles Aznavour. (Cosier)
- 4812½ AUSTRALIA. R. Australia. SPUR. Indo pgm noted 2300-0030 from Shepparton. Is 9625 divided by 2, suggesting tx fault. Noted 5/10 and subsequent days. (Padula)
- 4816 UPPER VOLTA. RTV.V. 0620 FF pgm via LP; VG (Cosier), 0710-0726 AA chants and talks. Too much static, but good sig. (Moritz) (I hope you have a coors,er, cool summer John. KMS)
- 4820 ANGOLA. Emisora Oficial. \*0500 in PP with IS, Afr, ID into M & W talk. Not hrd 0600 ck; P (Wegener)

- 4820 HONDURAS. HRVC. 0400-0415 SS, RR and J.S. baseball scores from A.F. Nx Sve. ID 0412; F-G (Brunner), \*1000, slightly rare (willis) THE GAMBIA. Banjul. \*0625 in SS with chants starting is).
- 4820 0632. BBC WS nx at 0700; F-F (Wegener), 0650 korean chanting, BBC WS 0700...Long rath!!! (Cosier).
- 4820 VENEZUELA. R. Tricolor. 1100 SS mx and talk; F (Maderson).
- 4820 Cf. March LR-A...UNID at 0517 is R. Catolice. (Behr).
- 4825 GUATEMALA. R. Mam. 0111 SS-Indian(?) talk, several ID's, marimba mx; G (Jones), 0100 Indian talks, marimba mx, 0130 SS and Indian nx, 0145 mx + full ID to 0207\*; often G. (Behr).
- 4826 ECUADOR. R. Luz y Vida. 0430 EE anct requesting rpt's. Ecuad mx past 0500; G (Behr), 0520-0530 SS singing with accordian and strings; G (Sarhart).
- 4832 COSTA RICA. R. Capital. 0518-0615 ID's, mx with Latin beat; G (Schwartz, Brunner), 1108 SS, fast LA mx, ID's, Ad with "Lion's Roar"; G (Miller).
- 4850 P.R. CHINA. Peking. 2nd HS pgm. \*2100 (Padula).
- 4850 MAURITANIA. R.NM.\*0700 past 0720 with AA, and Koran chanting. F-G (Cosier via LP, Shingler, Buxton).
- 4850 VENEZUELA. R. Capital. 0300 ID, SS, mx & etc, 0400\*; G (Behr 5/17 and Brunner 5/15) Both wonder where's R. Clarin?
- 4850 USSR. UZBEK SSR. R. Tashkent. ID 1340, RR type lingo (willis 5/22)
- 4855NF BRAZIL. R. Cl. do Para. 0315 RP talk, many ID's. 0507\* (Behr 5/15) 0900 many coml.'s. pops, ID; (Sparks) ex 4865.
- 4855 MOZAMBIQUE. LM. "A" pgm til 2250\*. Normal s-off 2215. //4865. (Padula 5/24).
- 4860NF USSR. "Kiev" pgm in Ukr. for Eur., 2230-2300. QRM from co-channel Soviet. (Padula 5/11).
- 4865 BRUNEI. RB. 1010 Malay pgm and light mx. (Cosier).
- 4865 MOZAMBIQUE. A Voz de Moçambique. 2200-2250\* relaying "A" pgm, // 4855 on 5/24. 2205\* noted as normal s-off. (Padula).
- 4870 DAHOMY. V. de la Rev. 0543-0559 FF, Afr vocal mx; F (Shingler)
- 4875 S. AFRICA. R. RSA.\*0400 EE ID, pgm for Gen. Africa and ME. nx; F
- 4877 S. VIET NAM. Ho Chi Minh City (Rumor has it that the (Schwartz) name will be changed to something different than do Chi Minh, as the name isn't all that popular with the people). 1100 VV nx // all the other outlets. (Cosier).
- 4885V COLOMBIA. Ondas del Meta. 0500v s-off noted giving freqs and everything. "Himno Nacional" til 0502\*; G (Wegener, Szot), 0800-0900 TC after each record of LA songs. (Padula) (This is sometimes on a 24hour sked, sometimes 0500\*. KMS).
- 4890 PAPUA NEW GUINEA. NBC. EE 1110-1113 ID as "National R." (Schwarz) (PNG no longer has the VLT call signs; it's now P2. 4890 is now P2T4; 9520 is P2T9; & 3925 is P2K3 per NBC list. KMS//
- 4890 VENEZUELA. Rdf. Ven. 0130-0235, 0338. SS anct, EE pops of mellow type. NA 0359; G (Brunner, Moritz, Meehan).
- 4895 SARAWAK. RM Kuching. 1320 Iban. Chanting //5005 (F); G (Szot).
- 4900 INDONESIA. Gorontalo, RRI. 1400 RRI IS, local nx, mx to 1415 ID as "Studio Gorontalo", more or less, and more mx; F (Szot).
- 4900 VENEZUELA. R. Juventud. 0059 SS Amer & LA pops, ID, ads. (Miller)
- 4907 KHMBRE REP. (Geoff, this is now Cambodia again. KMS). \*1100 with short ID's, then into mx pgm. (Cosier).
- 4911 GUINEA. Conakry. 2140-2205 FF, 1st time local morning. (Padula) 0628 FF, African drum mx. Easy LP! (Cosier).
- 4911 ZAMBIA. RZ. 0430 nx in African lang. ID and Afr. mx. (Sparks 5/15)
- 4915 GHANA. GBC. 0600 EE nx til 0615; F (Bowlsby-TBENT, Cress)
- 4920 HONDURAS. R. Progreso. 0100 ID's, EE & SS mx (Green), 0455-0504\* SS, mx to 0500, "Buenos Noches", few bars of mx, & off (Sarhart 5-26), 0535 SS relaying some sort of mx'al contest (live). Frequent ID's. Still there 0630. (Wegener) on 6/1.
- 4924 MOZAMBIQUE. Lourenço Marques (Also rumored that a new name is in store for the capital of Mozambique. KMS). "B" pgm of EE/ Afrik-aans, late on Sat with DJ show 2200-2230. weekday s-off is 2202. (Padula 5/24).
- 4940 IVORY COAST. RTVI. 0600-0700 FF pop mx; F-G. (Padula and Cosier, both LP, and Bowlsby, via SP), 2300 ID FF as "R. du Nord", then FF nx; F (Schwartz).
- 4945 COLOMBIA. R. Colosal. 0535 EE ID with freq, mailing address & request for reception reports. Pops. (Sparks 5/15), 0603-0635 SS LA mx, "Love Ballads", complete ID's. (Moritz, Brunner).
- 4950 VENEZUELA. R. Coro. 1031 SS lotsu ads, LA songs that all sound alike; 232. (Miller).
- 4952L E.R. CHINA. SILIKHOT listed, but had IS 1 reking pgm at 1300, //6225. Heard now that Jian Sator has moved. (willis 5/20).

- 4955 COLOMBIA. R. Nacional. 0320-0330 SS Classical mx (some before live audience). QRM from RTTY; G (Sarthart), 0432 Clas mx, nx, NA at 0500\*; F-G (Meehan).
- 4965 COLOMBIA. R. Santa Fé. 0200 past 0630, "Uptempo"mx, jazz, pop etc. ID after each song; Usually G (Green, Sarhart, Meehan, Brunner, Moritz).
- 4970 VENEZUELA. R. Rumbos. 0225-0247 SS, Slow mx, bells, ads, crying baby. Bird same crying baby from R. RSA - don't know what it wanted or got. (I don't know what in the world you're talking about. KMS). VG (Brunner).
- 4972~~F~~ CAMEROON. Yaoundé. FF anctc 0623. on 6/1-Great African Day!
- 4972T FRANCE GUIANA. ORIF. (TENT) FF at 2215. 0000\* with (Willis). NA. No positive ID; VG (Anderson) (Maybe Cameroon? KMS).
- 4980 GHANA. GBC. 0600 ID, local nx EE, pops. //4915. F-F (Bowlisy, Cosier via LP, Schwartz).
- 4980 SWAZILAND. SMR.\*0400 "popcorn" IS, ID, 0412 ID, US pops;F-P.
- 4980 VENEZUELA. Escos del Torbes. 0130-0205 (wegener, Schwartz) SS, mx; F (Rosinski).
- 4980 UnID. ASIAN Noted 1200 to 1328\*. In Burmese, but doubt is Peking as per SCDX. Not // reking Burmese freqs. (Cosier).
- 4985~~+~~ BRAZIL. R. Brasil Central. 0340-0410 PP LA & US pops. MF (Tuchscherer 6/1), TENT. As early as 2345 to past 0430, but no ID understood. Nx 2345. (Field) ex 4995
- 4985T ECUADOR. R. Loja. TENT. 0235 SS LA mx, ads, tent. ID's; 333. (Miller)(Not Brasil Central? KMS).
- 4990 BOLIVIA. UnID. \*1000 much QRM making ID'ing impossible. (Tony Jones, Paraguay via SCDX).
- 4990 NIGERIA. 0600 EE nx (Willis by LP), TENT. 0602 EE nx (Cosier).
- 4990 VENEZUELA. R. Barquisimeto. 0410 SS, nx rpt's via phone. (Green)
- 4995 CHARDESTINE-N. VIET NAM...R. Liberation. Home pgm in VV at 1115. //7417. (Cosier), now the VV stn here, 1100-1700, ex Hanoi. (Willis 5/5)
- 4995 "Ref. May Log Report. Stn indicated at 0700 as CBC is obviously an error. This is a rx double spot, from 5905 minus 910 kHz. 5905 is the CBC r/r feeder 0600-0800, recently changed to 6145" (Radula)(Good Bob, thanks. KMS).
- 5000 U.S.A. wvV. OC only, as if audio turned down at 1618; same on 10000; normal by 1657 (Houser 5/26).
- 5010 CAMEROON. R. Garoua. FF, indogenous chants 2140-2150 (Radula).
- 5010 DOM. REP.. R. Cristal. 0554-0605 SS, mx, 0604 ID; VG (Brunner).
- 5012 RHODESIA. RBC 1550, pops, 1600 EE ID, nx, rare (Cosier).
- 5015NF BRAZIL. R. Cul. de Cuiabá, 0225 Mx pgm, 0300\* (Field, Sparks)
- 5015 WINDWARD IS. R. Grenada. 2300 EE ID, BDC WS nx; G (Schwartz)
- 5020NF SOLOMON IS. SIBC. 0600-1030+ with BBC, R. Australia, R. New Zealand relays, and every so often, a local pgm. noted by- (Willis, Buxton, Field, Cosier, Radula, Shaw, Sparks, Szot, Hill, Shingler on 5015 before move). ex 5015, ex 3995.
- 5020+ NIGER. Niamey. 0540 past 0610 in FF and Verns. (Sarthart, Willis, Cosier).
- 5025 BRAZIL. R. Borborema 0100 PP (Field), 0315 ads, ID's, past 0430. ID's only as "Super-Borborema". (Behr). ex 3325.
- 5026T UGANDA. 0450 Vern, Afr sounds, chants, het on Latin 5027, using new 60 mb dipole. (Shaw 6/1) If so, GREAT!!! KMS
- 5030 INDONESIA. Biak, RRI. 0801 local ID, //7210, past 0900, unlisted in WATH-75 (Radula) ID 0845, not often reported (Willis).
- 5039 SUDAN. Omdurman. EE nx 1630, het USSR. (Willis 5/25).
- 5054 MONGOLIA. RUJ. Mong HS now 1500\*, ex 1420\* //4080, 4762 (Willis)
- 5205 INDONESIA. UnID. Here from earlier than 1230, past 1430. Hard to ID! (Cosier), 1355 weird chanting, 1400 Love Ambon, into Indo talk (not nx). Vy, vy weak mod. QRM de aeros. (Hill). 1310 with mx under CW and other things. Anct 1311;P (Szot).
- 5295 P.R. CHINA. Peking. \*1600-1655\* VV, not listed as a sve at this time. //3985. (Willis).
- 5440 P.R. CHINA. UJUMCHI. Uighur anctc //7050, 4110 at 1330 (Willis).
- 5885NF INDONESIA. Pekanbaru, RRI. As of 5/10 on here.\*1000 with ID's. (Cosier), 1600\* after ID. Much better than 5852. Sibolga 6260 also noted 1600\*. (Willis). 1300 rekanbaru ID noted on 6/1; G (Szot).

