

VOL. VIII

DECEMBER, 1936

NO. 3

INTERNATIONAL



- Short Wave News.
- Accurate Station List.
- Hourly Tuning Guide.

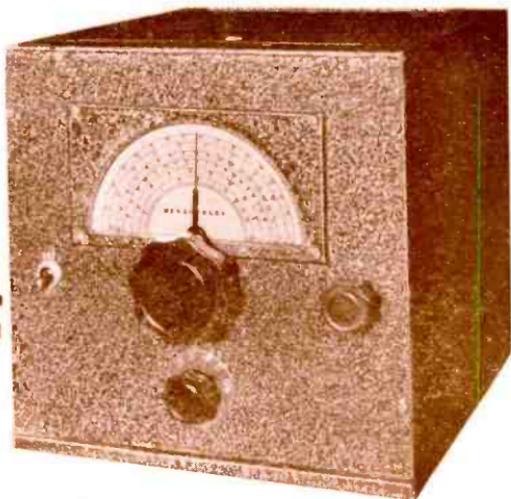
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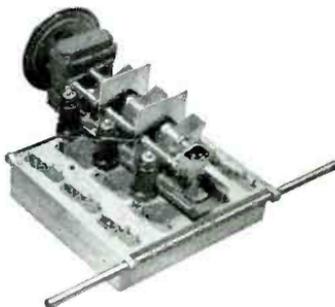
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NOT A FILTER OR A "GADGET"

but a device incorporating the famous Lamb Silencer Circuit, hailed by the radio world as the greatest step in man-made noise suppression.

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Note:—Readers who may find it more convenient may send 5 shillings to Arthur Bear, 100 Adams Gardens Estate, London, SE16, England.

Readers are asked to be careful not to mistake this organization for others which may have a similar name. This is the original International Short Wave Club and all mail should be addressed to International Short Wave Club, East Liverpool, Ohio.

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The base is of walnut, highly finished. The globe itself can be cleaned by merely washing it with a damp cloth. Every short wave fan should have one of these globes for several good reasons. First of all, it marks the location of stations heard. Second, you can measure distances to the stations you hear. Third, it adds charm and beauty to any radio. Fourth, it creates interest in your short wave reception when people see this globe.

A free globe hand-book included in each sale.

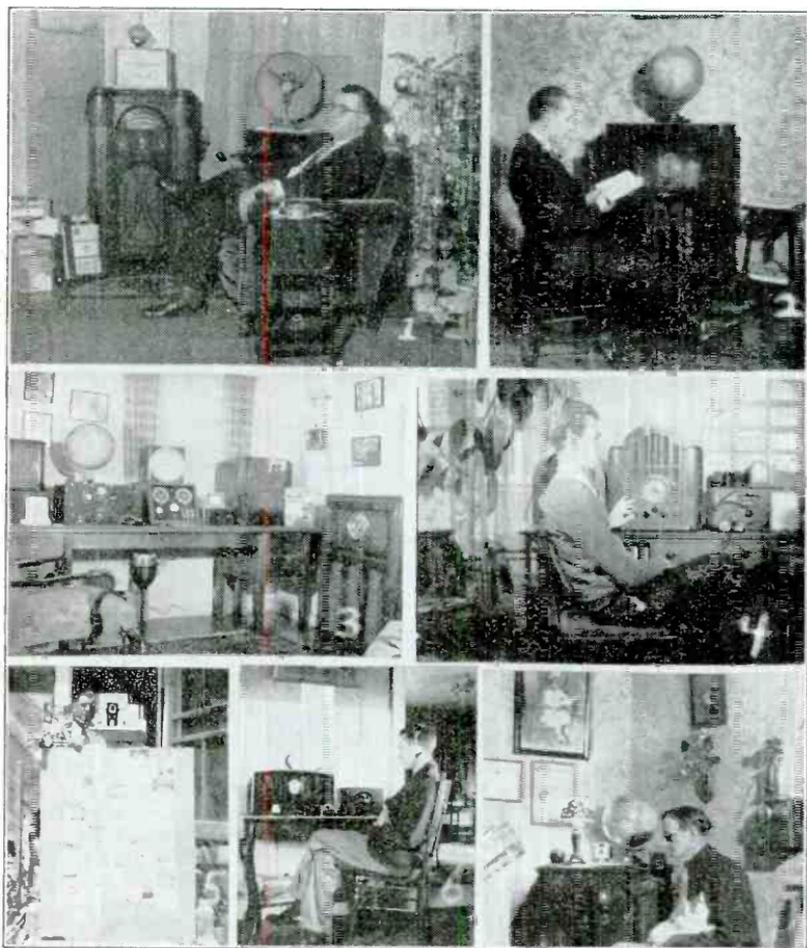
PLEASE SEND POSTAGE

This new price does not include postage. Readers are requested to send the necessary postage when ordering. The shipping weight is eight pounds. In cases where more than enough postage is sent, we will return all not used.

Ask your postmaster for the postage rate on 8 pounds from Indianapolis, Indiana.

Address your letters to—

INTERNATIONAL SHORT WAVE CLUB, East Liverpool, Ohio



Greetings, Friends. This month we introduce to you the following members: Photo No. 1—Howard Muir, Racine, Wisconsin. No. 2—Lawrence Gagnon, Quebec City, Canada. No. 3—Charles Eggenweiler, West Los Angeles, Calif. No. 4—Enrico Scala, Jr., Bronx, New York. No. 5—Eric Butcher, once of Oklahoma City but lately of New Orleans, La. No. 6—James Pickering, Hightstown, New Jersey. No. 7—O. Igmarr Oleson, Ambrose, North Dakota. For the benefit of new members we wish to state

that there is no charge for publishing these photos. A good clear picture is needed however. And photos will be used just as rapidly as we can get to them.

This is the season for lots of reports and for many new members. For reporters we have this to say. Please confine your reports to material that can be published. That is, news of new stations, stations off schedule, stations on new frequencies and such things. Stations heard on schedule are of no interest and just take up time. If the reporter wishes, he or she may put the stations into continents, just like we give the news in the magazine, i. e., Europe, Asia, Africa, etc. If you wish, you can state wherein the news lies, such as the station being on a new wavelength, off schedule, or new station. You can abbreviate these with NW for new wavelength, OF for off schedule, etc. If you will kindly note the list of reporters this month you will understand why we make this request. And, one important thing. Do not put off sending the news till late in the month. For you may be too late. Send the news when you get it. Some members send as many as twenty postal cards in a month. That is the way to do it.

For new members. We wish to state that you need not be confused over all these odd figures you see in our magazine. If you have a modern set you will find the short waves calibrated on your dial with figures like 9 and 9.5 and 10. The figure 9 stands for 9.00 mc. and the figure 10 for 10.00 mc. In our list you will see stations listed as 9.00 mc. and 10.00 mc. These stations will come in on these figures on your dial. And, all stations shown between 9.00 and 10.00 mc. come in between 9 and 10 on your dial. A station listed as 9.50 will come in half-way between 9 and 10. The space between 9 and 10 is evenly divided you will note. There are usually ten equal divisions, although some sets differ on this, due to band-spread features. But the first space would equal 9.00 to 9.10 mc., the second from 9.10 to 9.20 mc. etc. When you read that a station is on 9.15 mc. look for it at the time scheduled half-way between 9.10 and 9.20. And, too, you will note that when we give the name of a reporter, we also give his location, like Rossi, Pa. This shows the station is heard in Pennsylvania.

And remember, too, that all the fun in having a short wave set is not in tuning. When you hear a new station, send them a report and get a verification. Saving veries is lots of fun. Soon you can join the Heard-All-Continents Club and show people you have heard stations on every continent. When you see the address of a Pen-pal, write him and soon you will be having more fun than you ever dreamed of when you bought your set. Tuning in England and Germany is some fun, but the real pleasure of DXing lies in the hard-to-get stations and making overseas friends.

PEN-PALS

The following people would like to exchange letters with members:

- W. F. Eady, 67 Steven Crescent, Eastcote Lane, Middx, England.
- Mrs. Alice Wilbur, 203 Mulberry St., Newark, New Jersey.
- A. B. McDonough, 4 Queen St., Wellington, New Zealand (stamp collector).
- Robert Holland, Jr., Box 109, Murray, Kentucky (Foreign).
- E. G. Riggle, 31 Maple Ave. S. E., Massillon, Ohio (Asia-Africa).

W. R. Stephenson, 192 Ladbrooke Grove, London W 10, England.
Clive Peterson, Phillipsburg, St Martin, D. W. I. (17 or 18 yrs. old).
Miss Eileen Hofmaster, 321 Scott St., Sandusky, Ohio (Foreign).
Ian K. Henderson, 106 Waipapa Rd., Hataitan, Wellington 2, New Zealand.
John C. Barron, 4 Hill Street, Aberdeen, Scotland.

SPECIAL PROGRAM

J. H. A. Hardeman of Tjimahi, Java, has arranged with the NIROM to broadcast a special program dedicated to the I. S. W. C. membership over 14 local stations and the following short wave stations: YDA (98.68 meters, 3.04 mc.) YDB (31.09-9.65), YDC (19.60-15.15). PMN (29.25-10.26) and PLP (27.25-11.00). The time is Saturday, January 2nd from 7:15 to 7:30 A. M., E.S.T., or 1215 to 1230 G.M.T. We will give two prizes on this program. One will go to the best report received from over 2,000 miles from Java. The second to the best report received from 5,000 miles or more from Java. All reports must go to Mr. Hardeman, who will judge the reports.

CONTEST

Only three persons have indicated that they are taking part in the membership contest which we announced two months ago. The person getting the most new members or renewals in this contest gets, believe it or not, a brand new Hallicrafter Sky-Chief receiver complete. The next highest number will get a National SW-5 A.C. receiver, slightly used. Any person sending in more than five memberships will get a prize. The contest closes May first to members in North America, May 5th to members in the West Indies and Central America, and May 30th to members in Africa, Australia and Asia. All you have to do is get people to send in their subscriptions and mention your name or else send the subscriptions in yourself. Ask your local radio dealers for a list of people who have all-wave sets. Go to them, tune in some DX stations to interest them and show them your verifications from distant places. This will interest them and then you can sell them a subscription easy enough.

NEW EQUIPMENT

Whenever you buy something new, write and tell us how it works. If you buy a new set, let us know what you think of it. This news will not be published, but it will be used for a very good purpose. Every day or so someone writes and asks us our opinion of this or that set or this or that antenna. Not having tried these things ourselves, we have to depend on letters from members for information. Your reports on new equipment help, more than you may believe. And never forget—always mention the club when you make a purchase, whether it is from one of our advertisers or not.

SHORT WAVE FANS

For the past four years one member has been sending us the name and address of everyone he knows of that is interested in short waves. We appreciate that very much and it would help the club a lot if everyone would no the same.

SHORT WAVE NEWS

What many people call "skill" in tuning for short wave stations is nothing more or less than knowing **WHEN** and **WHERE** to tune for stations. Nearly all short wave stations are experimental and change their wave lengths or schedules almost without notice. To know when these changes take place is as important to successful reception as having a good receiver.

The time is given in Eastern Standard. Add five hours for Greenwich Mean Time.

AUSTRALIA

FO8AA, Radio Oceanie, Papeete, Tahiti, on 7.10 mc. has verifications saying they have 200 watts power and broadcast Tuesdays and Fridays from 11:00 P.M. to midnight. Veries are signed by Alfred T. Poroi, President Radio Club Oceanien, (Dick, N. Y.). Begins program with "La Mar-seillaise" and ends with "Aloha Oe," (Walcott, Calif.) Reported on schedule, (Eggenweiler, Karpen, Sparks, Sheppard, Miller, Gallagher and Schmeichel).

VPD2, Suva, Fiji Islands, on 9.54 mc. is broadcasting from 5:30 to 7:00 A.M. week-days, sometimes staying on a little later. It has been heard by thousands.

VK2ME, Sydney, on 9.59 mc. broadcasts Sundays 1:00 to 3:00 A.M. and 5:00 to 11:00 A.M. in December.

VK3LR, Melbourne, on 9.58 mc. starts broadcasting at 11:00 P.M. daily now instead of 3:15 A.M. according to Mr. Partner of Washington. Others say 3:15 to 8:30 A.M. daily. On 31.34 meters, not 31.31, (Orchard, Eng.)

VK3ME, Melbourne, on 9.51 mc. broadcasts week-days 4:00 to 7:00 A.M.

VK6ME is not on the air and will not be heard for some time. The transmitter built for 6ME was sent to Suva where it is now operating as VPD2.

VK8CS, Port Hedland, West Australia, veries say they are on 6.96 mc. with 200 watts power. The station is operated by Australian Inland Missions, Aerial Medical Service. It is used to broadcast medical advice and to attend to the affairs of a flying doctor, (Walcott, Calif.) Heard every Sunday between 4:30 and 5:15 A.M. This is a fine tip, (Moots, Mo.)

ZFBJ on the ship "Althea" on 8.90 mc. heard phoning ZLT from 2:00 to 3:15 A.M. once and 5:00 to 5:20 A.M. one Wednesday, (Solito, Pa.) ZMBJ on the Union S. S. Company ship "Awetea" on 8.84 mc. phoning ZLT at 1:30 A.M., (Walcott, Calif.) Is ZMBJ on the "Awatea" on 8.75 and was heard at 6:30 A.M. sending music (Dutrow, D. C.) So, the editor will not get into the matter by saying what he believes is correct. VLZ, Australia, on 13.34 answered (Solito). VLZ on 13.25 mc. was sending music at 2:00 A.M. once (Hofmaster, Ohio).

ZLT, Wellington, New Zealand, is heard phoning Australia between 11:00 P.M. and 6:00 A.M. on 11.05 mc. Australia has telephone stations at Sydney operating on 10.52 mc. and 9.76 mc. They are used to phone Java, New Zealand and England. When testing they use the call VK2ME. When

working Java they use VLJ. When working England they use VLK. When working New Zealand the call VLZ is used.

AFRICA

EHZ, Teneriffe, Canary Islands, on 10.37 mc. is broadcasting Rebel war news for the benefit of short wave listeners. We understand they are on the air every day from 2:00 to 4:00 P.M. and 6:00 to 7:00 P.M., but this is not the complete schedule. It has been reported from 7:00 A.M. almost every hour of the day up to 9:30 P.M. They ask for reports, the address being announced as Box 225, Teneriffe. They are also on long waves using the call EAJ43, so you will hear them say EAJ43 at times.

EA8AL, Canary Islands, broadcasts on 42.78 meters or 7.01 mc. Mondays, Wednesdays and Fridays, 3:15 to 4:15 P.M. and Saturdays at the same time or maybe 4:15 to 5:15 P.M.

CR6AA, Lobito, Angola, on 7.177 mc. broadcasts Wednesdays and Saturdays 2:45 to 4:45 P.M. (Burdett, Africa). Is very weak station. One writer claims they moved to 9.66 mc. but the latest magazines from Africa still say 7.177 mc.

CR7AA, Lourenco Marques on 6.137 mc. broadcasts weekdays 12:45 P.M. to 3:15 P.M. and Sundays 8:00 to 10:30 A.M. (Burdett, Africa.)

FIQA, Tananarive, Madagascar, on 6.02 mc. relays FIU between 7:00 A.M. and 1:00 P.M. (Burdett, Africa) Is on 6:00 mc. 3:30 to 4:45 A.M. and 10:00 to 10:45 A.M. according to letter. (Adams, India.) On 6.02 mc. at 7:00 A.M. (Carville, France.) Seldom reported outside of Africa.

ZEC, Salisbury, Rhodesia, on 5.80 mc. and ZEB, Bulawayo, on 6.147 mc. broadcast the same program Sundays 3:30 to 5:00 A.M., Mondays 11:00 A.M. to noon, Tuesdays 1:15 to 3:15 P.M., Thursdays 10:00 A.M. to 10:45 A.M. and 11:00 A.M. to noon, Fridays 1:15 to 3:15 P.M. Send reports to the postmaster at Salisbury. (Burdett, Africa; Graham, Africa, and Cram, England.) Seem to be very hard stations to get. Verification says ZEC is on 6.01 mc., not 5:80. (McMenamy, California.)

ZTJ, Johannesburg, on 49.20 meters or 8.09 mc. seems to have slipped a little and is now on 49.25 meters, 6.091 mc. They moved in order to avoid interference from Belgrade. (Orchard, England.) The schedule is weekdays 11:45 P.M. to 12:30 A.M., 3:15 to 7:00 A.M., 9:00 A.M. to 11:30 A.M. and noon to 5:15 P.M. Try from 12:00 to 12:30 A.M.

VQ7LO, Nairobi, Kenya, on 6.082 mc. broadcasts Mondays to Fridays 5:45 to 6:15 A.M. and 11:30 A.M. to 2:30 P.M., Tuesdays and Thursdays 8:30 to 9:30 A.M., Saturdays 11:00 A.M. to 3:00 P.M. and Sundays 11:00 A.M. to 2:00 P.M. (Gullberg, Sweden).

African phones. SUX, Cairo, Egypt, on 7.98 mc. phones England around 4:00 to 6:00 P.M. SUV, same city, on 10:05 mc. phones around 1:00 to 5:00 P.M. SUZ, same city, on 13.83 mc. phones around 11:00 A.M. to 1:00 P.M. VQG, Nairibo, Kenya, on 19.63 mc. phones London between 7:00 and 8:30 A.M. daily. Address is Box 777. OPL, Leopoldville, Belgian Congo, on 20.04 mc. phones Belgium 10:00 A.M. to 3:00 P.M. OPM, same city, on 10.14 mc. phones between midnight and 2:00 A.M. and 2:00 and 3:00 P.M. ZSS, Capetown, on 18.89 mc. phones England between 6:30 A.M. and

1:00 P.M. CNR, Rabat, Morocco, on 12.82 mc. phones Paris between 3:00 and 4:00 P.M. irregularly.

FZES, Djbouti, French Samoliland, on 17.27 mc. heard one Saturday at 6:00 A.M. calling Paris. (Karpen, Pa.) FZE9, same place, on 8.57 mc. heard between 2:00 and 3:30 A.M. (Solito, Pa.) ITK, Mogadiscio, Italian Samoliland on 16.385 mc. heard phoning Rome, Italy, between 7:00 and 9:30 A.M. (Solito, Pa., Schmeichel, Ill. and Karpen, Pa.) Is on 18.33 mc. and heard at 2:00 P.M. Address is Comando Marine, Radio Telephone stations, Mogadiscio, (Dick, N. Y.) ICK, Tripoli on 9.46 mc. varies say they have two k.w. power, (Solito, Pa.) This one is heard very seldom, but works Rome, Italy. IUG, Addis Ababa, Ethiopia, on 15.45 mc. has been heard phoning almost daily 9:00 to 10:30 A.M., (Solito, Pa.) Heard daily at 9:00 A.M. (Schmeichel, Ill.) IUC, same place on 11.955 mc. is heard almost nightly between 11:00 P.M. and 2:00 A.M. next day. Also heard at 5:45 to 6:18 P.M. (Solito, Pa., Schmeichel, Ill. and Partner, Wash.) IDU, Asmara, on 13.38 mc. reported calling Rome between 11:35 A.M. and 12:30 P.M. (May, Pa.) Algiers, Algeria, operates on two frequencies, 8.96 mc. and 12.12 mc. and the address is 137 Rue de Constantine, Alger, Algeria. Some say the call-sign is FVA, but letters from the station say it is not. Heard on 12.12 mc. 5:45 to 6:35 A.M. one Sunday, (Solito, Pa.) On 8.96 mc. midnight to 4:00 A.M. (Partner, Wash.) EA9AH, Tetuan, Spanish Morocco, on 7:00 mc. is broadcasting rebel war news midnight to 2:00 A.M. (May, Pa.) Heard 7:50 to 8:30 P.M. and 12:00 to 1:30 A.M. (Solito, Pa.) On 7.02 mc. at 11:00 P.M. (Schmeichel, Ill.) On 42.80 meters 3.30 to 4:30 P.M. (Orchard, Eng.) On 7:00 mc. 4:00 to 5:30 P.M. (Rossi, Pa.) A station at Melilla, Spanish Morocco, on 45.60 meters between 4:00 and 5:30 P.M. sending news, (Orchard, Eng.)

ASIA

ZBW, Hong Kong, Asia, sends us a letter saying they are taking the transmitter on 8.75 meters off the air for good and will have the following frequencies, using a new, more powerful transmitter. ZBW2 on 49.26 meters, 6.09 mc. ZBW3 on 31.49 meters, 9.525 mc. ZBW4 on 19.75 meters, 15.19 mc. and ZBW5 on 16.90 mc. and 17.755 mc. The present schedule is as follows: Daily except Saturdays 11:30 P.M. to 1:15 A.M., Saturdays 9:00 P.M. to 1:30 A.M.; Tuesdays, Wednesdays and Fridays 3:00 A.M. to 10:00 A.M.; Mondays and Thursdays 4:00 to 10:00 A.M.; Saturdays 3:00 to 11:00 A.M., and Sundays 3:00 to 9:30 A.M. Stations ZBW3 and ZBW4 have been heard by a good many between 4:00 and 11:00 A.M. Only one of these stations is on the air at one time. Send reports to Box 200, Hong Kong. We have too many reports to mention names here.

XGOX, Nanking, China, on 6.82 mc. broadcasts week-days 5:30 to 9:40 A.M. and Sundays 7:00 to 9:00 A.M. according to schedule received, (Dick, N. Y.) Most listeners say they are on 6.85 mc.

CQN, Macao, Portuguese China, on 9.57 mc. broadcasts Mondays and Fridays from 7:00 to 8:30 A.M. Send reports to the postmaster at Macao. Chinese Phones. XOJ on 15.795 mc. phones England and Japan most any time. XGW on 10.42 mc. calls London at 5:00 A.M. often, and works

Japan around midnight to 5:00 A.M. Also heard at 9:00 A.M. XGN on 17.64 mc. heard around 7:00 A.M. and 10:00 A.M. phoning. XGM, Shanghai on 17.65 mc. was heard one Wednesday 7:00 A.M. calling London, first time reported. (Schmeichel, Ill.) A XGU, Shanghai, on 9.28 mc. was heard 4:00 to 7:00 A.M. (Karpen, Pa.) A phone XTC, Nanking, on 9.285 mc. worked Hankow 4:50 to 5:40 A.M. one Wednesday. (Solito, Pa.) Shanghai has been heard on 9.28 mc., 11.41 mc., 3.449 mc. and 5.74 mc. while Hankow has been on 11.70 mc., 9.08 mc. and 3.27 mc. phoning each other between 3:00 A.M. and 9:30 A.M. according to Mr. Walcott, of California. They, of course, use only one of each of these frequencies at a time. A station XQAJ or XQAK on 6.48 mc. at Shanghai was testing from 1:45 to 2:15 A.M. once, (Gallagher, Calif.) We also thank members Hodge, Schmeichel, Fey and Sparks.

Japan has three new short wave broadcast stations. JZJ is on 11.80 mc. and was heard 11:00 P.M. to midnight and from 4:00 to 5:00 P.M. JZK on 15.16 mc. was heard Mondays and Thursdays from 4:00 to 5:00 P.M. and Tuesdays and Fridays 2:00 to 3:00 P.M. relaying regular programs and between midnight and 10:00 A.M. testing. JZI on 9.535 mc. was heard Mondays and Thursdays 4:00 to 5:00 P.M. and Tuesdays and Fridays 2:00 to 3:00 P.M. and also testing between midnight and 10:00 A.M. They also have a station JZL on 17.785 mc. but it was not heard. Reports now should be sent to the Overseas Section, Broadcasting Corp. of Japan, Atagoyana, Shiba-Ken, Tokyo, Japan. (Eggenweiler, Schmeichel, Walcott, Turpin, Stark, Partner, Solito, Legge, Herzog, Balbi, Chamberlain, Rossi, Lindberg, Wooten, Hodge.)