Sorry I had to cut down the latter loggings (after 5 MHz), because of a 4-page limit. Nothing good left out though, and I only cut when necessary (like Togo 5047). There's still good DX out there under the static, so dig it out! As for me, I'm goin' to sleep....

73, Kevin

ATMOSPHERIC NOISE

by Charles A. Wootten

Atmospheric noise, commonly called static, is a result of the numerous thunderstorms occurring at various points on the earth, but concentrated mainly in the tropical regions. These electrical disturbances are transmitted over long distances via the ionosphere in the same manner as shortwave sky waves. Because the resulting field intensities of the noise decrease with the distance traveled, the amount of interference encountered from this source become progressively smaller in the higher latitudes of the temperate zones and in the polar regions. Sky-wave propagation varies with the time of day and season. Hence the intensity of atmospheric noise also varies with both place and time.

Measurements have been made of atmospheric noise at a number of locations throughout the world at different points of time. Although the measurements cannot be called complete, they do indicate the difference between noise at various locations, various frequencies, and different hours of the day.

(1) Variations in noise intensity from day to day at a particular hour fall relatively close to the seasonal median value. The seasonal variations differ with receiving locations; therefore, variations with the 11-year sunspot cycle are not well defined. Since the majority of atmospheric noises originate with thunderstorm activity, the atmosphere's noise level at a particular location is due to contributions from both local and distant sources. During a local thunderstorm, the average noise level is about 10 db higher than the average noise for the same period. From this, it can be seen that the atmospheric noise level is related directly with weather conditions. The position of the equatorial weather front greatly affects the atmospheric noise at all locations. This front varies in position from day to day and its general location moves seasonally north and south with the sun.

(2) The degree of activity varies from time to time and from place to place, being much greater over land than over sea. The principal areas of thunderstorm activity lie in equatorial regions, notably the East Indies, equatorial Africa, equatorial South America, and Central America. Thunderstorms are present for about 50 percent of the days at locations in these equatorial belts and this activity appears to be the principal source of long-distance atmospheric noise. It has been estimated that there are about 2,000 thunderstorms in progress at each instant throughout the world.

(3) Storm activity is located over tropical land masses during the local summer season and is more active over land - usually between 1200 and 1700, local time. Thunderstorm activity over the sea generally occurs at night and can last for more than a day.

Atmospheric noise from local sources shows discrete crashes similar to impulse noise, while long-distance atmospheric noise consists of rapid and irregular fluctuations with a frequency of 10 to 20 kHz per second and a damped wave train of oscillations. The amplitude of lightning disturbances varies approximately inversely with the frequency squared and is propagated in all directions both for ground and skywaves. Noise propagation follows normal propagation laws and, when conditions are suitable, an increase in the noise field may cause multiple impulses to be received.

The atmospheric noise grade is evaluated by determining the signal field intensity required to override this amount of atmospheric noise at various frequencies. Estimated field intensity values required in all noise-grade areas have been evaluated in various telecommunications offices and can be found in their publications and other books on the subject. For acceptable communication of the reference type - radiotelephone, dsb, 100 percent amplitude modulation - a signal-to-noise ratio of approximately 14 is required.

Consideration was given to briefly summarizing cosmic noise, but since the effects are mainly noted at frequencies greater than about 20 MHz, the discussion would not be suitable - nor applicable - to the general hobby of shortwave listening.

*BS's Clark*

## "TRANSMISSION LINES"

by Charles A. Wootten

When a radio set cannot be located close to its antenna, connection is made by means of a transmission line (feed system). When on a DX-pedition such a line is usually short, consisting merely of a down lead. However, since most of us have a fixed location, antenna separation is such that transmission lines to the equipment may be as long as several hundred feet.

Many antennas are given descriptive names that reflect their method of "feed", but such names do not mean that the performance of the antenna depends on the type of feedsystems used. The transmission line has only one function (in respect to DX-ing) - the transfer of rf power from the antenna to the receiver.

If the transmission line connects to a receiver, the most important properties are:

- (1) The loss at operating frequencies
- (2) The ability to reject unwanted signals and rf noise

In the selection of transmission lines, the following game-factors must be considered:

(a) It should first be determined whether or not a balanced transmission line is required. If both the radio set and the antenna are balanced to ground, a balanced line is required. If both the radio set and the antenna are unbalanced to ground, an unbalanced line is used. When the radio set is unbalanced to ground and the antenna is balanced (or vice versa), either a balanced or unbalanced line may be used. A balance-to-unbalance (balun) transformer may be added for better results.

b. A decision should be made next as to whether or not the transmission line should be shielded. If the line is used with a transmitter located close to other radio equipment, or if it is used with a receiver located near other radio apparatus or sources of radio noise, shielding the line may be necessary.

(c) In considering the inherent line loss, the required line length is the primary factor. Functions between separate pieces of line introduce additional losses. For receiving use, the line loss may be of less importance than the rejection of noise and interference.

(d) The matching capabilities of the set, antenna, and line must also be considered. If considerable difficulty is encountered in matching the line to the set or antenna, another type of line may be preferable, even though the second choice may be less desirable from some other standpoint.

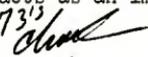
## TYPES OF LINES

An open-wire line consists of two or more parallel wires of the same size maintained at a fixed separation by insulated spacers at suitable intervals. The most commonly used has an impedance of 600 ohms, but other impedances can be found for your use by proper experimentation.

Transmission cables are available in various forms. One variety consists of two insulated wire twisted together or paralleled and held together with a weatherproof material such as impregnated braid or vinyl insulation. Another type of balanced cable consists of two parallel conductors imbedded in a common insulating medium, with or without a metallic sheath. Also in general use is coaxial cable consisting of a center conductor mounted inside of, and coaxial with, an outer metallic tube or braid connector. The conductors are separated by spaced insulators or solid insulation.

## IMPEDANCE RELATIONSHIP

When a radio set is connected to an antenna through a transmission line, the impedance looking into the line, at the radio set terminals (load impedance) in general is not equal to the antenna impedance but is modified by propagation along the line. In the special case when the antenna impedance equals the characteristic impedance of the line, the load impedance is also equal to the antenna impedance. With low loss lines of any impedance, the following are good approximations for the impedance relationships: if the line is a  $\frac{1}{2}$  wave in length (or a whole multiple of a  $\frac{1}{2}$  wave length), the load impedance equals the antenna impedance. If the line is an odd multiple of a  $\frac{1}{4}$  wave in length, it acts as an impedance transformer.

7313  


METHODS OF COUPLING RECEIVERS ON ONE ANTENNA

by Charles A. Wootten

## RECEIVERS IN PARALLEL AND SERIES:

When the input circuit of a receiver is tuned by anti-resonance, as is common, its input impedance normally is higher at the operating frequency than at other frequencies. This higher impedance makes the series connection of receiving sets preferable, provided that receivers with balanced inputs are used. For example, assume two receivers U1 and U2 are tuned to materially different frequencies  $f_1$  and  $f_2$ , respectively, and connected in parallel. Then, at operating frequency  $f_1$ , receiver U2 would be a low impedance and would tend to short out receiver U1. Assume, conversely, that they are in series. Then, at the operating frequency  $f_1$ , receiver U2 would drop only a little of the available  $f_1$  voltage, leaving most of it for the operation of receiver U1.

(1) With balanced-input receivers located close together and connected in series, up to four or five receivers tuned to different frequencies may be used before the losses exceed 10 to 15 db - compared with a matched-impedance condition.

(2) The use of more than two or three receivers in parallel, tuned to different frequencies, usually results in large losses.

(3) When several receivers are connected to one antenna, interference may be produced in any one of them by spurious outputs from the others.

**Resistive Coupling Networks:** If a resistor is used in one antenna lead of paralleled receivers, the loss in signal is increased and the isolation of the receivers from each other is decreased in comparison with the reactive coupling system. The best value for the isolating resistor is  $(n - 1) AB$ , where 'n' is the number of paralleled receivers, A is the antenna, and B is the receiver input impedance. For a small number of paralleled receivers, the loss between receiver inputs is too small to control an ordinary spurious receiver output that coincides in frequency with a weak unwanted signal. If the resistor value is made larger, this loss increases, but the loss in the wanted signal also increases. Thus, resistive coupling networks for feeding a number of receivers from the same antenna have a restricted field of use.

A single broadband antenna can be used by several receivers tuned to different frequencies. The broadband antenna in mind is the rhombic. The receivers should be divided into directional groups, with a separate antenna for each group, and with individual antennas for those receivers that cannot be efficiently grouped. When several receivers, tuned to different frequencies, are connected to the same antenna without a common preamplifier (multicoupler), reduction in the signal voltage delivered to each receiver must be expected. Such reductions do not necessarily lower the audio signal-to-noise ratio. At times when the level of atmospheric or man-made hf noise is high, considerable loss can be tolerated before receiver set noise becomes an important factor. However, any large reduction in signal voltage would be likely to reduce the percentage of usable circuit time over a 24-hour period. When a multicoupler is used, its load carrying capacity for all signals received (both wanted and unwanted) is important. When the load capacity is too small, interference is produced by intermodulation of the various signals in the preamplifier.

One type of antenna coupler, operating in the range of 4 to 24 MHz, is designed to allow of up to 10 receivers from a single antenna. Nominal input impedances are 75 ohms unbalanced or 150 to 600 ohms balanced. A spurious response (caused by intermodulation in the coupler) of less than 2uv will be produced 'f' MHz away from either of two unwanted 5,000-uv signals 'f' MHz apart, if 'f' is at least 2 MHz. Restriction of unwanted signals to 5,000 uv may necessitate considerable separation from any transmitting antenna. If 'f' is less than 2 MHz, the spurious response is larger.

To review the definition of a multicoupler: it is a broad-band preamplifier with multiple outlets, used to distribute signals to several receivers. A multicoupler reduces or eliminates the effects of spurious receivers outputs and the loss that occurs when the receivers are connected directly to the antenna or transmission line. However, since a multicoupler has a limited load capacity and a broad frequency band, strong unwanted signals such as those from nearby transmitters can produce interference by intermodulation.

*7315*



O EMISSOR REGIONAL DE S. TOMÉ E PRÍNCIPE, 15 6 75

agradeço e verifica o relato da escuta referente à emissão transmitida no dia 4/1/75 entre às 21:50 e 22:45 TMG na frequência de 5.338 KHz, banda de 50 metros enviado por ALAN MAYER 3119 Western Avenue PARA FOREST

Cx. P. 41 SÃO TOMÉ VIA PORTUGAL

*Give next frequency in short waves will be 6807 kHz. Give's Semestrely*

*zomto digiteiam mltas  
somuntes pias bozan  
paa 6 75 45 19 5 75  
paa 13 45 75 22 00 04 75*

RÁDIO CLUBE DE CABO VERDE - PRAIA

CR4AA

EMISSOR DE ONDAS CURTAS

EMITE DIARIAMENTE

POTENCIA: 5 kilowatts

~~21-22-00-04-75~~

FREQUENCIA: 3960 Kc/s

PUBLISHERS NOTES:

LR-B for July FRENCH did not arrive in time to be included in the JULY FRENCH, it was mailed but is over three days late. Because of the JULY 4 holiday and the printers and publishers schedule we went ahead without it, waiting would be unduly delayed publication. If it arrives there will be room to include LR-B for July in the August FRENCH. Instead we have included the last three parts of Charlie Wootens series on noise and some QSL's. 73 Al Mayer. 7/1/75.



11780

100 kw. Mr. Alan Mayer

Thank you for your report. 3119 Western Avenue

Park Forest,

*Alan Mayer*

ILLINOIS 60466  
U.S.A.



REPUBLIC OF VIETNAM

**Q S L**

N° 3, Phan đình Phùng St.  
SAIGON

de

We confirm your reception of our station broadcasting from Saigon on August 29, 1975 at 19.44 local time (GMT + 8) on 1.19 m or 5620 kc/s.

Many thanks for your report.

RADIO VIETNAM

# LOG REPORT C 7-75

Editor: Jerry A. Lineback

11600 kHz up

P. O. Box 325

Deadline: 15 July, 1975

St. Joseph, Illinois 61873

U.S.A.