Japanese Phones. JVH on 14.60 mc. still broadcasts midnight to 1:00 A.M. and is heard phoning from then till 9:00 A.M. JVE on 15.66 mc. phones KWU at 1:00 A.M., phones other stations between 6:00 and 11:00 P.M., and sometimes is heard 7:00 to 10:00 A.M. JVF on 15.61 mc. phones 6:00 to 10:30 P.M. and sent music once 7:00 to 9:30 A.M. JVN on 10.66 mc. broadcasts irregularly 1:30 A.M. to 7:40 A.M. JVO on 10.37 mc. phones at 1:00 A.M. and around 10:00 A.M. JVT on 6.75 mc. phoned at 4:00 A.M. and from 6:00 to 10:30 P.M. and sent music once 7:00 to 9:30 A.M. JVV was heard 5:20 to 6:00 A.M. once. JVM on 10.74 mc. was heard phoning around 6:00 A.M. and midnight. A station JFZ or JFZD on 45.11 meters or 6.65 mc. worked KWU at 9:00 P.M. once, (Gallagher, Calif.) Two stations, one on 4.30 and the other on 4.38 mc. phoned 6:00 to 8:00 A.M. once, (Walcott, Calif.)

TDE, Shinkio, Manchukuo, on 10.065 mc. phones Japan daily 11:00 P.M. to 9:00 A.M. Heard 5:00 to 6:00 A.M. (Solito, Pa.) JIB, Taiwan, Japan, on 10.53 mc. phones JVL, Japan, between midnight and 9:00 A.M. JIC, same city, on 5.98 mc. was heard phoning 5:20 to 6:00 A.M. (Solito, Pa.)

KZRM is not on short waves. For some time they tested over station KAZ on 9.97 mc. KAX on 19.98 mc. phones daily 6:00 to 8:00 P.M. KTO on 16.24 mc. is heard after 8:00 P.M. KAX sent a special program October 28th at 6:35 P.M. (Walcott, Calif.) The address of stations KBB and KZGF, mentioned some time ago, is Box 444, Manila (Walcott).

Java Broadcasts. Stations YDB on 9.65 mc., PLP on 11.00 mc., YDC on 15.15 mc. and PMN on 10.26 mc. are heard almost daily broadcasting from

5:30 to 11:00 A.M. YDA on 3.04 mc. is also heard sometime. PLP and PMN are also reported broadcasting between 6:00 and 7:00 P.M. in Europe. PMH on 6.72 mc. broadcasts week-days 5:30 to 9:30 A.M. and Saturdays 9:30 P.M. to 1:30 A.M., (Kolibonso, Java). Veries say PMH has 1500 watts power on 6.767 mc. and YDC has 3000 watts. PMH is heard on 6.72 mc. and YDC on 15.15 (Walcott, Calif.) After January first, send reports to the NIROM, and not to the telephone stations, since the telephone stations will not verify after that date.

Java Phones. PMA on 19.35 mc. phones Holland between 5:30 and 11:00 A.M. and sometimes sends music. PLE on 18.83 mc. and phones Holland between 5:30 and 11:00 A.M. and phones the U. S. A. and Japan between 6:50 and 8:00 P.M. PLV on 9.42 mc. is heard between 9:30 and 11:00 A.M. and 6:50 and 11:00 P.M. PMC on 18.135 mc. phones Holland between 5:50 to 6:15 A.M. YBA Menado, Celebes Islands is on 7.68 mc. phones PNI (8.775 mc.) between 5:50 and 6:10 A.M. (Walcott, Calif.). YBG, Sumatra, on 10.40 mc. phones Bandoeng between 4:45 and 6:00 A.M. A station PLX on 14.48 mc. was sending music and testing around 1:00 P.M. (Partner, Wash.)

RV15, Khabarovsk, Siberia, after going to 5.72 mc. is back on 4.25 mc. again, although they were much better on 5.72 mc. They broadcast 1:00 A.M. to 10:00 A.M. (Balbi, Walcott and Gallagher). RWJ, Alma-ata on 12.18 mc. phones Moscow around 6:00 A.M. RFL Khabarovsk on 13.19 mc. phones around 9:00 A.M. ROU, Omsk on 14.79 mc. is heard around 6:00 A.M. phoning. RRR, Khabarovsk, on 15.95 mc. is heard between 5:00 and 8:00 A.M. phoning. RVU, Vladvostok, on 13.79 mc. phones around 6:00 A.M. A station RTA on 12.88 mc. and one on 10.35 mc. and RTD on 13.365 mc. heard midnight to 1:00 A.M. (Schmeichel, Ill.) RTZ, Irkutsk, on 14.79 mc. heard 11:00 P.M. to 1:00 A.M. and one at Yakutsk on 13.40 mc. heard midnight to 1:15 A.M. and one on 12.88 mc. heard midnight to 2:00 A.M. (Karpen, Pa.) RVV on 10.35 mc. phoning 9:00 P.M. to 1:00 A.M. (Solito, Miller and Grey).

ZHI, Singapore on 6.01 mc. is reported again after many months. Heard at 10:00 A.M. (Gallagher, Calif.)

A verification from Establissement Boy-Landry, 211-213 D, Rue Catinat, Saigon, Indo-China, says the transmitter heard on 11.73 mc. is not F3ICD, but one made up from old Philco receiver parts. They have no call, and no license as yet. (Walcott, Calif.) This station was heard between 11.71 and 11.73 mc. between 5:30 and 9:30 A.M. for some time.

HS8PJ, Bangkok, Siam, broadcasts every Thursday from 8:00 to 10:00 A.M. on 9.35 mc. and every Monday 8:00 to 10:00 A.M. on 19.02 mc. That is what they sent to us. However, one member says it is 19.20 mc. instead of 19.02, (Partner, Wash.) Another says they changed the time to 7:00 to 9:00 A.M. in the middle of November, (Schmeichel, Ill.) And another says they broadcast just alternate Mondays (Shenton, England). Veries say they have 5000 watts power (Walcott, Calif.)

Colombo, Ceylon, broadcasts on 6.15 mc. from 5:00 to 10:00 P.M. their time which is 7:00 A.M. to noon our time, according to a magazine sent to us by U. L. M. M. Mohideen of Colombo. They are on until 1:00 P.M. Saturdays and start at 7:45 A.M. Sundays, these are the only variations

shown from the daily schedule above. Call is VPB, heard at 7:00 A.M. Saturdays on 6.08 mc., which differs in many ways from above information. (Karpen, Pa.) Is really on 49.46 meters and heard Saturdays until 12:45 P.M. (Orchard, England.)

YAA, Kabul, is on 71.00 meters and YAH, Herat, is on 58.42 meters and work each other on phone at times according to a letter from the Ministere des PTT, Kaboul, (Dick, N.Y.) YAA heard on 5.20 mc. at 8:30 A.M. once (Myers, Calif). This is Afghanistan.

VUB, Bombay, India, on 31.36 meters or 9.57 mc. broadcasts Tuesdays, Thursdays and Fridays 11:30 A.M. to 12:30 P.M., but it is seldom reported, even in Asia, at this time of day. It was heard one Sunday in November at 7:30 A.M. (Gray, Ill.) Veries from the telephone stations at Poona say VWY2 is the call on 17.48 mc. instead of VWY on 17.54 as we list it. Heard 7:30 to 8:30 A.M. often, (Solito, Pa.) VWY veries say 33.17 meters, not 33.41 mc. (Orchard, Eng.) Member Baynes of India, sends cards showing a VUC, Calcutta, on 49.10 meters, 6.11 mc. and a station at Mysore on 49.30 meters or 6.08 mc. The Mysore verie is signed by J. Pushparag, Wireless Station, The Palace, Mysore, and the Calcutta verie by A Pallot, Indian State Broadcast Servicem, Garstin Place, Calcutta.

THE EUROPEANS

PHI, Huizen, Holland, will move to 25.57 meters or 11.74 mc. and broadcast from 8:30 to 10:30 A.M. daily excepting Tuesdays and Wednesdays. This is a change in frequency and change in time. PCJ, Eindhoven on 19.71 meters or 15.22 mc. will broadcast Sundays 7:30 to 8:30 A.M., Tuesdays 4:30 to 5:00 A.M. and Wednesdays 8:00 to 11:00 A.M. PCJ on 31.28 meters or 9.59 mc. will broadcast Sundays 2:00 to 3:00 P.M. and 7:00 to 8:00 P.M., Tuesdays 1:30 to 3:00 P.M. and Wednesdays 7:00 to 10:00 P.M.

SM5SX, Stockholm, Sweden, on 25.63 meters or 11.71 mc. has 400 watts power and broadcasts once in a while. Heard Wednesdays 4:00 to 6:00 P.M. last month, (Karpen, Pa.) Schedule is 2:00 to 3:00 P.M. Wednesdays and 9:00 A.M. to 1:00 P.M. other days, (Croome, Mass.)

CSW, National Broadcasting Station, Lisbon, Portugal, is on 30.21 meters or 9.93 mc. with 5000 watts power and broadcasts from 4:00 to 7:00 P.M. daily according to a verification, (Pegge, England). Heard on 9.93 and 9:94 mc. changing. (Hafner, N.Y.; Barron, Scotland; Kash, Tenn.; Miller, Ky., and Smith, Ky.) Heard on 9.90 mc., (Hofmaster, Ohio, and Wooten, Ala.) On 9.787 mc., (Flagg, Mass.) Comes on at 3:15 P.M. daily, not 4:00, (Solito, Pa.)

CT1AA, Lisbon, moved to 11.848 mc. in October for two days then went back to what was supposed to be 9.65 mc. but they seem to have been roaming between 9.65 mc. and 9.739 mc. according to reports received. They announced 9.68 mc., (Wooten, Flagg, Miller, Solito and Hafner).

Belgrade, Yugoslavia, called YTC by some, sends their winter schedule as follows: Will be on 49.18 meters or 6.10 mc. 1:00 A.M. to 3:00 A.M. 6:30 A.M. to 8:15 A.M. and noon to 5:00 P.M. This comes direct.

SPW, Warsaw, Poland, on 13.63 broadcasts Mondays, Wednesdays and Fridays 11:30 A.M. to 12:30 P.M. They usually come on at 11:00 A.M.

and play records till 11:30, (Braunhold, Ill.) Sent special program to DJB and was relayed to the U.S.A. November 8th around noon, (Herzog, Schemichel and Walcott).

TFJ, Reykjavik, Iceland, broadcasts on 12.24 mc. Sundays 1:40 to 2:00 P.M. in English and then from 2:00 to 2:30 P.M. in German or Danish. Also phoned GBC 10:30 A.M. once. (Barron, Scot.) TFK on 9.06 mc. phoned GBC at 5:40 to 6:00 A.M. once, (Solito, Pa.)

The programs from France for December follow:

- 15.25 mc.—TPA2—2:00 to 2:55 A.M.; 5:55 to 11:00 A.M.
- 11.90 mc.—TPA3—2:00 to 5:00 A.M.; 12:15 to 6:00 P.M.
- 11.71 mc.—TPA4—6:15 to 10:15 P.M.; 10:45 P.M. to 1:00 A.M.

A letter from Pontoise says TY1 is on 19.22 mc., TY2 is on 13.76 mc. and TY4 is on 7.37 mc., (Beck, Ill.) TY12 is on 4.185 mc. and works ships and tests with Algeria, Tuesdays and Thursdays 7:00 P.M., 9:00 P.M. and 12:00 P.M. and Wednesdays and Fridays at 2:00 A.M., according to letter received, (Bradley, N.Y.) TYC on 13.00 mc. calls ships around 10:00 A.M. (Schmeichel, Ill.) TYA on 12.22 mc. sent program November 10th from 5:35 to 6:00 P.M. (Walcott, Calif.) TYA2 on 9.01 mc. sent news at 2:00 A.M. once (Karpen, Pa.) A new phone announcing frequency as 13.73 heard testing from 1:55 to 4:00 A.M. once, (Solito, Pa.) Veries from Pontoise says 25.23 meters and 25.60 meters, (High, England). Maybe so, but the above frequencies are the ones they are heard on.

The programs from England for December are:

- 21.47 mc.—GSH, 6:00 to 8:45 A. M. and 9:00 to noon.
- 17.79 mc.—GSG, 6:00 to 8:45 A. M.
- 15.26 mc.—GSI, 12:15 to 4:00 P.M.
- 15.18 mc.—GSO, 3:00 to 5:00 A. M.
- 15.14 mc.—GSF 9:00 A. M. to Noon.
- 11.75 mc.—GSD, 12:15 to 5:45 P.M.; 6:00 to 8:00 P.M.; 9:00 to 11:00 P.M.
- 9.58 mc.—GSC, 4:00 to 5:45 P.M.; 6:00 to 8:00 P.M.; 9:00 to 11:00 P.M.
- 9:51 mc.—GSB, 3:00 to 5:00 A.M.; 9:00 A.M. to noon; 12:15 to 5:45 P.M.
- 6.11 mc.—GSL, 6:00 to 8:00 P.M. Maybe GSB will be used instead.