SPECIAL NOTICE: As previously announced I will take over editorship of SHORTWAVE CENTER beginning with the September issue of FRENEX. Andy Robins will become editor of Log Report C starting with the same issue. Therefore AFTER July 15, 1975, all reports for LR-C should be sent to:

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- 11620 INDIA AIR; 2100, 2200 EE, nx, poor, (Zilmer 5-27, Troy 5-20)
- 11643 ISRAEL IBA; 1930-2204\* HH, sometimes in USB mose inadvertently, tlks, mx, //9495, 15535, fair-weak, 0345 RR, class mx, tlk, poor-jammed (Earhart 5-16, Zilmer 5-25, Magne, Duke 6-6)
- 11672 PAKISTAN R Pakistan; 1837 string and accordian mx, some vocals, anmts and ID at 1859 in Urdu, anthem and off, poor, 1240 EE news and ID, good (Cress 6-3, Alder)
- 11680 ENGLAND BBC; 0500-0545 NF, // w/Cyprus 11740, (Padula 6-1)
- 11685 SAUDI ARABIA BSKSA Riyadh; 0505 call to prayer then into TT, via long path, (Padula-Australia 6-1)
- 11685 CHINA RP; 1200 EE, fair (Hauser 5-28)
- 11700: GERMANY (DR) RBI; 1210-1245 AA, talk and orch mx, poor (Earhart 6-8)
- 11700 DOM REP R Clarin; 2325-2340, 0230, 0145, 0000, SS, IDs, ID in EE, ads, songs, sports events, sometimes irr due tx trouble, fair-excellent, sometimes QRMed by USSR jammer on IBA \*0245, (Earhart, Wegener, Troy, Brunner, Hauser)
- 11700 ISRAEL IBA; 1400 Yiddish, jammed, 2030 EE nx magazine, fair, //12025, 15485 both exc., 9815, 15240 fair, (Walla 6-3, Cosier-Australia)
- 11700 VATICAN VR; 1707 EE, rel tlk, 1715\*, 2100 PP rel nx, to 2114 then IS and EE tlk aht radio-TV then EE, ID, IS and into FF at 2130, fair-good (Miller 6-7, Cress 5-30)
- 11705 SWEDEN RS; 2300, 0230, 0330-0358 EE, 0305 SS to LA, nx, mx, IDs, IS, good (Zilmer, Hauser, Padula, Troy)
- 11705 JAPAN NHK; 1130\* EE, ID, not listed this time, fair (Zilmer 5-31)
- 11710 ARGENTINA RAE; \*2300 EE to ECNA, ID, sched, argentine mx, refers to 2300 as 11 PM GMT, ID at 2335, (Wegener 6-5, Eichenhorn). Good to hear from you again Sandy.
- 11710 USSR Vladivostok; \*1430-1700 VV, usually quite strong signal, less fade than Irkutsk on 11890, (Davis)
- 11710 NEW CALEDONIA R Noumea; 0508-0530 FF, old US jazz, pops, rock vocals, ID, //7170 poor to fair (Cress 6-1)
- 11713 CHINA RP; \*1300 RR, unjammed, probably a drift (Willis-Australia 5-10)
- 11715 SWITZERLAND SBC; 0140-0155, 0210 EE, IS, nx, cmntry, Sunday quiz, // 5965, 6135, 9725, (K Smith 6-1, Zilmer 5-31)
- 11715 EGYPT R Cairo; 0000-0045 PP to Brazil, this outlet seldom heard here (Padula 5-17)
- 11720 GERMANY (DR) RBI; 0445-0530, EE to Afr, NF ex 11785, (Padula-Australia 5-11)
- 11725 CUBA RHC; 0200 EE spotlight on LA px, good (Talbot 5-29)
- 11730 MALAGASY REP RN; 2000-2120 EE, nx, DX Juke Box, The World of Science, apparently no 15120, (K Smith 5-17)
- 11735 USSR R Kiev; 2201 IS, Ukr. px, stronger than RN, 0030-0100 EE/Ukr, to NA, //11720, 11800, 12000, good (Legge 6-8, Hauser 5-15)
- 11735 MOROCCO RTM; 1433-1450 Chanting mx, fair (Shingler 6-6)
- 11735 YUGOSLAVIA R Belgrade; \*0000 SS to LA, this outlet noted infrequently, (Padula 5-9)
- 11737.5 UNID; 0235, faint YW vocals, sounded mid-east, probable Asian, over the pole flutter quite pronounced, (Shaw 6-5). Good to hear from you Ed.
- 11740 CYPRUS BBC; \*0345 AA, mx, ID, poor (Mayer 5-27)
- 11745 SRI LANKA VoA Colombo; \*0100 EE, NF ex 11740, (Padula-Australia 5-18)
- 11745 USSR RM; 0630-0645 Hausa to Afr, NF, (Padula-Australia 5-7)
- 11750 USSR RM; 2330-2340 EE, Moscow over BBC, poor because both were strong, understanding impossible, (Earhart 5-11)
- 11750 AUSTRIA ORF; GG under BBC and RM at 1446, (Cosier-Australia). Three is a crowd.
- 11755 ROMANIA RB; 0300-0400 SS to LA, NF ex 11790, (Padula-Australia 5-31)
- 11770 MEXICO RMex; \*1315-1345 SS, SS mx, nx, IDs, (Tuchscherer 5-27)
- 11778 NEW ZEALAND RNZ; 0631-0641 EE, mx, tlk, freq double checked and measured, poor (Earhart 5-26)
- 11780 ENGLAND BBC; 0630-0645 Hungarian, NF ex 9690 xed SBC, (Padula 5-7)
- 11780 SWITZERLAND SBC; 0600-0645 FF to Africa, NF ex 11765 QRming BBC Hungarian svce, (Padula-Australia 5-7)
- 11780 FRANCE RFI; 0500-0530 FF variety show on top of BBC, //11730, 11735, 7135, (Padula and Willis-Australia)
- 11780 BRAZIL R Nac; A Voz do Brazil px in PP at 2200-2215 strong level via long path climbing over the BBC WS, (Padula-Australia 5-15)

- 11785.5 ALGERIA RTVA; 2228 AA, local mx, hetting Brazil, unreadable AA amnt, //11965, perhaps a move from 11715 where no station hrd, or 11810 blocked by others, poor (Hauser 5-29)
- 11785 BRAZIL R Guaiba; 0015, 0140 PP, rapid tlk and yelling, Musica del Guaiba px, pops and semipop, good to fair (Zilmer 6-2, Duke 6-7)
- 11785 SEYCHELLES FEBA; 0320-0330 Tamil to SEA, not often heard recently (Padula-Aust.)
- 11785 GERMANY (FR) DW; 1940-1953, Window of World px, mx of recapture of ship from Cambodia, very good (Brunner)
- 11790 ROMANIA RB; 1730-1740 EE to Afr, nx, poor-fair (Moritz 5-29)
- 11790 NETH ANT TWR; 0324-0330\* SS, tlk, hymn, ID, and off, not hrd since (Earhart 5-19)
- 11790 INDONESIA VoI Jakarta, Java; 1100-1200 EE, nx, cmntry, local mx, (Hauser 5-28, Wala 6-4, Zilmer 5-25); 0900 EE, excellent, (Willis-Australia, 0930 IDs as Suara Indonesia, //6095 (Cosier-Australia))
- 11790 VATICAN VR; special px to E Europe at 0515 in Unid lang, preceding normal Sunday Latin Mass at 0630, (Padula-Australia 6-1)
- 11800 USSR R Kiev; 0030-0100 EE/Ukr, to NA, bad QRM from RNE-C, (Legge 6-8)
- 11800 CANARY IS RNE; 0015-0035 US pops, then OM w/nx in SS, ID at 0043, good (Shingler)
- 11805 SPANISH SAHARA Radio Sahara; 1715-1807 AA, tlk, mx, many mentions of ELAaiun, may have been talking about impending independence (Moritz 6-1)
- 11805NF USSR RM; EE to Africa 2100-2130, //11970, (Padula-Australia 5-24)
- 11819 CHILE LVdeChile; 1220 EE, 1328-1345 SS then EE at 1332, tlks, anti-US cmntry (hey I thought they were on our side now), nx, poor (Tuchscherer 6-10, Zilmer)
- 11819NF JAPAN RAI; 0100-0120 EE, summer freq to NA, //9575, nx, mx, replaces 6010, 0155 II soccer match, ID, good-fair (Hauser 5-25, Schwartz 5-19, Zilmer 5-30)
- 11816 ALGERIA RTVA; 1930 AA chant, good, (Troy 4-1)
- 11815 NETH ANT TWR; 0050-0100 EE, rel tlk, hymns, orch mx, ID, rel nx, good (Earhart/ia, Hauser)
- 11815 POLAND RP; 0300-0355 EE, nx, mx, features, //11840, fair to good, (Padula-Australia, Hauser)
- 11825 VATICAN VR; 1345-1350 Class mx, 1350 OM EE ID, to 1405 M&W nx, good (Shingler 6-6)
- 11825 TAHITI RT; 0202-0215, 0300-0500, 0617-0625 FF, some Tahitian, local, FF mx, //15170, QRM from RFE Portugal, poor-excellent (Schwartz, Hauser, Wala, Green, Earhart, Shingler)
- 11825 TAIWAN BCC; 1310 Mandarin, tlk, songs, fair, better than the NA svce makes it, as sched, (Hauser 5-13)
- 11825 HOLLAND RN; 1030 EE, DX jukebox, fair (Zilmer)
- 11830 USSR KP&P; 0408 SS, nx, mixing with an open carrier after 0410, IS, ID at 0411, fair (Hauser 5-31); Far East Site unknown, CC svce hrd as early as 0330 and still going at 0605, usually weak (Davis)
- 11830 ETHIOPIA ETLF; 1816 lang, rel songs and tlk, ARO QRM, fair (Miller 6-1)
- 11835NF SWEDEN RS; \*1730 Swedish, not listed in latest sched, (Willis-Australia 5-26)
- 11835NF CANADA RCI; 0325-0335 SS, ID, QRM from HCJB, not sched, NF?, (Earhart 5-22)
- 11835NF ECUADOR HCJB; 0605-0615, 2115 GG, rel px, fair (Earhart 5-26, Schwartz 5-16); 0350 RCI in SS and HCJB in RR banging each other over the head, they apparently assume there will be little interference because of separate target areas, but here, head-on (Hauser 5-19)
- 11835 SUDAN R Omdurman; 2155-2200 AA, cmntry, (Padula-Australia 5-15)
- 11835 URUGUAY R El Espectador; 2355 bits of mx in QRM, 0000 ID, SS tlk, nx in clear after 0000, fair (Cress 5-25)
- 11840NF GERMANY (DR) RBI; \*0330-0415 EE to NA, clear after Poland off, NF ex 5955, anced //11970 not hrd, 11840, 9560 not hrd, into GG at 0415, good (Padula and Willis-Australia, Wala, Hauser)
- 11840 PORTUGAL RP; noted here in EE at 0232 on 5-18 only, nominally on 11935 where hrd some other days, good (Hauser)
- 11840 POLAND PR; \*0000 Polish, IS, ID, nx, mx, M&W annncrs, good (Anderson 5-12); 0232 EE into Polish, IDs, Polish mx, fair (Wala 6-1); 0309-0330 EE, //11815 weaker, fair (Hauser 5-25, Padula-Australia 5-31)
- 11845 VATICAN VR; 0055-0105 SS/EE, tlk on education, fair (Earhart 5-19)
- 11845 FRANCE RFI; 1045 FF, tlk, mx, poor (Zilmer 5-28)
- 11850NF USSR RM; \*0345 Swahili, (Willis-Australia 5-11) (Padula-A)
- 11850 BELGIUM RTB; 0610 FR, ID 0614 then IS, then off, Interesting long path signal, /
- 11850 GERMANY (FR) DW; 1715 EE, IS, ID, nx, cmntry to Africa, poor (Anderson 5-19)
- 11855 PHILIPPINES FEBC; 1100-1130 EE, rel px, into JJ at 1130, (Hauser 5-28, Zilmer 6-7)
- 11855 SAUDI ARABIA BSKSA; 1650-1700 Swahili tlk, 1700 EE ID, nx, YW annrcr, poor (Mayer)
- 11860 NORWAY R Norway; 0000 NN, band mx, cheering, 0100-0115 NN to EQNA, NF ex 9550, good, 0155-0208 NN, tlk, some pops, //9645, fair, 0615-0631\*, NN, mx, tlk, EE IDs, (Shingler 6-8, Troy 5-17, Padula-Australia 5-14, Earhart 5-30)
- 11865 MALTA DW; 0135-0155 EE, tlks abt West German politics, nx, Malta ID at 0150, fair (Jones 5-21, Earhart 5-30)
- 11870 LITHUANIAN SSR RM via Kaunas; \*2300-0300\* EE NA svce, good, QSL confirms, (Legge)
- 11870 USSR RM; 0005-0030\* EE, nx, //11750 over BBC, 11770, (Earhart 5-19)
- 11870 SWITZERLAND SBC; 2115 EE, Dateline to Africa, poor (Zilmer 6-5)
- 11870NF NORWAY R Norway; 0345-0400 NN, folk mx, //11860, 9645, (Mayer 5-31)
- 11875 JAPAN NHK; \*1115 EE to Asia, nx, good to poor (Wala 6-4, Zilmer 5-31)
- 11877 BRAZIL R Soc da Bahia; 0150-0210 PP, M&W tlk and mx, IDs, fair (Earhart 5-26)
- 11880 USSR Irkutsk RS Pacific Ocean; px now here \*1430-1530\* RR, Wed, Fri, Sat, and Sun,

- weak, some polar fade, (Davis)
- 11880 TURKEY VoT; 2247-2300, 2355-0005 EE, mx, nx, cmntry, fair to strong (Troy 5-29, Earhart 5-18); 0119 EE, extending tx to give a navigational warning in the Aegean Sea, hets (Hauser 5-24); 0350 IS, 0356 Anthem, Turkish ID, mx, good (Wala 6-1)
- 11890 ECUADOR HCJB; 0100-0130 SS to SA, ex 11960, hrd up to 4 May on 11895, dont know if actually used 11960, (Padula-Australia 5-14)
- 11890 GERMANY (DR) RBI; 0330 EE, ID, program preview, to 0415 in EE, 0415-0500 GG, ex 6080, (Eichenhorn 6-1, Padula and Willis-Australia 5-11, Hauser 5-25)
- 11890 USSR Irkutsk RM; \*1530-1700\* VV, 1700-1800\* CC, usually weak signal, some polar fade, CC often jammed (Davis)
- 11900 SOUTH AFRICA R RSA; 0649-0658 EE, program sched, mx, fair (Earhart 5-25)
- 11905NF FRANCE RFI 1757-1815 FF, IS, ID, martial mx, nx, (Tuchscherer 6-6)
- 11905NF USA KGEI; 0124 SS, strong //15280 (Hauser 5-24)
- 11910 HUNGARY RB; 0200-0215 EE, nx followed by DX px, QRM HCJB, fair-poor (Eichenhorn, K. Smith 5-26); HUNGARY AND ECUADOR about equal strength both to NA, Hungarian and EE at 0230, (Hauser 5-18)
- 11910 ECUADOR HCJB; 0230-0300 EE, DX Partyline, sched sez 11915, but anncr sez 11910 which it is on burying Budapest, good (Wala 6-5, K. Smith 6-3, Talbot 5-29); 1222-1235 SS, Andean mx, nx, fading in and out poor (Earhart 5-20); 0500 noted in an incredible service, Inuit (Eskimo) beamed to the S. Pacific, sched Wed, Fri, Sun GMT, (Hauser 5-28). Incredible indeed. If I was an Eskimo I would move to Tahiti too--ed.
- 11915NF PORTUGAL RCI Relay Sines; \*1430 RR, ex 7245, well heard (Padula-Australia 5-10)
- 11920 IVORY COAST RTVI; 2330 FF, Afro mx, 0639-0649 FF, tlk, string mx and mx w/drums and bells, short chorus, fair to good (Troy, Earhart 5-25)
- 11920 GERMANY (DR) RBI; 0400 EE, NA svce, very distorted, unannncd freq, //11890, 11840 probably spurious (Hauser 5-25)
- 11925 SPAIN RNE; 0100 EE, 0321 EE to NA, nx, address, ID, good-fair (Green 6-2, Zilmer )
- 11925 BRAZIL R Bandeirantes; 0230 PP, mx, some EE records, ads, tlk, fair (Zilmer 5-26)
- 11925 RWANDA DW; 2345-2355 GG, tlk, some pops, fair (Earhart 5-18)
- 11930NF SPAIN RNE; 2200-0000 SS, new tx to high seas, //9630 good (Legge 6-4)
- 11935 PORTUGAL RP; 0237-0240 EE, propaganda, rept of Port. Navy visit to Dar es Salaam, good (Schwartz 5-28, Hauser 5-24, see 11840)
- 11935NF ENGLAND RCI Relay Daventry; 1430 RR, ex 7225, //11915 Sines, (Padula-Australia 5-10)
- 11940 ROMANIA RB; \*0400 EE to NA, nx, poor (Wala 6-1)
- 11940 CANADA RCI; 0100-0130 EE, nx, features, //9650, 6085, good (K. Smith 5-27, Talbot)
- 11940 KUWAIT RK; 1730-1900 EE, IDs, pops, nx, wx, fair-good (Moritz 5-29, Anderson 5-12, Troy 5-28, Schwartz 5-18)
- 11945NF GERMANY (FR) DW; 0120-0220 EE to S Asia, (Padula-Australia 5-14)
- 11945NF ETHIOPIA ETLF; \*1345 Telugu, excellent, (Willis-Australia 5-20)
- 11950 BRAZIL R Min da Eucacao; 0155, 0253-0300\*, PP, mx, clear ID, classical guitar solo then off, fair (Zilmer 5-20, Earhart 5-26) 5-4
- 11950 LIBERIA ELWA; 2030-2042 EE to W&C Africa, rel px, ID at 2041, very good (Brunner/
- 11955NF SWEDEN RS; 0100 Swedish, 0130-0200 SS to LA, NF&NS, (Padula-Australia 5-14)
- 11955 CYPRUS BBC Relay; 0300 WS nx in EE, good, (Wala 6-1)
- 11960 ISRAEL IBA; \*0245 RR, nx, //12025, 9815, 9009, all good despite jamming (Wala 6-1)
- 11970 TUNISIA RTVT; 1430-1440, AA, AA mx, ID at 1430 by OM, fair (Mayer 5-25); 1930 AA chants, good //15225 weak, (Troy )
- 11970 GERMANY (DR) RBI; 0415-0500 GG to NA, (Padula-Australia 5-11)
- 11980 USSR RM; 2200-2300 PP, //9800, 9810, 11930, 12030, fair (Legge 6-8); 2334-2342 SS, tlks, mx, // 11960, fair (Earhart 5-18); 0015 EE, nx, mx, good, (T. Smith 5-27)
- 11990 CZECHOSLOVAKIA RP; 0130 EE, cmntry, pops, to NA, 0105 nx, features, to 0154\*, good to poor (Jones 5-21, Moritz 6-1, Eichenhorn 5-13); 1630 AA to Africa, nx, chants, fair (Green 6-6)
- 11995 UNID; 0400-0415 AA, AA chants, mx, good (Mayer 6-1). WRTH lists only Moscow--ed.
- 12000 USSR R Vilnius; 0030-0100 EE for Americas, N&W tlk, nx; IDs, good (Troy 5-17); R Kiev; 2200-2300 EE/Ukr, to NA, //11720, 11735, 11750, good (Legge 6-8); RM; 2300 0030, 0100-0500 EE to NA, good, DX px abt home-made ham equipment, replacing 11970 which was QRMed, (Legge, Hauser 5-29, Eichenhorn 5-27)
- 12005 EGYPT R Cairo; 1905 AA, martial AA mx, amnts, fair (Schwartz 5-18)
- 12025 ISRAEL IBA; \*2000-2050\* EE, nx, features, IDs, EE also at 1030 and 0400, 1905 RR, nx, cmntry, ID, \*2200-2255\* FF, NF this service, //9815, 0328 RR, tlks, ID, poor, 0530 RR, strong over jamming, poor to good (Schwartz 6 times, K. Smith, Brunner, Magne, Duke, Zilmer, Cosier-Australia, Wala, Troy, wow)
- 12050 USSR RM; 2300-2330 EE, nx, cmntry, and DX program, (K. Smith 5-29)
- 12060NF USSR R Kiev; 0325 EE, //12050, but at 0330 split into Kiev Ukrainian px, (Hauser 6-3); RM; 2330-0200 SS to Cuba //9470, 9745, 11900, 11950, good (Legge 6-8)
- 12070 USSR RM; 2100-2200 EE, to Africa, //12055, (Legge 6-6); USSR RM in EE and N KOREA in SS hetting each other at 0400, (Hauser 5-24)
- 12080a CLAND R Euzkadi; 2000 SS, IS, IDs, political tlk by several persons, poor-fair and jammed, (Wegner 5-31) 6-3
- 12139 ROMANIA CLAND R Espana Indep; 1910 SS, //10110, jammed here, px summary, (Hauser/
- 15012 N VIETNAM VoV; 1200 Lang, tlk, mx, poor (Zilmer 5-31)
- 15030h UNID, possible R. Surcolombiana; 2205-2200 SS, faint, presume 3x5010, SS pops, possible Colombian ads, poor (Magne)