The program from Germany for December follows:

- 17.76 mc.—DJE—12:05 to 5:15 A.M.; 5:55 to 11:00 A.M.
- 15.34 mc.—DJR—8:00 to 9:00 A.M.
- 15.28 mc.—DJQ— 6:00 to 11:00 A.M. Sundays 11:10 to 12:25 P.M.
- 15.20 mc.—DJB—12:05 to 5:15 A.M. 5:55 to 11 A.M. Sun. 11:10 to 12:25 P.M.
- 15.11 mc.—DJL—12 to 2 A.M.; 8 to 9 A.M.; 11:35 to 4:30 P.M. Sundays 6:00 to 8:00 A.M.
- 11.77 mc.—DJD—11:35 A.M. to 4:30 P.M.; 4:50 to 10:45 P.M.
- 9.54 mc.—DJN—12:05 to 5:15 A.M.; 4:50 to 10:45 P.M.
- 9.56 mc.—DJA—12:05 to 5:15 A.M.; 5:55 to 11:00 A.M.; 4:50 to 10:45 P.M.
- 6.02 mc.—DJC—11:35 A.M. to 4:30 P.M.; 4:50 to 10:45 P.M.

Germany also has experimental stations, DZA on 9.675 mc., DZB on 10.04 mc., DZC on 10.29 mc., DZE on 12.13 mc., DZG on 15.36 mc. and DZH on 14.46 mc. which may be used at times. DZC was heard at 5:00 P.M. once last month, (Flagg, Mass.) DJB on 15.20 mc. and DJO on 11.795 mc. sent special programs to U.S.A. last month for re-broadcasting, one being

November 11th around 2:00 P.M. (many). Station DJP on 25.31 meters or 11.85 mc. heard. (Lindbergh, Sweden.) A German phone station on 5.82 mc. heard 6:00 to 6:30 P.M. giving news. All German phones now begin and end conversation with salutation "Heil Hitler," (Flagg, Mass.)

IAC, Piza, Italy, works phone on 17.76 mc., 12.795 mc., 12.865 mc. and 6.355 mc., working with stations in Addis Ababa, Asmara, and with ships. IRF on 9.83 mc. relayed a special program to New York November 11th, 1:45 to 3:00 P.M. Solito, Pa.) IRW relayed a special once at 10:00 A.M. (Schmeichel, Ill.) IRW on 19.52 mc. sent a special November 1st, (Karpen, Pa.) IAC is heard daily at 8:00 A.M. on 17.697 mc. (Schmeichel, Ill.)

OLR, Podebrady, Praha, Czechoslovakia, is permitted to broadcast on 19.58 meters, (15.32 mc.), 19.69 (15.23 mc.), 25.26 (11.87), 25.51 (11.75), 49.05 (6.11), and 49.92 (6.01). They use these frequencies irregularly and you can never tell when or where you will hear the station. Lately they have been on 11.87 from 2:30 to 4:30 P.M. and Mondays, Wednesdays and Thursdays 7:00 to 9:00 P.M. Also reported on 15.23 meters or 21.45 mc. 5:00 to 7:00 A.M. and on 15.23 mc. 9:00 to 2:00 P.M. according to W. Partner of Washington. Heard near 31 meters at 5:00 P.M. daily, (Morgan, England). Uses deep-toned bells when signing on and off, (Hofmaster, Ohio). Station is heard all over the world and we have hundreds of reports.

Russia. The programs scheduled for December are:

On 9.59 mc. daily 7:00 to 7:30 P.M.

On 12.00 mc. Sundays 6:00 to 7:00 A.M., 10:00 to 11:00 A.M. and 4:00 to 6:00 P.M., Mondays 4:00 to 5:00 P.M., Wednesdays 6:00 to 7:00 A.M. and Fridays 4:00 to 5:00 P.M.

On 15.08 mc. Sundays from 10:00 to 11:00 A.M. and 1:30 to 2:00 P.M.

The station on 12.00 mc. broadcasts in several languages each day from 2:00 to 5:00 P.M. The above schedule is the English-speaking program only. A letter advises us that the writer of every tenth letter opened will get an illustrated journal "U.S.S.R. in Construction." Every reporter will receive a photo of some Soviet leader, Soviet stamps or postcard views of Moscow. It seems like RAN likes to move around. At first it was on 9.52 mc., then it went to 9.59 in August and now seems to be on just about 9.60 mc. They still announce 31.51 meters, however. The station on 15.17 mc. is called RV96. Testing on 12.00 mc. and 15.08 mc. Saturdays 9:00 to 11:00 A.M., (Gullberg, Sweden).

Russian Phones. RNE, Moscow, on 12.00 mc. may be heard most any time of the day or night. RKI, Moscow, on 15.04 mc. is heard between 3:00 and 10:00 A.M. We list it on 15.09 mc. but it is on 15.04 mc. (Walcott, Calif.) RIM, Tashkent on 15.25 mc. is heard 5:00 to 9:00 A.M. ROU, Bakou, on 10.17 mc. and RIR, Tifis on 10.07 may be heard between 10:00 P.M. and 4:00 A.M.

IBDK on the S. S. "Electra," Senatore Marconi's yacht was heard on 11.47 mc. calling Rome and New York, from 2:15 to 2:45 P.M. November 11th, (Solito, Pa.)

EAQ, Madrid, was on 9.86 mc. broadcasting from 5:15 to 9:30 P.M. Suddenly they disappeared. Then just as suddenly they were heard on 10.07 mc., then 10.15 mc. and then 9.95 mc. and then back they went to 9.86.

Heard at 5:00 P.M. and up till 1:00 A.M. testing with RNE, Moscow. Member Ed. Schmeichel claims that the rebel army put up a station at Aranjuez on 9.86 mc. so EAQ moved to 10.07 mc., and EAQ is there daily now. We also thank members Cazabon, Morgan, Stark, Croome, Flagg, Kash and Moots.

EAH, Madrid, on 31.65 meters or 9.48 mc. broadcasts war news daily 4:00 to 5:00 P.M., using English mostly. A lady does the talking most of the time, (Flagg, Mass.; Sloper, England).

EALAZ, Coruna, Spain, on 41.50 meters, 7.15 mc. heard from 2:55 to 3:30 P.M. Radio Journal on 42.68 meters heard 3:00 to 5:00 P.M. Trades Union Council, Madrid, on 40.32 meters and 31.65 heard 4:00 to 5:00 P.M. (Orchard, England). EA1BT on 7.10 mc. and EA1CH on 7.10 mc. heard between 7:00 P.M. and midnight giving war news, (Lips, Pa.) ENC1, Barcelona on 42.8 meters heard at 5:30 P.M. (Morgan, England). EHY, Madrid, is on 10.07 mc. according to member Miller. EDR4 at Palma, Majorca, Balearic Islands, on 6.535 mc. is calling Spanish stations evenings now, (Rossi, Pa.)

Switzerland. HBH is on 16.22 meters, 18.48 mc., HBJ is on 20.64 meters, 15.54 mc. HBO is on 26.31 meters, 11.402 mc. HBL is on 31.27 meters, 9.595 mc. HBP is on 38.47 meters, 7.797 mc. HBL and HBP broadcast every Saturday from 5:30 to 6:15 P.M. and the first Monday of each month from 4:00 to 7:00 A.M. A station HBF is reported on 18.45 mc. A card says HBO is used Mondays 1:30 A.M., HBL and HBP the first Monday from 7:00 to 8:00 P.M., and HBF and HBH are commercial stations. HBL and HBP heard first Monday 8:15 to 8:45 P.M. Thanks for this news goes to members Flagg, Hofmaster, Diamond, Atherton and Solito.

SOUTH AMERICANS

Colombia has many short wave stations. Broadcasters are HJ1ABP on 9.61 mc., HJ2ABC on 9.57 mc., HJ1ABB on 9.56 mc. (Also on 6.45 mc. at times), HJ4ABH on 9.53. HJU on 9.51, HJ1ABE on 9.50, HKE on 7.22, HJ4ABC on 6.45, HJ2ABA on 6.17, HJ3ABX on 6.12, HJ4ABB on 6.10, HJ4ABE on 6.09, HJ5ABD on 6.08, HJ3ABF on 6.07, HJ4ABL on 6.06, HJ3-ABD on 6.05, HJ1ABG on 6.05, HJ4ABP on 6.03, HJ1ABJ on 6.02, HJ3ABH on 6.01, HJ1ABC on 6.00, HJN on 5.97, HJ4ABD on 5.94 and HJA-7 on 5.40 For details and schedule, turn to our station list. Of these stations, HJ1ABP, HJ2ABC, HJ1ABB, HJ4ABH, HJ1ABE, HJ1ABJ and HJ4ABD may be considered reliable. Colombia also has the following telephone stations: HJB on 14.94, HJA3 on 14.94, HJY on 13.65, HKB on 9.93, HJP on 7.42, HKV on 9.79, HJA on 6.41 and HJA2 on 5.83 mc.

Another station with the call HJ1ABE is at Sincelejo. It is on 7.10 mc. and heard around midnight. It is called "La Voz de Sinceljo" and is owned by Eugenio, Quintero Avosta. Verie received, (Siddle, Ala.) This must be an amateur. The real HJ1ABE at Cartagena on 9.50 mc. is supposed to broadcast 7:30 to 9:30 P.M., but is heard as early as 6:15 P.M. (Stark, Mo.; Morgan, England.)

HJ1ABJ on 6.025 mc. say they broadcast daily 11:30 to 2:00 P.M. and

5:30 to 10:30 P.M., but reported at 7:00 to 7:45 A.M. (Walcott, Calif.)

HJ1ABP on 9.60 mc. is heard between 7:00 A.M. and 11:00 P.M. now, although veries say different. Heard signing off at 10:00 P.M., too, (Teague, Kash, Atherton and Grey).

HJ2ABC, Cucuta, started commercial broadcasting last month on 9.575 mc. It is heard between 6:45 and 11:00 P.M., although they may start later and end earlier than this, (Walcott, Gallagher, Flagg, Soneira, Rossi, Solito, Hafner, Eggenweiler). They use a five-note chime.

HJ2ABD at Bacaramanga, has moved to about 9.63 mc., although they have roamed from 9.62 to 9.82 mc. during the past month. Tune for them between 7:30 and 10:00 P.M. (Oxrieder, Gallagher, Verbrughe, Flagg, Moots, Miller, Schmeichel, Walcott, Neve and Hersowitz).

HJ3ABX, "La Voz de Colombia," at Bogota, sends veries saying they are on 6.122 mc., 10:30 A.M. to 2:00 P.M. and 5:30 P.M. to 11:30 P.M. week-days, and noon to 1:30 and 6:00 to 11:00 P.M. Sundays. Address is Apartado 2665, (Kash and Siddle). Signed off once at 8:15 P.M. (Stark, Mo.)

HJ4ABD, Medellin, moves around a lot. Last month they were on 6.133 mc. But were heard late in the month on 6.03 mc. testing between midnight and 12:30 A.M. (Herzog, N. Y.)

HJ4ABH, Armenia, Caldas, is on 9.52 mc. broadcasting most evenings between 6:00 and 10:00 P.M., relaying station HJ4ABM or N. This one is heard quite well now and is a new station, (Gallagher, Flagg, Rossi, Solito, Moots, Walcott, Neyland, Kash, Soneira and Oxreider). Uses cuckoo call.

HJ4ABU, Pereira, veries say they are on 48.78 meters, 6.15 mc. daily 9:30 A.M. to noon, and 6:30 P.M. to 10:00 P.M. (Siddle, Ala.) Another says 9:00 A.M. to noon and 6:00 to 10:00 P.M. (Kash, Tenn.)