- 15060 CHINA RP; 2357-0030, 0145, 0220-0230, EE, nx, cmntry, and CC mx, poor-good (Schwartz, Cress); 1112-1115\* CC mx, IS, Internationale, poor (Schwartz 5-23)
- 15080 CHINA RP; 0158 SS, cmntry, ID, good (Schwartz 6-7)
- 15084 IRAN R Teheran; 0150, 0306-0330, 1900-1935 Farsi, Iranian mx, tlks, (Hauser, Schwartz, Wegener)
- 15095 CHINA RP; 0145 IS, 0155 CC opera, poor-fair, (Schwartz 5-23, 6-7)
- 15100 ISRAEL IBA; 2145-2155, \*2100 RR, tlks, //15485, usually jammed, (Earhart 5-20, Zilmer 5-25, Schwartz 5-11)
- 15105 JAPAN NHK; \*0300 EE, nx, current affairs, fair (Jones 5-20)
- 15110 HOLLAND RN; 1045 EE, DX Jukebox, poor (Zilmer 5-29)
- 15110NF PAKISTAN R Pakistan; 1100 Dictation nx, good (Cosier-Australia)
- 15110 NEW ZEALAND RNZ; 0304-0330 EE, weather, pops, comedy, soccer, excellent to poor in QRM from R Seis, //15280 good (Zilmer 6-7, Wala 6-1, Earhart 5-22)
- 15110 MEXICO R Seis; 0005-0009 SS, taking requests, fast mx, (Moritz 5-26); 15115 reported, 1745, requests, ads, good (Anderson 6-1)
- 15115 ECUADOR HCJB; 1245 EE, 1400-1430 EE, features and rel px, 0000-0100 SS to CA, NF this time, (Talbot, Padula-Australia, Green)
- 15120 POLAND PR; 0320 EE to NA finally audible 5-31, Polish at 0350 check, poor to fair, (Hauser)
- 15120 VATICAN VR; 1700 EE, rel nx, 2020-2030 EE, tlk about drugs, IS, ID, fair (Zilmer 5-31, Troy)
- 15120 FRANCE RFI; 1700-1800 EE, Paris calling Africa, good, //15165 (Green 6-3)
- 15125 TAIWAN BCC; 0305 EE nx abt Taipei, fair until interrupted for 1 min by very strong class mx at 0314 (XERMX?) (Hauser 6-3)
- 15125 PORTUGAL RP; 1545-1631 PP, non-stop "Musak" type mx, ID, and only tlk hrd at 1631, fair (Mayer 5-24)
- 15125NF GERMANY (DR) RBI; 1125 IS, \*1130, NF, (Magne); 1245-1330 GG, EE at 1400, (Willis-Australia 5-28)
- 15125 ISRAEL IBA; \*1030-1100 EE, 1100-1130 FF, //15485, nx, wx, ads, to NA w/high power, but too early for good propagation to NA, fair (Magne, Zilmer 6-10)
- 15130 USSR R Yerevan; \*0300 Armenian, 0324 EE, 0330\*, NF, //15180, (Padula-Australia 6-1)
- 15135 BRAZIL R Record; 0130 PP, tlk, mx, ads, jingles, fair (Zilmer 5-20)
- 15140 SWITZERLAND SBC; 1310-1334 EE, IS, ID, nx, fair (Mayer 5-24, Eichenhorn 5-11)
- 15140 FRANCE RFI; 1700-1800 EE, Paris calling Africa, request, nx, mx, features, good, //15150, 15160, good (Green 6-3, Alder 6-4)
- 15140 BRAZIL R Nac; \*2300 following IS, Anthem, nx in PP, excellent (Cress 6-4) 6-4
- 15145 SPAIN RNE; \*2300 after several min of IS, Anthem, SS nx, //11775, excellent (Cress/
- 15150 CHILE LV de Chile; 2330 AA, 0105 FF, 0006 GG, 0135 SS, 2350 SS/RR, 2308 EE, 0021 SS, 2310 AA into RR, 0315 EE, nx, cmntry, mx, IDs, fair-poor, trans-equatorial flutter at 0315, (Schwartz, Padula-Australia, Cress)
- 15150 USSR RM; 1425-1445 RR, RR Orch mx & Ballade, tlk, possible Asian tx location, 1116-1120 RR, vibraphone mx, fair (Earhart 6-7, Schwartz 5-23)
- 15155NF GERMANY (DR) RBI; \*0515-0615\*, ID at 0610, freqs mentioned, (Willis-Aust. 5-30)
- 15155 FRANCE RFI; 1630 FF, nx, mx px, good (Eichenhorn 5-11)
- 15160 FRANCE RFI; 1630 FF, //15155, 1745 EE, letters from Africa, good (Eichenhorn 5-11)
- 15160 AUSTRALIA RA; 0315-0335 EE, Internationale top 40, class orch mx, //15240, fair (Zilmer 6-7, Earhart 5-21)
- 15165 DENMARK R Denmark; \*1600 IS, IDs in Danish and EE, Danish px to NA, 1725 IS, \*1729 in EE/Danish into Danish px to Greenland, 1100 Danish to Greenland, poor-fair, (Wala, Wegener 6-5, Padula-Australia 6-1)
- 15170 TAHITI RT; \*0300 Whistle, Banjo, ID and px in Tahitian w/US pops, 0500 FF, 0017 FF, ID, anmts, 1905-1908 EE nx, wx, also hrd 0250-0325, 0140, 2354, in FF, poor to excellent (Green, Schwartz, Hauser, Zilmer, Moritz)
- 15175 SOUTH AFRICA R RSA; 1522 African style pops, ID, fair, 1620 EE, tlk abt S Afr. expulsion form International Tennis Organization, fair (Jones 5-17, Schwartz 5-11)
- 15175 CANADA RCI; \*1115 EE, nx to Carib, fair (Zilmer 6-8)
- 15175 NORWAY R Norway; 0020-0030, 2302, 1445 IS, NN tlk at 1450 for 3 min then IS until 1500 s/on w/EE ID, into NN px, all NN tlks, mx, fair to good (Schwartz, Padula-Australia, Cress); 2200 EE nx, poor (Zilmer 6-8)
- 15180 USSR R Yerevan; \*0300 Armenian nx, mx, 5 min EE review of px at 0322, good (Wala)
- 15185 SRI LANKA VoA; \*0100 EE, (Hauser 5-24)
- 15185 FINLAND RF; 2302 playing fill mx and anmt that free-lance English writers are on strike, same on 6-10, (Hauser 6-3); 1400 EE to NA, nx, flk mx, anmt of temporary suspension of EE service on 6-7, (Eichenhorn, Earhart)
- 15190 CONGO RIVC; 1120-1132 FF, nx, ID at 1124, Afro and FF mx, unusual this time, poor to fair (Schwartz 5-23)
- 15190 HOLLAND RN; 1645 EE, nx, spotlight, fair (Zilmer 5-27)
- 15190NF ENGLAND BBC; \*1345 Hausa, a mess this channel, (Willis-Australia 5-26)
- 15200NF FRANCE RFI; 1600-1700 FF, 1700-1800 EE, 1800-1900 FF, replaces 15140, usual px, (Hauser 5-23 //15210, Legge 6-10, Zilmer 6-5) 5-31
- 15200 VATICAN VR; 2310 PP to Brazil, infreq long path 19mb opening (Padula-Australia /
- 15200 USSR RFGP; 1530-1600 EE to Asia, fair-good, (Eichenhorn 5-31, Legge 6-8)
- 15205t ENGLAND BBC; 1200 EE, nx, //15070, fair (Zilmer 5-31)
- 15210NF FRANCE RFI; 1600-1700 FF, 1700-1800 EE, 1800-1900 FF, usual px, not listed in latest sched, (Willis-Australia 5-25, Legge 6-10, Zilmer 6-5)

- 15210 USSR RP&P; 1430-1500 EE to Asia, //15295, fair (Legge 6-10)
- 15220 HOLLAND RN Lopik; 1700 DD, sched to 1830 for Eu, poor here (Shaw 6-9)
- 15225 TUNISIA RTVT; 1958-2036 AA, 2130-2330 AA, chants and instrumentals, canned applause after each song, fair w/QRM from RHC and Bonaire, tlks, symphonic mx, (Wegener 6-4, Brunner)
- 15225 GERMANY (FR) DW; 1030-1100, NF, // listed 15425, NF not listed (Padula 6-1)
- 15230 USSR RM; 1500-1530 EE to S Asia, QRM from RHC, (Legge 6-10)
- 15230 AUSTRALIA VLH15; 0355-0400, EE, financial nx, fair, RHC QRM, almost nightly, (Mayer 5-21)
- 15235 ENGLAND BBC; 1000-1030 RR, Sun only, over NHK, (Padula 6-1)
- 15240 ISRAEL IBA; 1400 Yiddish under Sweden, (Cosier-Australia)
- 15240NF GERMANY (DR) RBI; \*0645 EE, mixing w/Australia, (Willis-Australia)
- 15240 SWEDEN RS; 1424-1429 EE, SCDXers w/mention of ANARC meeting, (Moritz 5-13)
- 15245 BRAZIL R Nac; 2000-2159 EE, 2100 GG, to Eu, mailbag, requests, fair-poor (Eichenhorn, Earhart, Hauser, Miller); 2220-2230 PP, A voz do Brasil px, NF ex 11780, (Padula-Australia 5-23)
- 15245 ZAIRE LV du Zaire; 0540 FF, Afro mx, (Cosier-Australia)
- 15250 ETHIOPIA ETLF; 0503 AA, tlk, Christian hymn, poor (Hauser 5-31)
- 15250 GERMANY RBI; 2000-2015 EE, tik abt N. Viet victory, good (Brunner)
- 15255 NETH ANT TWR; 0010-0020 SS w/full ID, rel mx, SS tlk, very poor (Moritz 5-26)
- 15260 HOLLAND RN Lopik; 2030 EE, rel mx px, good (Eichenhorn 5-25)
- 15260 USSR R S Atlantika; 1630-2130 RR, //15150, 15455, good (Legge 6-10); RM; 1000-1100 GG to Germany, NF, (Padula-Australia 6-1)
- 15260 GREECE VoA Kavala; 1528-1550 Hindi px, nx, tlk on Ford trip, wiped out by interference, (Moritz 5-29)
- 15270 ECUADOR HCJB; 2350-0008 SS/EE tlk to 0000 then organ mx, (Earhart 5-21); 2145 Quechua, 2000 SS, NF ex 17885, short path over Pacific, (Padula-Australia 5-11)
- 15273.2 URUGUAY SODRE; 2110 SS, useless signal, but threshold lvl mod presumed to be SODRE, pretty early for WCNA, hopeless against Malta 15275, (Shaw 6-8)
- 15275 GERMANY (FR) DW; 1704 GG, ID, nx, fair, 0600-0800 Afr Svce in various langs, NF ex 11795, good (Padula-Australia 5-11)
- 15280 NEW ZEALAND RNZ; 0330, 0220, 0338-0350 EE, Soccer, class mx, vocals fair-poor, (Zilmer 6-7, Schwartz 5-13, Earhart 5-21)
- 15280 USA KGEI; 0000 SS, mx, tlk, good, (Talbot 5-23)
- 15285NF GERMANY (DR) RBI; 1300 AA, ID, (Willis-Australia 5-15) 5-31
- 15285 CYPRUS BBC; 0315 EE, Big Ben, World Today, sched 0300-0330 only, fair (Hauser/)
- 15280 AUSTRALIA RA; \*0358 EE, to Africa, DXers calling, 0315-0330\* Mailbag px, //17820, fair-good (Eichenhorn, Wala, Hauser, Earhart)
- 15290 ARGENTINA R el Mundo; 0135 SS, sports, ID, poor, fading (Mayer-5-17)
- 15300NF JAPAN NHK; 0045\*, ID, EE, fair (Schwartz)
- 15300 FRANCE RFI; 1500 EE, Paris Calling Africa, fair (Zilmer 6-5)
- 15305 SWITZERLAND SBC; 0025 FF, 0105 SS, good (Hauser 5-13)
- 15305NF AUSTRIA ORF; \*1500 GG, ex 15155, (Willis and Cosier-Australia 5-20)
- 15310 MALAYSIA BBC; 1200 EE, nx, (Zilmer 5-25)
- 15310 BULGARIA RS; 2105-2130 EE to Africa, //17825, fair (Legge 6-1)
- 15310 SWEDEN RS; 1230, 1252 EE nx, under BBC FES, fair-good (Eichenhorn, Cosier-Aust)
- 15315NF SWEDEN RS; moved here since late May to avoid BBC, 1230-1300 EE, 1330-1500 EE/FF/Swedish, QRM here from RFI, usual px, (Cosier, Willis-Australia, Legge 6-1, Zilmer 6-1, Hauser 5-23, Miller 6-8)
- 15315 FRANCE RFI; 1600-1644 FF, //15155, 15300, fair (Willis-Australia 5-26, Zilmer 5-31)
- 15320 AUSTRALIA RA; 0020 FF, US pops, ID, IS, after Bonaire off, fair (Miller 6-7); 0122-0125\*, 0200-0210 EE, nx, ID, DX px, fair-good (Brunner, Schwartz 5-26, Alder 5-7); \*0430 FF, ID, nx, mx, good but fading, (Green 6-8)
- 15320NF GERMANY (DR) RBI; 1230 EE, listeners letters, poor (Zilmer 6-8)
- 15323.5 PAKISTAN RP; 0335 Swahili, mx, poor but better during IS at 0455, down from 15324.5 reported before, //17830, (Hauser 5-31) .16
- 15325 PAKISTAN RP; 0345 EE GOS, nx, ID, into lang at 0345, //17830 fair, poor (Mayer 5/)
- 15335NF SOUTH KOREA RK; \*1430-1455\* EE, \*0500-0525\* EE, //9640 often better for 1430, rarely hrd at 0500, (Davis); 0520 EE, 0530 KK, 0535 RAI QRM, off at 0600, poor, finally hrd 6-8 of this replacement of 11925, (Hauser); 0830-0900 KK, 0900 EE, (Padula-Australia 5-9)
- 15335 AUSTRIA ORF; 1656 IS, 1700 GG to Africa, \*1830 EE, nx and views, good-poor (Wala 6-1, Zilmer 6-6)
- 15335 EGYPT R Cairo; 0100-0115 SS to LA, still hrd via long path, (Padula-Australia 6-1)
- 15340 PORTUGAL RP; 2048 PP, mx px, no ID hrd, good (Eichenhorn)
- 15345 NORWAY R Norway; 2125 NN to W&S Africa, NF ex 9550, (Padula-Australia 5-12); 1510-1530 NN, rel px, sermon, mx, //15175, fair (Schwartz 5-18)
- 15345 ARGENTINA R Nac; 1440 SS, symphony mx, 1515-1600, mid-day concert of class mx, usually very good signal in CA, poor in OH (Davis, Miller 6-1)
- 15350t ZAIRE LV du Zaire; 2200 FF, Afro mx, tlk, poor (Zilmer 6-4)
- 15350t ENGLAND BBC; 1335, 1600 EE, nx, unlisted presume England, //15070, 15365, 15400, poor (Zilmer 5-31, Willis-Australia 5-30)
- 15350 LUXEMBOURG RL; 1625-1630 FF, ID, FF pops, fair (Schwartz 5-11)
- 15350 CHINA RP; 1000 RR, a mess when jammer comes on, (Willis-Australia 5-15)
- 15350 USSR RM; 0422 tone test, 0430 IS, open in Swahili, good, //15405, (Hauser 5-27)

- 15355 AUSTRALIA RA; 0510 EE, nx, poor (Eichenhorn 5-16)  
 15355NF INDIA AIR; \*0630-0633\* EE nx, ex 15365, (Cosier-Australia)  
 15360 CHINA RP; \*0200-0255\* SS, to LA, //15385 usually stronger (Davis)  
 15360 FRANCE RFI; 1700 EE, Paris Calling Africa, poor (Zilmer 6-5)  
 15365 FRANCE RFI; \*0600-2030\* now here ex 15360, (Willis-Australia). See above.  
 15365 ETHIOPIA ETLF; 1915 EE, ID, then FF px, very good (Brunner)  
 15385 CHINA RP1 \*0200-0255\* SS, 0300-0355\* EE, \*0400-0455\* EE, often fair, (Davis)5-10)  
 15390 ENGLAND BBC; 1000-1030 Hungarian, ex 15180, also EE by Radio 0530-0545, (Padula/  
 15390 SWEDEN RS; 1300-1400 Swedish/FF, to LA, ex 15195, fair (Legge 6-1)  
 15400 USSR HS First px; 0457 piano mx, pause, 0500 TC, ID, nx in RR, poor (Hauser 5-31)  
 15405NF ISRAEL IBA; 2000 EE nx, 2205 FF, better than //15240, fair (Willis, Hauser 5-30)  
 15405 USSR RM; 0430 Swahili, //15350, (Hauser 5-27)  
 15410 RWANDA DW; 2316 GG, nx, good (Eichenhorn 5-6)  
 15410 GERMANY (FR) DW; 1220-1245\* EE, nx, t/k, to W. Africa, fair (Zilmer 6-6)  
 15410 AUSTRIA ORF; 0557 IS, anmts in GG, poor (Hauser 6-8)  
 15420 CYPRUS BBC; 1300 EE, world nx, poor (Zilmer 6-8)  
 15420NF JAPAN NHK; 0155 EE, discourse on Jap wines, unlisted, poor (Shaw 6-8)  
 15425 USSR RM; 1330-1400 EE to Africa, sched relay by Sierra Leone BS at 1700, (Hauser)  
 15425 FRANCE RFI; 1700 EE, Paris Calling Africa, fair (Zilmer 5-31)  
 15425 AUSTRALIA VLW-15; 0520 EE, cmntry, ID, fair (Eichenhorn 5-16)  
 15435 AUSTRIA ORF; 2135 SS, nx, mx, very good, (Eichenhorn 5-23)  
 15445 BRAZIL R Nac Brasilia; 0257 PP, time ticks and 3 pips at minute, to 0300 when TC  
 15445 for midnight and ID, then said it was opening an experimental all-night px to  
 5 AM in // Rio on 6065, 9665m 11720, and 15445, also AM & FM, but this freq  
 promptly went off air, (Hauser 5-26)  
 15465NF ISRAEL IBA; 1030 EE to A/NZ, //15125, 15484, ex 12025, weak to good (Willis, Magne)  
 15485 ISRAEL IBA; 2000-2055\* EE, 2100, 0530 RR, ID, mx, nx, (Eichenhorn, Moritz, Cosier-  
 since 6-5, Magne)  
 15512NF ISRAEL IBA; 1100-2205\* HH, HS, t/k, pops, nx, ads, poor-fair (Duke, Zilmer, Hauser/  
 15520 PAKISTAN RP; \*1530-1545 EE, dictation mx, abrupt off, poor (Zilmer 5-31)  
 15526.6 PAKISTAN RP; 0200 EE nx, World svce, NF, (Cosier-Australia)  
 15535 ISRAEL IBA; 1610-1620, 2015, 2140 HH HS, pops, nx, Israeli mx, replaced by 15512,  
 fair-poor (Zilmer 5-23, Mayer 5-24, Eichenhorn 5-11) but on AM, (Hauser 5-12)  
 15540 SPAIN RNE; 1957 IS, TC, service in SS to Americas, possible feeder to Canarias?  
 17650t CHINA RP; 0446 CC, oriental mx, some t/k, RP presumed, fair (Meehan 5-13)  
 17665NF PAKISTAN RP; 1100 EE slow nx, (Cosier-Australia)  
 17688 ISRAEL IBA; 0307 RR barely audible under grind jammer w/ID of KL, 1950-1954\* RR,  
 t/k, nx, 1400 Yiddish, over jammer, RR at 1430, (Hauser 5-31, Duke 5-11, Cosier)  
 17715 NORWAY R Norway; 0500-0630 NN, (Padula-Australia 5-15)  
 17715NF ECUADOR HCJB; moved here by 5-26, 1930 EE to Eu, DX partyline, (Hauser)  
 17720 USA WINB; 1739 EE, rel t/k, nx, under RFI, poor (Miller 6-1)  
 17720 FRANCE RFI; 1320-1335 FF, 1735 EE, usual px, fair-poor (Zilmer 5-31, Earhart 6-7)  
 17725 UNID; 2136-2138\* Strong sig w/callope type mx, (Earhart 6-3)  
 17725 EGYPT R Cairo; 1540 EE, nx, poor (Jones 6-7)  
 17730 MALAGASY REP RTM; 1600\* EE, gave address and off w/NA, poor (Jones 5-17)  
 17735 CHINA RP; 0305 EE to NA, stronger than //17855, or 15385, (Hauser 5-31) Meehan)  
 17740 AUSTRALIA RA 0112 EE, US pops, 0315 EE Stock rept, //17715, poor-fair (Schwartz/  
 17740NF AUSTRIA ORF; 1250 EE, to Aust/NZ, (Cosier-Australia)  
 17745 USSR RM Frunze possible; 0525 EE, cmntry to Africa, 0530 IS into PP, (Hauser 5-16)  
 17755 SAUDI ARABIA BSKSA; 1426-1500 AA, mx, chants, play or drama by M&W, (Moritz 5-11)  
 17770NF SWEDEN RS; 1430 Swedish, (Cosier-Australia)  
 17780 S AFRICA R RSA; 0511-0605 FF to Africa, ex 9525, good (Padula-Australia)  
 17795 AUSTRALIA RA; 0117 EE DX px, 0210-0235 EE, pops, good (Schwartz 5-26, Moritz 5-28)  
 17800 NORWAY RN; 1352-1403 NN, t/k, Louis Armstrong mx, poor (Earhart 6-7)  
 17815NF ISRAEL IBA; \*0530-0600 RR, Sat and Sun only, jammed (Padula, Willis, Cosier)  
 17820 MALTA RCI relay; IS barely hrd 0557 on 5-25, RCI dropped Malta relays 5-29, (Hauser)  
 17820 FRANCE RFI; 1700 EE, Paris Calling Africa, poor (Zilmer 5-31)  
 17830 PAKISTAN RP; 0520 Urdu, sub-cont mx, fluttery, unusual opening (Hauser 5-16)  
 17830 SWITZERLAND SBC; 2350 PP to Braz, unusual long path (Padula 5-31)  
 17860 INDIA AIR; 1130-1140\* EE, regional nx, unlisted, (Cosier-Australia)  
 17865 ASCENSION IS BBC; \*1414 PP to Afr, nx, mx, good, //15105, (Green 6-8); tent 0245-  
 0300 EE, mentions of Rhodesia, not quite like BBC, poor-good, (Shaw 6-3)  
 17890 TAIWAN BCC; 0235 EE, good ID by YW, CC vocals and rock mx, fair (Shaw 6-3)  
 17920 EGYPT R Cairo; 1412-1425 EE to S Asia, t/k on chickens, (Moritz 5-11)  
 21520 SWITZERLAND SBC; 1625-1635 GG/FF, t/k, ID, mx, poor (Earhart 5-25)  
 21535 S AFRICA R RSA; 1259 EE, 1335-1345 EE, only one on band, ID, nx, (Jones, Earhart)  
 21545 GHANA RG; 1415 PP, rel and native mx, readings by YW, poor (Miller 5-25)  
 21580NF USA WINB; 1700 ID, rel px, 1730 mailbag, rotten sig, sched 1600-1745, (Hauser 6-1)  
 21710 ENGLAND BBC; 1555-1600 EE, t/k, abt US-Cambodian confrontation, (Brunner)  
 21725NF USSR RP&P; 1030-1100, strong when band is open, otherwise nothing, (Padula-Aust.)  
 21730 NORWAY RN; 1404 EE, nx read by M&W, poor (Miller 5-25) Not much room left, thanks  
 for ALL these reports. Solar flux peaked May 30 and should have again abt. June 27, geo-  
 mag activity peaked June 1 and abt June 16, again abt June 30. 73, Jerry A. Lineback  
 For sale: one of the last HQ-180As, superb cond. Price \$270.00, I ship. Write soon,  
 Oscar Crary 1025 S. Oak Ave., Onalaska, WI 54650.

LONG DELAYED ECHO'S

by Gerry E. Wood

Gerry E. Wood, DX Editor for Radio RSA writes to say that an old NASWA article was the basis of the subject for his DX CORNER program broadcast June 18, 1975. He was kind enough to send a copy of his original script covering this interesting subject, so we quote from that script as follows:

Hello my friends. In the mail recently I received an Anniversary magazine from Tom Gavras of the Minnesota DX Club. This club is two years old and is still looking for members from the Minnesota area.

There in was an article in the anniversary bulletin entitled "Long Delayed Echo's" and was a reprint of an article by Cal Cornils which appeared in FRENEX of the North American Shortwave Association in July of 1969.

This article starts off in this manner. "Anyone who does serious listening in the three to thirty Mhz range is aware that some signals are accompanied by a distinct echo. But, and here's the interesting bit, have you ever heard a station echo a full 30 seconds after the original signal?"

The article goes on to say that there have been reports as far back as 1928 of echoes heard with delays ranging from 2 to 30 seconds. There is no real offer on an explanation in the article except to suggest the possibility of a signal becoming trapped in the ionosphere and travelling around the world numerous time before being attenuated back to earth. This is of course quite ridiculous but the article offers no other explanation.

What the article does do is discuss explanations of echos occurring split seconds after the original signal. One reason for echos is when disturbance in the ionosphere causes scattering of the signal and the listener receives the signal from two different reflection points. The listener hears a distinct echo like double talk but the interval is only a matter of microseconds

The second cause of echo is when one receives the signal from two different directions at once. That is the signal leaves the transmitter and travels around the world in different directions. One is the short path to your receiver and the other is a long path. Naturally the long path takes a little longer and so causes the echo effect.

The third cause is when the signal passes your antenna and you pick it up but then it goes right around the world a second time and you pick it up again one seventh of a second later. This also produces a very distinct echo.

But let's return to the puzzle of long delayed echos of 2 to 30 seconds. Well, I can offer one explanation but doubt if it applies as far back as 1928. Many of the international broadcasters have relay stations in countries abroad and often broadcast the same programme on the same frequency from these different locations. The Voice of America and Radio Nederlands are two followers of this practice.

Now the relaying station obtains the transmission in one of three ways. Firstly the tape is sent to them for them to broadcast on a particular date and time, or they record a single side band transmission from the home station for later relaying, or they listen to the actual broadcast from the home station and relay it a few seconds later.

I think you will begin to see already how those long delayed echos can take place.

If the relay station puts on a tape to relay a programme at the same time as the home station on the same frequency, it would be practically impossible to match the transmissions to a split second. In fact when I have heard Lopik and Madagascar transmitting the same programme on 6020 kHz, more often than not there is a two or three second difference in transmission times. This delay has been noted as long as ten seconds and could well have been 30 seconds on occasion.

Now if the home station is broadcasting on say 19 metres for long distance transmissions and on 49 metres for short distance transmitting, and the relay station is receiving 19 metres for re-broadcasting locally on the same frequency in the 49 metre band, then you can expect a delay of up to a couple of seconds if you can hear both transmitters.

So there are two explanations of long delayed echos. I know that a radio station in England used to relay KDKA shortwave broadcasts from America as far back as 1923. Maybe even in those days the relay might have on occasion

LONG DELAYED ECHO'S (Continued)

been on the same frequency. And maybe this explanation is the one everyone has been looking for. But such a simple explanation won't appeal to those enthusiasts who have been looking for a more scientific solution.

I must place on record my thanks to the Minnesota DX Club and the North American Short Wave Association for raising this topic in their magazines. I hope they will print this script as a follow up to their original articles.