HJU on 9.51 is heard Mondays, Wednesdays and Fridays 8:00 to 11:00 P.M. my many. Heard once till 11:45 P.M. (Solito, Pa.) Off at 10:00 P.M. once, (Flagg, Mass.) HKV, Bogota, on 34.10 meters, 8.79 mc., broadcasts regularly Mondays and Thursdays 7:00 to 7:30 P.M. (Morgan, England). Heard at 5:00 P.M. giving news, (Herzog, N.Y.) Address of HJN is Teatro de Colon, No. 5-28. Says 50.35 meters, not 50.26, (Stark, Mo.) HJP on 7.42 mc. phoned WET, New York, once at 8:15 P.M., then went on HJB on 14.94 mc. (Waite, N.Y., and Child, Pa.) An HJK (new one) on 7.52 mc. was heard working HJU 10:15 to 10:25 P.M. once, (Moots, Mo.)

YV1RG—1RH—1RV—1RF and YV7RMO. It will take some space to tell about all these, but it must be told. Some time ago station YV7RMO, Maracaibo, Venezuela, appeared on 6.07 mc. and then suddenly disappeared. A few weeks later a station YV1RG was heard near 6.35 mc. At the same time we received reports giving the call as YV1RH, YV1RF, YV1RV and YV1RS. Slogans "Ondas del Lagos," "Radio Philco" and "Radio Valera" was reported. A member in Maracaibo sent word that this was station YV7RMO on a new frequency using a new call. Anyhow, here is the way things turned out. YV7RMO is back on 6.07 mc. so it is not YV7RMO. YV1RG, "Ondas del Lagos," was on long waves, 1.12 mc. It was relayed by YV1RH, "Radio Philco." Another station altogether was at Valera using the call YV1RV. Part of the time YV1RH was on one side of YV1RV and

part of the time on the other, as neither station settled right down to one frequency. Now, however, YV1RH is on about 6.39 mc. Reports to YV1RG —YV1RH brought veries saying YV1RH was on 6.35 mc. and they relayed YV1RG. Suddenly the Valera station started using the call YV1RG instead of YV1RV and the long wave station YV1RG dropped that call for YV1RF. So, now we have it. YV1RF is on 1.12 mc. YV1RH on 6.39 (announces and veries say 6.35) and YV1RG, Valera, is on 6.35. Veries from YV1RH shows address as Box 261, Maracaibo, and the owner as Nicolas Vale Quintero, (May, Soneira, Rossi, Forestieri, Miller, Gallagher, Siddle). Veries from YV1RG shows the owner as J. L. Febres Jelambi, the address as Valera, Eduardo Trujillo and the schedule 5:30 to 6:30 P.M., E.S.T. (Rossi and Forestieri). For the information that YV7RMO is back on 6.07 mc. from 6:00 P.M. till 11:00 P.M. and the address as Box 100, we thank these people, (Rossi, Legge, Oxrieder and Flag).

YV15RV, Valencia, Venezuela, is testing now on approximately 5.91 mc. This is a new transmitter and it has been heard between 5:00 P.M. and 2:00 A.M. The transmitter, according to what the editor heard announced, is at Maracay, but it will be set up at Valencia soon. They announce as "Laboratories franco Venosolona" (Solito, Pa., Gallagher, Calif., Legge, N.Y., Rossi, Pa., Fields, Calif.) Maybe the call is YV15RC.

YV5RP, "La Voz del Philco" in Caracas, is a station on 6.27 mc. (Oxrieder, Pa.) YV6RV, Valencia, moved to 5.92 mc. and was heard 1:20 to 1:45 A.M. once, (Stark, Mo.) Phones YVQ on 13.345 mc. and YVR on 9.14 mc. sent special programs to the U.S.A. last month, (Beck, Child).

Venezuela, also has YVQ on 6.67 mc., YV9RC on 6.40, YV11RB on 6.54, YV6kV on 6.52, YV12RM on 6.30, YV3RC on 6.16, YV8RB on 5.90, YV5RMO on 5.85, YV2RC on 5.80, YV1ORSC on 5.72. For details turn to the station list. YV8RB is scheduled 6:00 to 10:00 P.M. but was heard at 5:00 P.M. once, (Flag, Mass.) YV9RC is heard usually till 11:00 P.M. but signed off once at 9:30 P.M. according to Dr. Kash.

PZH, Paramaribo, Dutch Guiana, on 7.00 mc. is broadcasting daily now from 5:30 to 8:00 P.M. (Solito, Pa.)

LRU, Buenos Aires, Argentina, on 15.29 mc. broadcasts from 7:00 A.M. to 4:50 P.M. and LRX on 9.66 mc. broadcasts from 5:00 P.M. to 9:00 P.M. according to cards they send out. But they do not live up to this. LRX was heard at 4:30 P.M. (Morgan, Eng.) LRU is heard till 5:30 P.M. often. (Teague, Mich.; Nichols, Pa.) LSX on 10.35 mc. broadcasts Mondays and Fridays 4:00 to 6:00 P.M. (Stark, Mo.) Every Friday at 5:00 P.M. (Hersowitz, Md.) LSX is heard many times between 5:00 P.M. and 11:00 P.M. testing. LQA on 9.70 mc. sent a program to New York 8:00 to 8:30 P.M. (Nichols, Pa.)

PRF5, Rio de Janeiro, Brazil, on 9:50 mc. broadcasts daily 4:45 to 5:45 P.M. PR8A, same city, on 6.025 mc. broadcasts week-days 4:30 to 8:00 P.M. PPQ on 11.71 sent a special program at 8:00 P.M. once last month, (Schmeichel). On 11.66 mc. instead of 11.71 sending special 10:30 to 11:00 P.M. (Moots, Mo.) PRF5 sent special November 19th, 10:30 to 11:00 P.M. (Karpen, Pa.)

VP3MR, Georgetown, British Guiana, on 49.92 meters, 6.01 mc. (announced) broadcast week-days 5:45 to 8:45 P.M. and Sundays 7:45 to 10:15

A.M. Signed off one Thursday at 9:05 P.M. and one Tuesday at 7:25 P.M., so are not on schedule, (Flagg, Mass.) Heard on 6.005 mc. saying 6.012, (Flagg). Announced 49.19 meters, instead of 49.90 and tested till 11:30 P.M. November 18th on this wave, (Spuhler, Ohio). Heard till 9:05 P.M. (Barron, Scotland).

HCK, Quito, Ecuador, is back on the air on 7.52 mc. with a new powerful transmitter. Worked HCT, Guayaquil, 7:00 to 8:30 P.M. once. HCT not heard, (Rossi, Pa.)

Prado, Rio Bamba, Ecuador, on 15.45 mc. has been testing till 9:00 P.M. (Partner, Wash.) Heard on 15.44 mc. between 5:00 and 7:00 P.M. (Hodge and Balbi, Calif.) Prado broadcasts on 6.62 mc. Thursdays 9:00 to 11:00 P.M. HC1PM, Quito, the new station, is on 5.725 mc. or 5.735 mc. now instead of 7.01 mc. They broadcast and give the address as J. Leonard Ponce, Apartado 664. Heard 9:00 to 10:30 P.M. (Rossi, Pa.) Worked amateurs 11:00 P.M. to midnight, (Legge, Pa.)

HC2JSB, Guayquil, after moving to 9.51 mc. is back on 7.854 mc. now. The schedule is 11:00 A.M. to 2:00 P.M. and 4:00 P.M. to 11:00 P.M. (Solito, Rossi and Oxrieder).

HC2CW, Guayaquil, "Ondos del Pacifico," verifications say the address is Box 1166, the frequency 8.404 mc. and the schedule weekdays 11:30 A.M. to 12:30 P.M. and 7:00 P.M. to 11:00 P.M. and Sundays 3:00 to 5:00 P.M. Ecuadorian Time, (Kash, Tenn.) Heard on 8.21 mc. (Flagg, Mass.) On 8.247 mc. and heard till 11:36 P.M. (Waite, N.Y.)

OAX4G, Lima, Peru, say they are on 6.23 mc. and broadcast daily from 7:00 to 10:00 P.M. OAX4D, Lima, on 5.78 mc. broadcasts Wednesdays and Saturdays from 8:00 to 11:30 P.M. Nothing has been heard of OAX4J which was supposed to open in August on 6.00 mc.

Radio Electrico de Montevideo, at Montevideo, Uruguay, in a letter to W. H. Chippendale of Asuncion, Paraguay, says they are on 49.98 meters or 6.125 mc. but gives no schedule. The letter was from Director Hector M. Laborde and the address is Mercedes 823. The station is heard around 5:00 P.M. Mr. Hesselman of South Africa, reports this station ever since May between 3:30 and 9:00 P.M. broadcasting.

CED, Antogfagasta, Chile, say they have 500 watts power and they phone CEC Santiago, Chile, weekdays from 8:00 A.M. to noon and 2:00 P.M. to 9:00 P.M., Sundays 8:00 to 11:00 A.M. and 4:00 to 9:00 P.M. and relay news broadcasts daily except Saturdays and Sundays at 7:15 P.M. The verification came from Compania de Telefonos de Chile, Antogfagasta (Walcott, Calif. and Legge, Pa.) It is reported around 7:00 to 7:15 P.M. by many. CEC Santiago on 10.67 mc. is also heard from 7:00 to 7:15 P.M. CB960 in the same city on 9.60 mc. broadcasts between 8:00 and 11:00 P.M. They said they had a station CB615 mc. also and the address is Apartado 1342, (Fey, N.Y.) CB615 is heard around 5:00 P.M. (Chippendale, Paraguay).

CP6, La Paz, Bolivia, after a long silence was heard broadcasting a special program on 9.02 mc. one Saturday at 11:45 P.M. (Schmeichel, Ill.)

CENTRAL AMERICANS

A letter signed by Victor Federico Hemmer S. says that they operate two stations under the calls XEKL and XEKM, one is on long waves and the other on 49.55 meters, or 6.05 mc. The address is apartado 181, Leon, Gto, Mexico. The power is 100 watts and no schedule was given. This station has never been reported to us, so it must not be on the air yet.

XBA, Tacubaya, D. F., Mexico, on 43.00 meters, 6.977 mc. sends out weather reports from 9:30 to 1:00 P.M. and broadcasts programs from 7:00 to 8:30 P.M. daily. This news was sent by Sr. Jose C. Gomez, Servicio Meterologico Mexicano, Tacubaya, D. F. Mexico. Heard broadcasting 9:15 P.M. (Stark, Mo.) Sent weather reports 11:15 to 11:30 P.M. (Schmeichel, Ill.)

XBC, Vera Cruz, on 45.80 meters, 6.55 mc., say they broadcast daily at 8:15 A.M., 9:00 A.M., 11:00 A.M., 6:00 P.M. and 8:00 P.M., sending out weather reports and news. This is Observatorio Meterologica, Vera Cruz. Heard broadcasting programs 7:00 to 8:30 P.M. (Siddle). Heard 8:00 to 9:00 P.M. several times, and once at 5:00 P.M. (Gallagher, Calif.)

XEXA, Mexico City, on 6.18 mc. is operated by the Department of Education and reports should be addressed to the Secretary of Education. The schedule says they relay XEXM week-days only, 6:00 to 9:00 A.M., 1:00 to 2:45 P.M. and 5:00 to 9:00 P.M. A station XEXO or XEXA is also heard on about 15.36 mc. broadcasting around 11:00 A.M., 3:00 P.M. and 8:00 P.M. according to reports. On 15.22 mc. 8:00 to 10:30 P.M. (Hodge, Calif.)

XEWI, Mexico City, on 11.90 mc. broadcasts Mondays 3:00 to 4:00 P.M.; Tuesdays and Thursdays 7:30 to 8:45 P.M. and 10:30 P.M. to midnight; Wednesdays 3:00 to 4:00 P.M.; Fridays 3:00 to 4:00 P.M. and 9:00 P.M. to midnight; Saturdays 9:00 to 11:00 P.M. and Sundays 1:00 to 2:15 P.M. Power is 250 watts, address is Box 2874, (Hofmaster, Ohio).

XEME, La Voz de Yucatan, Merida, Yucatan, Mexico, sends us a card saying they are now on 8.19 mc. from 10:30 A.M. to 3:00 P.M. and 6:30 P.M. to 11:00 P.M., E.S.T. They have a nice verie card and want reports. The address is XEME, 59 No. 517, Merida.

Mexican Phones. XDC, Mexico City, on 9.40 mc. heard at 6:15 P.M. (Flagg, Mass.) XDIB on 9.43 heard at 4:00 P.M. (Schmeichel, Ill.) XDIB must be XDC (Ed.). XAP, Villa Hermosa on 8.69 mc. heard 6:30 to 7:30 P.M. phoning, (Siddle, Ala., and Moots, Mo.) A station XEHZ on 6.57 mc. heard 6:30 to 7:00 P.M. (Moots). An XETU, Guadalajara, Jalisco, is on 49.37 meters, 6.075 mc. daily 8:00 to 9:00 P.M. The address is Ave. Hidalgo 579 (Neve, Mexico) This may be a broadcaster not a phone.

TGWA, Guatemala City, on 9.45 mc. is broadcasting nearly every night now between 9:00 P.M. and 1:00 A.M. And every Saturday night at 10:00 P.M. they start a program that ends at 6:00 A.M. Sunday mornings. They relay TGW. A verie says they have 200 watts power. Heard every other day at 7:00 A.M. now, (Grey, Ill.)

TG2X, Guatemala City, on 5.94 mc. sent out two different schedules on their cards. Now Mr. Stark says they have a third one. He says they are on the air daily 2:00 to 4:00 P.M. and also Mondays, Tuesdays, Thurs-

days, and Saturdays from 10:00 P.M. to midnight. And to top it off, they were heard at 1:00 A.M. once last month.

HRP1, San Pedro Sula, Honduras, after months of silence is reported again on 6.35 mc. The schedule is noon to 2:00 P.M. and 7:45 to 10:00 P.M., C.S.T., which is one hour later than E.S.T. (Eady, England). Heard till 9:45 P.M. (Eder, Minn.) On 6.37 at 9:30 P.M. (Kash, Tenn.) HRD, La Ceiba, Honduras, on 6.235 mc., "La Voz de Atlantida," is a dandy station broadcasting daily 8:00 to 11:00 P.M. and Sundays 4:00 to 6:00 P.M. HRN, on 5.87 mc. is heard between 7:30 and 10:00 P.M. HRN will not verify.

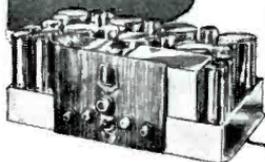
YNOP, Managua, Nicaragua, "Radiodifusora Bayer," is a new station heard on 5.72 mc. broadcasting from 8:00 to 10:00 P.M. It is owned by Ernesto Andreas, who also owns YN1OP (Schmeichel, Ill.) Announced 5.758 mc. and heard 9:00 to 10:30 P.M. (Rossi, Pa.)

YNLF, Managua, could easily be called the editors nightmare, for, they move around from one day to the next. Last month they were reported on 9.5 mc., 9.66 mc., 7.30 mc., 7.70 mc., 7.58 mc. and 7.55 mc. Not only that, but they announce one schedule, send out three others and don't keep any of them. So that is all we can say. (Moots, Siddle, Rossi). A station YNVA on 8.50 mc., not 8.64 mc. as listed, heard 8:00 to 9:00 P.M. (Flagg, Mass.) Station YNAR or YNAN, a new one called "La Voz de la Pacifico," heard on 7.20 mc., from 8:20 to 8:45 P.M. signing off with "Washington Post March." (Stark, Mo.) This is YNAM, Managua, and heard 8:30 to 10:15 P.M. (Siddle, Ala.) YN1GG, "La Voz de Los Lagos," on 6.57 mc., heard 8:20 to 9:25 P.M. signing off with "Blue Danube." (Stark, Mo.) YNGU, "Alma Nica," Managua, is on 9.30 mc. from 1:00 to 2:55 P.M. and 6:00 to 7:00 P.M. daily and noon to 1:00 P.M. Sundays according to replies. YNLAT, "La Voz del Mombacho," at Granada, on 7.20 broadcasted one Saturday 9:00 to 10:00 P.M. (Schmeichel, Ill.) A station YNMG, Managua, was heard on 8.56 mc. calling Cartagena from 10:30 to 10:45 P.M. once. YN1GG was heard on 6.58 mc., 8:00 to 10:15 P.M. (Moots, Mo.)

Panama. HP5B, Panama City, on 49.75 meters, 6.03 mc., broadcasts Noon to 1:00 P.M. and 7:00 to 10:30 P.M. HP5F, Colon; on 49.34 meters; 6.08 mc., broadcasts weekdays 11:45 A.M. to 1:15 P.M. and 7:45 P.M. to 10:00 P.M. and Sundays 10:45 to 11:30 A.M. and 4:00 to 6:00 P.M. The address is Box 423 (Flagg and Siddle). HP5J, Panama City, on 31.28 meters, 9.59 mc., broadcasts 7:30 to 10:00 P.M. weekdays and 2:00 to 3:00 P.M. Sundays, they say, while it is reported at 7:00 P.M. and 11:00 P.M. by W. D. Flagg, Mass. HP5K, Colon, on 49.96 meters, 6.005 mc., broadcasts 7:30 to 9:00 A.M., Noon to 1:00 P.M. and 6:00 to 9:00 P.M. relaying HP5O, "La Voz del Victor." The address is Box 33. The address of HP5J is Apartado 867, Panama City. HP5J starts at 6:30 instead of 7:30 P.M. now. (Gallagher, Calif.) HP5B signs off at 10:00 P.M., not 10:30 P.M., and relays HP5C. Also heard one Friday at 6:00 P.M. instead of starting at 7:00 P.M. (Flagg, Mass.)

Costa Rica. Costa Rica has TI4NRH on 9.67 mc., TI8WS on 7.55 mc., TIEP on 6.71 mc., TI2M on 6.70 mc., TIPG on either 9.59 or 6.41 mc., TIGPH on 5.82 mc. and TI5HH on 5.48 mc. There is also reported stations TI4WX, Heredia, on 7.00 mc.; TIOW, Port Limon, on 6.85 mc., but neither

SENSATIONAL *New* SCOTT "MAGIC LINK" CONQUERS "Man-Made" STATIC



23 Tube High Fidelity SCOTT *Equipped*
with "MAGIC LINK" IN AMAZING DEMONSTRATION
PROVES QUIET FOREIGN RECEPTION
NOW POSSIBLE IN BAD RECEIVING LOCATIONS

On Wednesday, October 7, 1936, at the SCOTT Radio Laboratories, a small group of radio engineers and short wave enthusiasts were shown, for the first time, the latest development of the SCOTT Research Laboratories. They intently watched two radio sets at one end of a room—both connected to the same lead-in with a two-way switch, and both tuned in to DJB, Germany, 15.20 megacycles.

Germany Blotted Out

Suddenly, within three feet of these receivers, a terrific barrage of interference was turned on—from a violet ray machine, vacuum cleaner and automobile ignition coil, buzzing out streams of "man-made" static! What happened? From one receiver came a deafening roar such as you would hear in a boiler factory—and the program from Germany was completely blotted out!

Clear With "Magic Link"

The two-way switch on the antenna was then thrown to the 23-tube SCOTT equipped with

the sensational new "MAGIC LINK", the SCOTT Supershield Antenna Coupling System, and from Germany, over 4,000 miles away, the program came in as crystal clear, strong and enjoyable as a local station—all without the slightest trace of "man-made" static from the violet ray machine, vacuum cleaner and spark coil, each crashing and spluttering only three feet away from the antenna lead-in.

Quiet Foreign Reception Now Possible for First Time in Many Locations

The climax of 8 years of tireless research, this sensational new development means that "man-made" static on the short waves, caused by electrical appliances and picked up on the lead-in has, for the first time, *been conquered without loss of signal strength!* Up to this time foreign reception from England, Germany, France, Italy and many other foreign stations has been spoiled for thousands of residents of apartment build-

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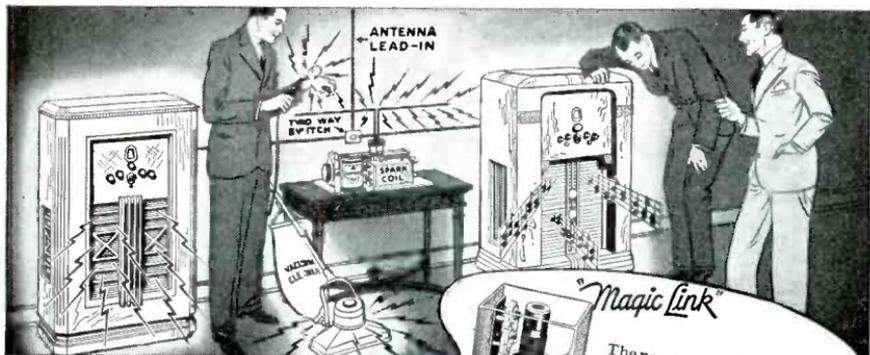
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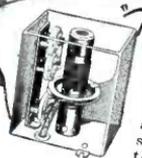
WHAT SCOTT SUPERSHIELD ANTENNA COUPLING SYSTEM ACCOMPLISHES

1. Doubles sensitivity or distance-getting ability of antenna and receiver combination, as compared with best results with any previous noise-reducing antenna with inefficient shielded coupler.
2. Improves antenna lead-in signal to noise ratio by 100 to 1.
3. Eliminates shielded coupler switch. Switching from broadcast to short wave bands is automatic with SCOTT Supershield Antenna Coupling System.

ings, hotels and homes by the static from electrical appliances picked up on the antenna lead-in. Now these programs can be heard clearly and quietly with the 23-tube SCOTT equipped with the new SCOTT Supershield Antenna Coupling System.

Compare In Your Own Home

We invite you to make a 30-day side-by-side comparison test of the SCOTT against any other receiver, regardless of price. If the SCOTT does not bring in foreign and domestic stations with more volume, greater clarity, and with finer and more natural tone, we will refund your payment price without question.



"Magic Link"
The new SCOTT Supershield Antenna Coupling System—100 times more effective than any other "noise reducing" system in slashing away from the lead-in "man-made" static so disturbing to enjoyable, dependable foreign reception.

It is impossible to describe the sensational increase in listening pleasure which this new development now makes possible. Only by an actual *listening test* can you appreciate how much more enjoyably foreign short wave stations can now be received on the 23-tube SCOTT.

Send TODAY for complete proof — and full description of this remarkable new development that now makes possible in conjunction with the 23-tube FULL RANGE HIGH FIDELITY SCOTT Receiver, unparalleled tone, and distance performance in every continent of the globe. Discover this vast new world of radio entertainment you will never hear without a SCOTT. SEND COUPON NOW.



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Name.....

Address.....

City.....State.....

are reported often. Some say TIEP is on 6.68 mc., others 6.71 mc. The schedule is 5:00 to 10:00 P.M., but was heard until 10:30 P.M. last month. (Stark, Mo.) And until 11:40 P.M. once. (Will, Ill.) TI4NRH varies say 150 watts power and schedule is daily 8:00 to 9:00 P.M., C.S.T., which is 9:00 to 10:00 E.S.T., but heard up till 1:30 A.M. (Stark, Mo.) TI8WS is heard on 7.55 mc., not 7.60 mc. Announced this frequency, too. Heard until 10:00 P.M. one Saturday. (Flagg, Mass.) TI2M broadcasts on 6.79 mc., not 6.70 mc. Heard 8:00 to 9:40 P.M. Gave address as Apartado 26, San Jose. (Moots, Mo.) TIPG heard on 9.59 mc., not 9.55 mc. (Flagg, Mass.) Heard on 31.295 meters. (Orchard, England.)

WEST INDIES

The Dominican Republic, a small island in the West Indies, with 1,124,422 inhabitants can boast of twenty broadcast stations on the short waves. We do not know how many long wave stations they have. Here is the list: HI1J on 5.86 mc. HI3U on 6.01 mc. HI9B on 6.05 mc. HIX on 6.13 mc. HI5N on 6.15 mc. HI1A on 6.19 mc. HI8Q on 6.24 HIN on 6.24 mc. HI9 on 6.28 mc. HI2 on 6.31 mc. mc. HI1S on 6.42 mc. HI8A on 6.45 mc. HI4V on 6.48 mc. HIL on 6.50 mc. HI4D on 6.55 mc. HIT on 6.63 mc. HI3C on 6.73 mc. HIH on 6.78 mc. HI7P on 6.80 mc. HIN on 11.28 mc. For the schedule of these stations, please turn to our station list. Below we mention some of the schedules and recent changes made.

HIN on 6.243 mc. broadcasts 11:40 A.M. to 1:40 P.M. and 7:10 to 9:10 P.M. Then they are also on 11.28 mc. from 4:40 to 5:40 P.M. We have had hundreds of reports on this station, so must skip the names.