Gerry E. Wood

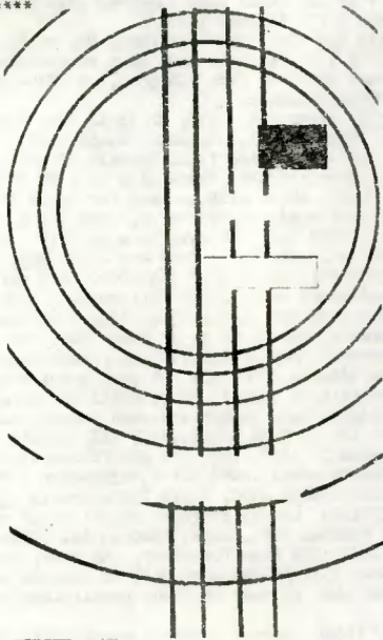
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**NEBRASKA DXers TO MEET:** DXers in the State of Nebraska are invited to attend the Summer get-together of the NEBRASKA DX ASSOCIATION on Sunday, July 13, from 1:30 to 5:30 PM CDT. The meeting will be held in the meeting room of the Union Savings and Loan Co., 56th and "O" Streets, Lincoln, Nebraska. Anyone with an interest in any form of DX is welcome to come. For further information, send an SASE to: Bob McCoy, 4105 Washington Street, Lincoln, Nebraska 68506.

\*\*\*\*\*

Thank you your report on  
the receipt on of Radio ...  
broadcast for Arabian  
Countries  
Date 1.10.74  
Time 15.32-16.00  
Frequency 98.10 (30.42m)  
our report has been included  
with our regular and is printed  
in every set of 11.



BOX  
266



LATVIAN RADIO RIGA

NASWA FLASHSHEET

The FLASHSHEET is published twice monthly by NASWA, Box 321, Park Forest, Ill. 60466

JULY 1975

Freq: KHz

Time: GMT

AL NIBLACK, EDITOR, 420 Shelby St., Vincennes, Ind. 47591 DEADLINES 10 & 20th month

Reproduction of items here-in welcomed, provided proper credit is given. Thank you.  
\*\*\*\*\*

To the loggings:

ARGENTINA 6180 R. Nacional, Mendoza, apparently relaying LRA noted 1100 with LRA ID, SS, 8 AM TG, and news, good lvl. (Glenn Hauser)  
ASCENSION 17840 BBC on 6/9, 1559, amcd that "this fcy" is now available daily on an experimental basis between 0800 and 1600. I believe they were talking about some other fcy however, as on 6/10 Ascension hit the air at 1430 as per usual. (Glenn Hauser)  
AUSTRIA 15410 ORF at 0557 with IS, German proclamations of, "Osterreich auf Kurzwelle". (Glenn Hauser)  
AUSTRALIA RA, 7220, with 10kW, noted 1100 with EE news, //9770 and 5995, 6/15. (Bob ...11840 DXers Calling Prgm on Sundays 2130, fair to good lvl...15425 Perth, / Zilmer) to 0900 v'y strong and steady signal. (Credit both items to August Balbi)...15290 RA, "Calling Antarctica", pleasant Friday only prgm of greetings and musical requests, at 0300 in EE, repeated at 0400-0430 on 15240. (Glenn Hauser)  
BRAZIL 9705 Radio Maua observed at 1000 in PP, v'y readable lvl. (Jack Jones)  
BRUNELI 7215 R. Brunel much improved sigs in EE at 1315, and S/off at 1430 with GSTQ, monitored 6/15. (August Balbi)  
DOMINICAN REP 5965 RTV Dominicana, SS, music, ads, jingles, at 1145. (Bob Zilmer)  
CHILE 9566.1 LV de Chile have been rescheduled; audible on this fcy, measured; 0110-0130, must be split from VOA 9565, at 0210-0230; 11810 and 15150 are better at other times. (Glenn Hauser)  
GERMANY(E) 11890 RRI, 0330, EE local news comments, at fair signal lvl...11720 RRI at 0315 in language, IS, ID, under Radio Kiev, noted 6/10. (Credit both items to Bob Zilmer)  
GUAM (FLASH) According to Al Stewart of TWR's DX Special, construction of the station on Guam has been started. There will be a HW outlet and for SW there will be two 100kW transmitters, which will be used for broadcast to the Pacific. (Gregg Krause) (Gregg, thanks for the kind words about the FS, same are appreciated, Editor)  
INDONESIA 7058 RRI, Jakarta, tune in 0215, found in parallel with 6045, 4805, with Programa Nasional, until fade out 0330; possibly ex 7190...3960 RRI, Padang station ID at 1100 noted; and at S/on 2330-0000 fade out...3952 RRI, Bogor, Jakarta news 1300, news from Bandung at 1400...2490 RRI, Semarang S/on 2230 in parallel with 3935...3935 Semarang, RRI, 2230-0030 fade out, local news 2530, 0000 news from Jakarta...3323v RRI, Jember ID 1458, then Jakarta news, have never heard Jayapurabon on this fcy...3165 RPKD, Kota Madya Surabaya, observed S/on 2200...4885 RRI, Bukittinggi, at tuning at 0005, news bulletin and entry, possibly S/on at 0000, but not sure; station ID at 0017, till 0115 fade out...4900 RRI, Gorontalo, at tune in 0020, continuous songs until ID at 0030, till fade out at 0100...4945 Unidentified, though presumed Badung, tuning 2330-0015 fade out...2323 RPKD, Gianjar, frequent IDs at 2200 S/on...3277 RRI, Jakarta, S/on 2200-0010 is fade out time...3043 RPKD, Karanganyar ID 1359, 1400 did not follow ith news, but II songs...2865 RPKD, Lamongan, 1500 Jakarta news...4060 RPKD, Bojonegoro 1300 ID, then Jakarta news...3385 RRI, Kupang, with Jakarta news 1500, S/off 1520. (Credit all these goodies to DXpert Craig Tyson)  
IRAQ 9757.65M See my previous report of an unidentified; Ernie Behr says its Baghdad, up from nominal 9745, noted 1840 in AA. (Glenn Hauser)  
ISRAEL 15125 IBA from 1048-1100, EE news, weather, to No. America, then into FF. (Bob JAPAN NHK, 15325/15430 S/on 0630 to Europe, gud lvl in GG; EE news at 0800... / Zilmer) 17880 NHK with EE news at 0700, paralleling 9505, strong lvl. (Credit all to August Balbi)  
KOREA(S) 15355 (August probably means 15335, Editor), in parallel with 9640, Radio Korea at 0900 with EE news, no strain copy lvl. (August Balbi)...15335 Radio Korea finally heard at 0520 on 6/8, this fcy replacing 11925, in EE, at 0530 into Korean. (Glenn Hauser)  
NEW CALEDONIA 7170 Radio Noumea, 1045-1100\*, in FF, music, some EE recordings, fair enough signal lvl on 6/12. (Bob Zilmer)  
NEW ZEALAND NZBC noted on 6080, news 0800, //9540; VOA covers 6080 till 0800. (August Balbi)  
NIGERIA 6025 Enugu Regional excellent lvl at 2255 with dance music; an EE ID at 2300, into news in EE. (Al Niblack)  
PAPUA/NG Full list of stations per sked: Port Moresby (National SW stns), 3925, 4890, 9520 (each 10kW), (R. Central District) 3290 (2kW); R. West New Britain (Kimbe), 2340 (2kW); R. Chimbu (Kundawa) 2376 (2kW); R. Eastern Highlands (Goroka) 2410 (2kW); R. New Ireland (Kavieng) 2428 (2kW); R. Western Highlands (Mt. Hagen) 2450 (2kW); R. Northern District (Popondetta) 2468 (2kW); R. West Sepik (Vanimo) 3205 (2kW) not yet transmitting; R. Morobo (Lae) 3220 (2kW); R. Gulf District (Kerema) 3245 (2kW); R. Madang District (Madang) 3260 (2kW); R. Southern Highlands (Mendi) 3275 (2kW); R. Western District (Daru) 3305 (10kW); 6080 (10kW); R. Bougainville (Keita) 3322.5 (10kW); R. East Sepik (Wewak) 3335 (10kW) 6140 (10kW); R. Milne Bay (Alotau) 3360 (10kW) 6040 (10kW); R. East New Britain (Rabaul) 3385 (10kW) 5985 (10kW); R. Manus (Lorengau) 3905 (2kW) not yet transmitting; R. Enga (wabag) fcy not listed (2kW), not yet transmitting.

( continued )

PAPUA/NG (continued) Three Port Moresby National SW stations plus four 49 meter band stations use Port Moresby as the program source. The other stations handle their own programming. (Don Jensen)..9520 Port Moresby with EB news at 0600, native 0730-0800, good copy. (August Balbi)

PHILIPPINES 9569.3 Radio Veritas has finally returned to the air on SW. Following a tip from RA's DX Prgm, tuned here at 1226 to find mushy pops, brief anncts by woman, a Radio Veritas ID in Thai at 1235. Finally an EE ID at 1236 mentioning target areas as Malaysia and Sri Lanka, and requesting reports to Box 373, Quezon City. Prg annct as 9570. Do not confuse with TWR-Bonaire, on 9570 until 1100. (Glenn Hauser)

SWEDEN I still note reports of Radio Sweden at 1230, etc., being on 15310, as per their schedule. However, since 5/22, I have noted daily that all of RS's beacons are on 15315, in lieu of 15310, from 1230-1500, to NA. Odd...few others quote this, though my friend Larry Lundberg of Minnesota notes same and confirms. Am listening to Radio Sweden on 15315 right now. (Bill Pasche)

SO AFRICA Radio RSA on 17780/15220//11900, vry strong lvl in EE at 0611. In FF at 0500 and 0700-0850. (August Balbi)...9710 Springbok Radio by long path, 6/15, 1220 with music requests, mentioning Bloemfontein; 1225 in Afrikaans; 1251 father's day message, more request music. Long path would be across Australia, Hawaii. (Glenn Hauser)

TURKEY 9515 VoT, at 2200, in EE news, paralleling 11880, both fair lvl signals. (Bob Zilmer)

YEMEN ARAB REP 9585 Radio Sanaa from tuning at 0330, 6/15, with AA anncts, string music, and vocals, clear IDs. Good S-9 signal till deterioration started at 0420. Think I heard a few seconds of their flute IS at 0600A. Finally got good enough to ID. (Hadley Cress)

USSR Noted RM on Far East transmitters from 0520-0545, with EE news and cntry, on parallels of 11960, 12020, 12050, 15100, 15130, 15180, various of the guys from poor lvl, to fair, to readable. Thanks to Bill Davis's chart in Listeners notebook, June FRENCH, I am counting Country #129, these transmitters as Atlantic USSR outlets. However, its only my Soviet #6 Country. (Hadley Cress)

VATICAN 15165 VR in EE news at 1505, strong lvl, if band open. (August Balbi)

YUGOSLAVIA 9620 Radio Belgrade, 2200, EE local news, sometimes fair signal. (Bob Zilmer)

ERRATUM (See previous FS) In mid-June FS, Thailand OR Scr should have have read 5405, not 6045. (Glenn Hauser) (Right, Editor)

UNKNOWN 6185 (TENT) Radio Swan (?), 0841-0859, 6/11, in SS, light and pop music, hit by VOA carrier at 0848, no het, just flutter, thought I heard "Radio Swan-----America Latina-----America Central-----6185 khz, banda internacional de-----", done under by Yankee Doodle. I do believe annct for Radio Swan, or something vry similar. (Jack Jones) (Vry interesting, of course, one of our agencies operated Radio Swan several years ago, on ECB, and SW bands; I do have a QSL card from same. I doubt that the agency has returned former Radio Swan to the airlines, though stands much more checking, Editor)...Station S/off at 2200 on 15335, language sounds like FF, also then like AA. At times is good signal lvl. Possibly Africa because of propagation similarities. Any ideas?? (Bob Zilmer)

MISCELLANEOUS U.S. GPO Publication available, is the useful "Broadcasting Stations of the World, Part III". Check or M.O. in the amount of \$2.40, payable to the Superintendent of Documents, Public Documents Distribution Center, 5801 Tabor Avenue, Philadelphia, Pa. 19120. Ask for publication number Pr Ex 7.9: 974/pt 3 S/N 041-005-00011-3. (Ed Insinger)

ENGLISH BROADCASTS AUDIBLE IN NORTH AMERICA The North American Shortwave Association is now publishing a handy leaflet showing current summer-season schedules for broadcasts in English from more than 100 countries--sort of a mini-summer supplement to the WRTVM. NASWA members will receive it with their July FRENCH, and non-members may obtain a free copy by submitting a long SASE (in Canada and Mexico, one IRC; elsewhere two IRCs), to NASWA, Box 13, Liberty, Indiana 47353. (Glenn Hauser)