HI3C. LaRoman, on 6.73 mc. say they have 50 watts power and broadcast daily 12:10 to 2:10 P.M. and 6:10 to 7:40 P.M. We also understand they are on the air on Sundays 12:40 to 2:40 P.M. (Rossi, Myers and Stark).

HIH was heard on 6.78 mc. in October. Now it is on 6.67 mc. saying 6.78 mc. between 5:50 and 6:40 P.M. (Stark, Mo.) Heard on 6.77 mc. (Solito, Pa.) HIT was heard until 9:30 P.M. instead of signing off at 8:40 P.M. (Barron, Scotland.) HI4D has moved from 6.64 mc. to 6.55 mc. and is heard until 9:15 P.M. instead of signing off at 7:40 P.M. (Stark, Mo.) HI4V verie says they are located at San Francisco de Macoris now instead of Trujillo. (Siddle, Ala.) They are on 6.475 mc. and they broadcast from 5:00 to 10:00 P.M. Heard one Saturday until 10:40 P.M. (Legge, Pa.)

HI2T or D, Trujillo, is a new station. Their slogan is "La Voz de la Association Catolica." It is on about 43.48 meters or 6.90 mc. although it was reported on 6.78 mc. and 6.91 mc. It was heard between 7:00 and 9:40 P.M. by members. Kash, Tenn.; Schmeichel, Ill.; and Rossi, Pa.)

HI8A. Jaime A. Rodriguez G., director of this station tells us they are on 6.45 mc. They use the slogan "La Fadoc en el Aire" and they have 100 watts power and operate daily 8:40 to 10:40 A.M.; 2:40 to 4:10 P.M.; Saturdays 9:40 to 10:40 P.M., and Sundays 2:40 to 4:40 P.M. Heard on 6.36 mc. Address is apartado 1302. Heard on 6.48 mc. one Saturday from 9:25 to 10:40 P.M. (Moots, Mo.)

HI1J, San Pedro de Macoris, on 51.15 meters or 5.86 mc. sends a verie saying they are broadcasting 11:40 to 1:40 P.M. and 5:40 to 9:40 P.M. daily. They have 100 watts power and the address is Box 204 (Barron, Scotland).

HIX, Trujillo, has moved once again, this time to 6.34 mc. The schedule is Sundays 7:40 to 10:40 A.M., Tuesdays and Fridays 12:10 to 1:10 P.M., 4:40 to 5:40 P.M. and 8:10 to 10:10 P.M. and other days 12:10 to 1:10 P.M. and 4:40 to 5:40 P.M. Heard on 6.13 mc., not 6.34, Tuesdays and Fridays from 8:40 to 11:00 P.M. instead of 10:10. (Hodge, Calif.)

COCX, Havana, Cuba, "La Voz del Radio Philco," Box 32, claims to be on 26.20 meters or 11.45 mc. and are pretty close to that now. They broadcast from 8:00 A.M. one day and broadcast till 1:00 or 2:00 A.M. the next. Norman Baynes of Bangalore, India, reports this one, so it is powerfull.

COCQ, Havana, on 30.77 meters, or 9.75 mc., relays CMQ between 6:50 A.M. one day and 1:00 A.M. the next. Their address is Calle 25, No. 445 and their slogan is "RCA Victor." Mr. Gallagher claims they are also heard on 6.30 mc.

COKG has moved from 6.15 mc. to 6.20 mc. A lady does most of the announcing and the station is heard all over the world. (Child, Gallagher, Orchard, Soneira, Balbi, Nichols, Rossi, Pegge, Solito.) Heard signing off one day at 6:50 P.M. and the next at 11:00 P.M. They usually broadcast from 8:30 A.M. to 11:00 P.M.

CO9WR, Sancti Spiritus, Cuba, on 6.28 mc. now uses the call COHB and they relay CMHB. They are not keeping the schedule we show, but it is the last one they mailed out. (Stark, Mo., and Siddle, Ala.)

COCO, Havana, on 6.01 mc., stays on until midnight instead of 10:00 P.M. (Walcott, Calif.) A new Cuban is on 9.60 mc. broadcasting Saturdays 7:00 to 9:00 A.M. (Karpen, Pa.) A COCE on 8.82 mc. is relaying CMCE daily 11:00 A.M. to 1:00 P.M. (Eady, England.) This might be COCH.

A verie from CLX comes from the Secretaria de Agricultura, Havana, Cuba. (Kash, Tenn.) Heard on 7.10 mc., 9:30 to 9:47 P.M. once. (Waite, N.Y.) Heard on 7.05 mc., 12:20 to 1:00 A.M. (Child, Pa.) They announce their frequency as 6.995 mc. CMA3, a telephone station at Havana on 15.50 mc. was heard at 2:45 P.M. once. (Child, Pa.)

HH2S, Haiti, say they are on 6.07 mc., but they are not. They were heard on 5.91 mc. at 6:30 P.M. one Tuesday. (Flagg, Mass.) Heard on 50.85 meters from 3:30 to 9:00 P.M. (Barron, Scotland). They are supposed to broadcast week-days 7:00 to 9:45 P.M. HH3W, same city, is supposed to be on 31.37 meters, or 9.595 mc., weekdays 7:00 to 8:00 P.M., but heard on 9.64 mc., 10:00 P.M. to midnight sending special program November 7th. (Balbi, Calif.) Heard on 31.11 meters exactly. (Orchard, Eng.) HH3NW a sister station to HH3W is on 6.34 mc. from 1:00 to 2:00 P.M. and 7:00 to 8:00 P.M. HH2T, same city, was once on 11.7 mc., but was supposed to leave there and go on 14 mc. as an amateur. Reported now on 11.84 mc. one Monday in November from 8:30 to 9:30 P.M. (Balbi, Calif.)

K4XAO in Puerto Rico was heard on 12.87 mc. testing with W4XAD, Florida, from 8:00 to 8:30 A.M. (Moots, Mo.) Heard on 17.31 mc. from 8:25 to 8:35 A.M. (Solito, Pa.)

NORTH AMERICA

On Election day, November 3, United States stations nearly all remained on the air until 2:00 or 3:00 A.M. We have many reports.

W1XAL, Boston, will broadcast on 49.67 meters, 6.04 mc., Mondays and Fridays from 7:00 to 9:00 P.M. and Sundays 5:00 to 7:00 P.M. On 25.45 meters, 11.79 mc., they will be heard daily 6:00 to 6:15 P.M. and Saturdays 5:00 to 7:00 P.M. Heard on 15.25 mc., one Sunday 9:00 A.M. to noon. (Karpen, Pa.) Announcing W1XAM at 9:50 P.M. once. (Child, Pa.)

W2XAD will broadcast from 10:00 A.M. to 3:45 P.M. daily and W2XAF from 4:00 P.M. until midnight. When special programs like football games or prize-fights are broadcast, these stations may be heard when not scheduled. They were heard several times last month off schedule.

W3XAU, Philadelphia, is back on 9.59 mc. from noon to 8:00 P.M. and on 6.06 mc. from 8:00 to 10:00 P.M. (Flagg, Morgan, Diamond, Orchard, Chamberlain, Gallagher.) Heard 12:00 to 12:30 A.M. once. (Gaffney, Ill.)

W3XAL, Bound Brook, New Jersey, is supposed to be on 17.78 mc. from 8:00 A.M. to 3:00 P.M. and on 6.10 mc., Mondays, Wednesdays and Fridays from 4:00 P.M. to 1:00 A.M. Heard on 17.78 signing off at 5:00 P.M. (Stark, Mo.) Heard on 6.10 mc. at 6:00 P.M. (Flagg, Mass.) Off at 11:00 P.M. (Teague, Mich.) So the above schedule is all wrong, it seems.

W1XK, Boston, on 9.57 mc., broadcasts from 6:30 A.M. to 1:00 A.M. next day. (Stark, Mo.) This station does not verify, so save your postage.

W4XAD, University of Florida station at Gainesville, on 17.28 mc. tests irregularly between 9:00 and 11:00 A.M. (Walcott California). On 17.77 mc. at 1:30 P.M. (Swope, Ind.)

W9XAA, Chicago, has not been heard on 11.83 mc. for some time and works irregularly on 6.08 mc. also.

W2XE, Wayne, New Jersey, relays station WABC, New York City, as follows: On 13.74 meters, 21.52 mc., 7:30 A.M. to 1:00 P.M.; On 19.64 meters or 15.27 mc., 1:00 P.M. to 6:00 P.M.; On 25.36 meters, 11.83 mc., 6:00 to 10:00 P.M. and on 49.02 meters, 6.12 mc., from 10:00 to 11:00 P.M. (Smith, England.) It is on 15.27 until 5:00 P.M., not 6:00. (Stark, Mo.)

W9XF, Chicago, is now on 6.10 mc. They are supposed to broadcast from 8:00 P.M. to 1:00 A.M. Sundays, Tuesdays and Thursdays and daily 12:00 to 1:00 A.M. Comes on at 11:00 P.M. instead of 12:00. (Solito, Pa.)

There are about ninety telephone and experimental stations in the United States. Some are not heard for years at a time. We can not list them and we cannot take space to mention each report received, for there are too many to list and too many reports to mention. Some receiving reports last month were WKN on 19.22 mc.; KTP on 8.12 mc.; WET on 9.47 mc. Once last month WET worked stations YVQ, YVR, HJB, HJP, and LSX.

Canada has CJRX on 11.72 mc.; CJRO on 6.15 mc.; VE9HX on 6.13 mc.; VE9CA on 6.03 mc.; CRCX on 6.09 mc.; CFCX on 6.00 mc. and VE9CS on 6.07 mc. For schedules see the list. VE9CS, Vancouver, is supposed to be the world smallest station, having two watts power. Heard 11:30 P.M. to 1:30 A.M. one Wednesday. (Stark, Mo.) Heard on 6.07 mc., 12:30 A.M.

to 1:00 A.M. signed off at 1:00 saying they would be back at 6:30 A.M. next day, 9:30 A.M., E.S.T. (Rossi, Pa.) CFU, Rossland, was heard on 5.76 mc. sending reports 9:30 to 9:45 P.M. once. (Flagg, Mass.)

Station VOWQ, North West River, Labrador, was heard on 34.8 meters or 8.60 mc. at 7:00 P.M. calling a Quebec station. This is our first report. (Will, Illinois.)

AMATEURS

There are thousands of amateurs heard around 14.10 mc. These stations work irregularly, so you can not print a schedule, nor can you list them. Some African amateurs heard between 14.04 and 14.60 mc. are CN8AA, CN8AC, CN8AD, CN8MB, FT1AG, FT1AH, FT4AG, SU1KG, SU1SG; SU1CH, SU1RK, EA8LW, EA8AT, EA8AL, EA8AH, EA8AJ, EA8AO, SU6P, SU1GK, ZS2X. Some Asiatics are VS7RA, VS2AK, VS2AR, KA1DH, KA1ME, KA1KY, PK1MD, PK1MX, PK1GW, PK1PK, PK3ST, PK4AU, VS6AQ, VW2CQ, and VS2AK. We are agents for Radio Amateur Call-Book which lists the names and addresses, as well as call-letters of over 60,000 amateur stations in the world. The cost of this call-book is \$1.25 postpaid.

WITH THE REPORTERS

The following members sent in reports during the month: W. H. Chipendale, Asuncion, Paraguay; J. J. Kolibonso, Batavia, Java; J. H. A. Hardeman, Tjmahi, Java, Norman Baynes, Bangalore, India; Ingvar Gullberg, Hedemora, Sweden; John C. Barron, Aberdeen, Scotland; E. G. Neve, Torreon, Coah, Mexico; Salvador Cazabon, Caibarien, Cuba; J. R. Garrett, Pegge, Chesham, Bucks, England; D. C. Chamberlain, London, England; John High, London, England; P. C. Shenton, Gravely, Hunts, England; W. F. Eady, Harrow, Middx, England; Donald Morgan, Crynant, Glam, England; R. J. Rogers, Hatfield, England; Ernest Orchard, Weymouth, England; Donald Sloper; Melksham, Wilts, England; L. B. Reeves, Honolulu, Hawaii.