INDONESIAN SURVEY The Australian Radio DX Club has published its second Indonesian station survey (SW and NW), listing details of over 130 stations. Worldwide cost is 3 IRCs by sea-mail, 5 IRCs by air, to: ARDXC, Box 227, Box Hill, Victoria 3128, Australia. (Glenn Hauser)

COLLINS 51S-1 RECEIVER (See previous FS) In re the Collins 51S-1 receiver, this was developed in 1965-66 and commercially released in 1967. Price has risen steadily during that period and is now about \$2600. This is a favorite in the military, although its all tubes. The 51S-1 doesn't make a good DXing receiver until modified with expensive mechanical filters. (Perry Ferrell, Gilfer Associates)

A CHANGE IN RADIO CANADA INTERNATIONAL QSL POLICY Another change in ROI QSL policy concerns the new ROI QSL card. The new card will be used the balance of this year. What sets it apart from our past cards is the fact that we are not including specific times, dates, and frequencies. Despite the fact that this information does not appear on our new QSL card, it is still a verification of your reception of one of Radio Canada's broadcasts. In light of this change, your program details included with your report have even greater importance than before. It is primarily this information which will be the deciding factor as to whether a report is valid or not. And we will discontinue the sending of green cards indicating why a reception report was not valid, and not eligible for a QSL. (Ian McFarland, Radio Canada International)

ACKNOWLEDGEMENT THANKS TO ALL THE CONTRIBUTORS THAT MADE THIS FLASHSHEET BULLETIN POSSIBLE: August Balbi, Calif.; Bob Zilmer, Wisc.; Glenn Hauser, Okla.; Jack Jones, Miss.; Gregg Krause, Minn.; Craig Tyson, AUSTRALIA; Don Jensen, Wisc.; Bill Pasche, Wisc.; Hadley Cress, Va.; Al Niblack, Ind.; Ed Insinger, N.J.; Perry Ferrell, N. J.; Ian McFarland, ROI, CANADA..... 73, AL

NASWA ANTENNA/ACCESSORIES SURVEY --- Part 3

Compiled and edited by: Neal A. Perdue, WDX4NAP  
4937 S. Bilrae Circle  
Millington, Tn. 38053

Results of this survey are being published monthly in FRENDEX. The first installment appeared in the May 1975 issue, and one page per month will be published until all contributions have been printed. Input to this project is still requested.

- Al Sizer, Ct      100 ft singlewire at 35 ft ht, S.E. to N.W.  
70 ft singlewire at 25 ft ht, E. to W.  
13 Meter dipole, S.E. to N.W.  
Gilfer A-20 preselector.
- Ken Earhart, Pa.    Parallel Inverted-Vees for 13, 16 & 19 M, at 30 ft ht  
Also in parallel with this unusual dipole arrangement are a 17 ft wire E. to W. and 2 20 ft wires, one running N.W. and the other S.W. from the feedpoint.  
Lead-in is "TV coax". "Todd Graves" antenna tuner.
- Marv Robbins, Neb    113 ft singlewire, N.E. to S.W.
- Gladys Keller, N.Y.    50 ft singlewire at 35 ft ht, N.E. to S.W.  
(inverted-L)
- John Tuchscherer    80 ft inverted-L at 30 ft ht, E. to W.  
Wis
- Larry Talbot, Wis    31 Meter dipole at 25 ft ht, N. to S.
- Adam Gaffin, N.Y.    100 ft singlewire, indoors. Medium Wave Loop.
- C.J. Lippoldt, Fla    170 ft singlewire triangle at 50 ft ht, E. to W.  
66 ft singlewire triangle at 50 ft ht, E. to W.  
Mosely SWL-7 at 50 ft ht  
Joystick VFA (indoors) & Joymatch III tuner  
Hamgear/Gilfer PM-II-CX preselector
- Sol Immerman, N.Y.    9 ft aluminum tube, out of window
- Pat Tobin, Pa        65 ft singlewire at 40 ft ht, E. to W.  
Homebrew "pretuner"
- Barry Peters, Pa     100 ft singlewire at 25 ft ht, N. to S.  
97 ft dipole at 30 ft ht, N. to S.  
Mosely SWV-7 vertical, base at 45 ft ht  
Homebrew tropical-band loop. (Barry, if you have a loop antenna which shows any great degree of directivity in the tropical bands, I would be very interested in having a set of plans for it.)  
Codar PR-40 preselector, Palomar freq. standard crystal-calibrator.
- Neal Perdue, Tn.     84 ft singlewire to 45 ft ht semivertical, N. to S.  
Helically-wound vertical, 20 ft ht, with 65 ft of wire wound on a 10 ft pole, and 25 ft lead-in.  
Unique Wire Tuner  
Gilfer A-20 preselector  
MFJ SSB active audio filter  
LM-18 freq. meter

(Ed. note: had to get my goodies in here somewhere!)

If space permits, a few of the later sections of this survey will show diagrams of unusual antennas that have been sent to me. The most unique of these has been a couple pounds of notes and schematics dealing with the half-square full-wave ground-plane antenna, which must have taken experimenter Carl Rozycki of N.Y. many hours to prepare. With this apparently Super Hot antenna, Carl has heard many SW stations from all over the world on homebrew CRYSTAL SETS! More on this later. 73,  
NAP

William C. ALDER, San Antonio, TX (SPR4)...Alan ANDERSON, Hopedale, MA ...  
 Ernie BEHR, Ottawa, Ont., Canada (SPR4/XCR30)...Jeff BOWLSBY, Vancouver,  
 B.C., Canada (SP600)...Charles H. ERUNNER, Jr., Salford, PA (SW4A)...  
 Geoff COSIER, Burwood, Victoria, Australia...Oscar CRARY, Onalaska, WI  
 (HQ 180A)...Hadley D. CRESS, Harrisonburg, VA (SX190/R4C)...Bill DAVIS,  
 Laguna Niguel, CA (Homebrew)...Kenneth DUKE, Durham, NC (R390A)...Kenneth  
 A. EARHART, Allentown, PA (SX190/DX150A)...Sandy EICHENHORN, Southfield,  
 MI (SPR4)...Marlin A. FIELD, Southfield, MI (SX100)...George GREEN,  
 Houston, TX (DX160)...Glenn HAUSER, Enid, OK (HQ 160)...Bob HILL,  
 Berkeley, CA (R390/R390A)...Jack R. Jones, Jackson, MS (DX 150A)...  
 Roger LEGGE, McLean, VA (Collins 51 J)...Arnold LAUSEVICH, Milwaukee, WI..  
 Lawrence E. MAGNE, Philadelphia, PA (R4B)...Alan MAYER, Park Forest, IL  
 (SPR4)...Jim MEEHAN, Berkeley, CA (SX190)...Albert A. MILLER, Jr.,  
 Youngstown, OH (HRO-500)...John J. MORITZ, Jr., Youngstown, OH (DX 160)  
 D. James NIELSON, Denver, CO (DX 160)...Bob PADULA, Surrey Hills, Victoria  
 Australia (Marconi CR100)...Jeffery R. POWERS, Conemaugh, PA...Al  
ROSINSKI, Bedford, MA (HRO)...Richard A. SCHWARTZ, Dover, DE (SX190/S108)  
 Edwadr C. SHAW, San Diego, CA (SX190/SP600)...Dan SHINGLER, St Clair  
 Shores, MI (DX160)...Chet SMITH, Verona, NY...Ken SMITH, Livonia, MI  
 (SW-717)...Todd SMITH, Wilton, CT (GR 64)...Bill SPARKS, San Francisco,  
 CA (R390/R4B)...Kevin SZOT, Vacaville, CA (R390)...Larry TALBOT,  
 Menomonee, WI (SB-313/SW 717)...Jack TROY, Richmond, VA (SPR4)...John  
TUCHSCHERER, Neenah, WI (HQ180/HQ100A)...Philip WALA, Milwaukee, WI...  
 John A. WEGENER, Godfrey, IL (DX150A)...Micael WILLIS, Hampton, Victoria,  
 Australia (Trio 9R59DE)...Larry YAMRON, Pittsburgh, PA (SPR4)... Bob  
ZILMER, Milwaukee, WI (SPR4)...Numero Uno, Kenosha, WI.

\*\*\*\*\*

**HELPING HAND:** HAP Equipment Manager needs to borrow manual for Heathkit  
 GR-64 receiver. Please write J. A. Lackman, 509 South Main, Lexington,  
 Virginia 24450.

**WANTED:** Would like to obtain WRTH from 1952. Please quote price deliver-  
 ed to: John Tuchscherer, 630 Winnebago Heights, WI 54956.

**HELPING HAND:** Wanted...Back issues of the Finnish DX magazine "DX Kunn-  
 tellja" from 1972, 1973, and 1974...Contact Ed Pyatt, 1200 W. Columbia  
 Avenue, Apt. 510-East, Philadelphia, PA.

**HELPING HAND:** For sale...Joystick antenna and Joymatch III-A tuner \$37.50  
 Contact Ed Pyatt, 1200 W. Columbia Avenue, Apt. 510-East, Philadelphia,  
 PA 19122

**HELPING HAND:** For sale...Heath OP-1 oscilloscope \$50.00, fair condition,  
 needs 3 amp fuse; Heath RF generator 160 kcs-220 mcs \$20.00; Ameco AC-1  
 15 watt transmitter 40/80 meters w/xtals for 7125, 7200, 7155, 3825 and  
 3980 kHz \$25.00. Contact Tony Fields, 4002 Douglas Ave., Kalamazoo, MI

**HELPING HAND:** For sale...Popular Electronic magazines 35 issues 1963-  
 1974, \$6.00 postage paid. Contact Andrew Pappas, 11421 Maplewood,  
 Chicago, IL 60655

**OHIO WEEKEND DX SEMINAR:** To be held September 20-21 at Holiday Inn, South,  
 455 Springboro Road, Dayton, OH. Open to DXers from everywhere. Meeting  
 opens 9:00 AM September 20, closes 5:00 PM September 21. Rooms are \$16.00  
 plus tax, one person; \$20.00 plus tax, two persons, each additional \$3.00.  
 Registration/Reservation deadline is September 1, 1975. After September 1,  
 all uncommitted rooms will be released. To register, or for additional  
 information, send a SASE to Brandon Lovett, 201 Carrlands Drive, Dayton,  
 OH 45429. Registration fee will probably be \$3.00. People still needed to  
 lead technical and hobby talks.

**BOSTON AREA DXERS:** Announcement: Starting with our next get together, there  
 will be a fee of \$1.50 per person. Anyone wishing to attend one of our get  
 togethers should send check or money order to Frank A. Testa, 193 Chatham  
 West Drive, Brockton, MA 02401 in advance.

# NASWA

NORTH AMERICAN SHORT WAVE ASSOCIATION\*POST OFFICE BOX 13\*LIBERTY, INDIANA 47353 U.S.A.

Publishing **FRENDX** Monthly

Unity and Friendship

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NASWA'S FLASHSHEET is compiled twice a month giving the DXer the very latest DX news while it is hot. The FLASHSHEET is edited by veteran DXer Al Niblack. All reports for the FLASHSHEET go directly to Al at 420 Shelby Avenue, Vincennes, Ind., 47591, USA. One issue of the FLASHSHEET is incorporated in each issue of FRENDEX, the other issue, the Mid-Month FLASHSHEET is available in a separate mailing to NASWA members for \$2 per year in North America. It is airmailed overseas for \$4 per year. These fees are, of course, in addition to the annual membership dues.

All inquiries, checks/ money orders/ dues/ renewals and/ or orders for the Mid - Month FLASHSHEET should be sent to NASWA Headquarters:

P.O. Box 13, Liberty, Indiana 47353, USA

All remittances should be in U.S. funds. Sample FRENDEX and FLASHSHEET are available for \$ 1.00.

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Reports to the individual sections should go directly to the editors listed below:

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SCOREBOARD — *Neal Perdue, 4937 S. Bilrae Circle, Millington TN., 38053*  
LOG REPORT (A) — *Bob Hill, 1626 Bonita Ave., Berkeley, CA., 94709*  
LOG REPORT (B) — *Larry Yamron, 510 N. Neville, Pittsburgh, PA., 15213*  
LOG REPORT (C) — *Jerry Lineback, P.O. Box 325 St. Joseph, IL., 61873*  
LISTENERS NOTEBOOK — *Glenn Hauser, 1312 West Oak, Enid, OK. 73701*  
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