C. H. Hodge, Long Beach, Calif.; August Balbi, Los Angeles; Charles Eggenweiler, Los Angeles; A. Walcott, San Francisco; G. C. Gallagher, San Francisco; A. W. Field, San Diego, Calif.; Willis Werner, San Diego; Sam Swope, Hollywood, Calif.; A. Antogniui, Greenfield, Calif.; Wesley Turpin, Wenatchee, Wash.; J. W. Partner, Tacoma, Washington.

W. D. Flagg, Holyoke, Mass.; Victor Croome, Springfield, Mass.; Dr. Earle Hall, Winchendon, Mass.; Fred Atherton, Rutland, Vt.; George Dayton, Il, Wayzata, Minn.; Carl Eder, Willmar, Minn.; O. E. Stark, Pierce City, Mo.; Martin Olthoff, Independence, Kansas; Curt Webber, Leavenworth, Kansas; Kenneth Moots, Kansas City, Mo.; Alan Teague, Millington, Mich.; Richard Verbrughe, Jr., Detroit, Mich.; Seymour Stempel, Bridgeport, Conn.

Grace M. Beck, Chicago; Harold Gaffney, Chicago; Edward Schmeichel, Chicago; Frank Grey, Downers Grove, Ill.; Cyrus Will, Kenilworth, Ill.; Charles Dutrow, Washington, D. C.; Wilfred Siddle, Birmingham, Ala.; Charles Miller, Covington, Ky.; Jas. B. Wooten, Mobile, Ala.; Dr. R. C.

Kash, Sevierville, Tenn.; W. W. Smith, Louisville, Ky.; O. Hersowitz, Baltimore, Maryland.

Ramon Soneira, New York City; Carl Forestieri, New York City; Adolph Dick, Brooklyn; Fred Hafner, Buffalo; H. S. Bradley, Hamilton, N.Y.; Capt. George McDermott, New Brighton, N. Y.; W. F. Herzog, Center Moriches, N.Y.; Roy Waite, Balston Spa, N.Y.; George Diamond, Jamaica, N.Y.; Robert Rossi, Philadelphia; Thomas Nichols, Philadelphia; Roger Legge, Jr., Philadelphia; Fred Karpen, Johnstown, Pa.; Sam Solito, Leetsdale, Pa.; Miss Eileen Hofmaster, Sandusky, Ohio; R. Neyland, Erie, Pa.; Joe Child, Philadelphia, Pa.

We also have reports from the following that arrived too late for this magazine: Wm. Darby, Dublin, Ireland; J. M. R. Studholme, London, England; J. Child; Grace Beck; R. Verbrughe; F. Atherton; E. Deveport; W. Herzog; O. E. Stark; E. Riggie; O. Hersowitz; E. Neyland.

BOOSTERS

We are sincerely thankful to the following people for their wonderful help. Each has secured one or more members for the club since the last issue was printed. It is such help as this that enables the club to carry on, even more so that sending in news. We are truly grateful:

W. G. Graham, Springs, Tvl, Africa; A. F. Larkman, London, England; Siegfried Wegener, Colon, Panama; Philco Radio of London, England; Douglas Worcester, Honolulu, Hawaii; Mark L. Rowley, Grosse Pointe, Michigan; P. C. McNulty, Milwaukee, Wis.; E. R. Coulter, Buffalo, N. Y.; Ross Radio, Syracuse, N. Y.; Raymond Kane, Los Angeles, Calif.; J. W. Cope, Kelowna, B. C., Canada; Roy H. Duggan, Sandersville, Ga.; Mrs. Kate Randall, Ballston Spa, N. Y.; Mario Bruscio, Brooklyn, N. Y.; Louis Chapero, New York City; Richard Bradley, Baltimore, Md.; Herman Rapoport, Brooklyn, N. Y.; F. H. Harvey, Detroit, Mich.; Stuart Walmsley, Los Angeles, Calif.; E. L. N. Van Breda, Cape Town, South Africa; S. H. Lewis, London, England; F. S. Le Pavoux, Guernsey, Channell Islands. And special thanks to Willis Werner for publicity given the club in the San Diego, California, "Sun."

RADIO SUPPLIES

STATIONERY. The club emblem, printed in blue ink, on a good grade of paper, typewriter size. Does not have a lot of names of officers and such things on it to confuse the stations. Many firms offer special discounts to I. S. W. C. members. Many station owners are I. S. W. C. members and will verify faster if this stationery is used. Price 50c per hundred, postpaid.

CLUB SEALS. The club emblem, printed in blue ink. For those members that wish to use their private stationery, but also wish to be known as an I. S. W. C. member. The price is 25c per hundred, postpaid.

GLOBE. A beautiful 12-inch globe showing the location of nearly all the short wave stations. Modern in every detail. Washable, and has a fine walnut stand. We have over 200 unsolicited letters from purchasers who have been delighted with this globe. Some members have ordered as many as six globes for their friends, after they have received their first one. Price \$2.75 F. O. B., Indianapolis. Ask your postmaster for the postage rate on eight pounds from Indianapolis and include the amount with your order.



Noise Suppression

By

SOL PERLMAN, E. E.

Nature of Man-Made Noise

The greatest obstacle to enjoyable and consistent short wave reception of distant stations has always been and is the MAN-MADE NOISE created by automobile ignition, motors, oil burners, power lines, electric signs, dail telephones, etc. No sooner does the average short wave fan switch on his receiver than these man-made noises, in the form of machine gun rattles, buzzes, clicks, etc., begin to tear his speaker apart and the revibration that follows blots out his reception.

Cause and Range of Man-Made Noise

Every piece of electrical equipment of the "make and break" nature is really a miniature short wave transmitter which sends out its signals in the form of noise at a varying range. For example, auto ignition will carry several hundred feet, a vacuum cleaner about 100 feet and a physician's diathermy machine will carry for miles.

Reception and Noise Level

IT IS, THEREFORE, AN EVIDENT FACT THAT THE LIMIT OF THE SHORT WAVE FAN'S ABILITY TO RECEIVE DISTANT STATIONS IS DETERMINED SOLELY BY THE "NOISE LEVEL." Since the two are in direct proportion it is clear that if a means is found to reduce the NOISE LEVEL, the short wave fan will not only receive MORE STATIONS but also receive them CLEARER. Now, what is the remedy?

Remedies up to the Present Time.

Various means for reducing interference have appeared within the last few years BUT their effect has been limited. For example, the lead-in of a noise reducing antenna will pick up little or no noise but every bit of interference picked up by the flat top of the antenna will be transmitted directly into the receiver. A good Line Filter will suppress those noises that come through the power lines but will not be effective on noises that are picked up on the antenna. Elimination of trouble at the source would be the best thing to do but, of course, one could not go around filtering every piece of electrical equipment in his neighborhood or every automobile passing his house. What was needed is a device that would filter out the noises before they reach the loud speaker of the receiver and such device is now available in the form of THE AMPLIVOX NOISE BUCKER

which incorporates the famous J. J. Lamb Silencer Circuit which has been enthusiastically received by the amateurs and short wave fans and drew very favorable comments not only by the world's radio periodicals but also by such newspapers as the N. Y. Times (on first page), N. Y. Sun, N. Y. Telegram, etc.

Rate of Noise Suppression

THE AMPLIVOX NOISE BUCKER is neither a filter nor a "gadget." It is a device which uses four metal tubes and which, upon installation, becomes an inherent part of the radio receiver. When properly installed, it will suppress, to a degree hitherto thought impossible and in some cases at ratio of 100-1, the noise to signal ratio. With the noise going down, the signal goes up and a most interesting thing about the AMPLIVOX NOISE BUCKER is that the stronger the interference, the more effective is the Bucker. The circuit is such that it really constitutes a "signal limiting" device which DOES NOT ALLOW THE NOISE TO RISE ABOVE THE LEVEL OF THE SIGNAL.

How It Works

It has been found that noise created by automobile ignition, unlike a spoken word, really consists of tiny sound impulses which are transmitted at a rate of 120 per second and are one thousandth of a second long. The AMPLIVOX NOISE BUCKER shuts off the receiver at the same rate but because it does it so fast the ear cannot perceive it since the clear signal comes through regularly without being affected by the "hole of silence" created by the AMPLIVOX NOISE BUCKER.

Comparison With a Motion Picture Projector

A readily understandable analogy between the AMPLIVOX NOISE BUCKER and a MOTION PICTURE PROJECTOR can be made. When one sees a motion picture he knows that the picture is not really continuous but consists of separate still pictures which appear as if they are moving because the shutter of projector is closed about one third of the time between successive views of the picture in order to provide an interval for the single still to move to provide space for the next one without the person attending the show being aware of the "blind spot." In the same manner, the AMPLIVOX NOISE BUCKER shuts off the man-made noise without the listener being aware of the "Hole of Silence."

Installation and Operation

The AMPLIVOX NOISE BUCKER can be attached to any superheterodyne receiver (99% of the sets used today), regardless of make or model. It draws filament power from any A.C. outlet. Installation requires only close placing near the receiver, replacing the first intermediate frequency tube with an adapter which is provided and running two wires to the ground binding post and the speaker field, respectively. A slight adjustment is made on the NOISE BUCKER in order to align the device with the receiver and that is all. Degree of noise reduction may be varied by a knob on the front panel which also permits taking the device out of operation entirely when listening on the broadcast band or when interference is not present. The AMPLIVOX NOISE BUCKER does not affect the operation of the receiver with which it is used.

Literature on the AMPLIVOX NOISE BUCKER and reprints of articles

by the leading radio periodicals and newspapers on the Lamb Silencer may be obtained by writing Sol Perlman, E. E., (Technical Advisor, N. Y. Chapter International Short Wave Club), 227 Fulton Street, New York, N. Y. See advertisement on page 5 of this issue.

ALWAYS PRINT YOUR ADDRESS

Believe it or not, we have forwarded over 500 verifications during the past year to members who sent reports to stations on our stationery and failed to give their address clearly. Close to 600 verifications have been received here addressed to some member in care of the I.S.W.C. All excepting two have reached their destination, but with the large membership that we have, it takes a lot of work to mail these. We suggest that every member use our stationery, but print their name and address clearly at the top of the page. Incidentally, hundreds of members will swear that it pays to use our stationery.

CHAPTER NEWS

The London, England, Chapter meets every Friday except the second in each month at RACS Hall, Wandsworth Road, SW8. Special features are booked for the winter, including a television demonstration. There will be demonstrations of receivers, noise-buckers, lectures, morse instruction and many other things.

The Brighton, England, Chapter will be officially opened January 23rd in Brighton Technical College. For details write to John Bennett, 205 Braeside Avenue, Brighton, 6.

The Guernsey Chapter is progressing. For details write to F. S. Le Pavoux, 8, Upper Canichers, St. Peter Port, Guernsey, Channell Islands.

The Manchester Chapter activities may be learned by writing H. Wild, 1 Elm Street, Middleton, Manchester.

The New York Chapter on December 4th will visit the American Telephone & Telegraph Company. It is here that operators connect telephone stations with stations in 68 different countries just like it was in the same city. Many net-work programs are also broadcast through this exchange and all this will be explained to members.

RECEIVERS

RME-69 and DB-20; Hallicraitors' Super Skyrider, Ultra, Commercial, Sky Chief and Sky Buddy; Sargent 9.5 to 20,000 meter TRF. Liberal allowance on your used receiver. Terms. Used receivers.

ACCESSORIES

RME and Marine Transmitters; MacOsc \$3.95; MacKeys \$7.95 and \$15.00; Taylor Tubes: 866 \$1.65, T-55 \$8.00; Decker Coils 90c; Jones' Radio Handbook \$1.50; Jones' Antenna Handbook 50c; ARRL Handbook \$1.00. Etc., etc.

Every order for \$25.00 or more will be accompanied by Handbook or I.S.W.C. Membership as Xmas gift.

R. C. HALL
W5E1B

738 East Sixteenth Street
Houston, Texas

L. F. HALL
W5EUG

LATE REPORTS

Here are some late bits of news sent in by members after we had set up the main section of the magazine. O. Herowitz reports Algiers on 12.12 mc. sending a special program one Tuesday from 5:00 to 6:00 P.M. This is the first time we ever heard of them broadcasting. Joe Childs reports a new French phone on 10.44 mc. at 3:15 P.M., XOJ on 10.42 mc. and JVD on 15.86 mc. working each other daily at 8:00 P.M. E. Neyland reports JZK and JZI between 4:00 and 5:00 P.M. and corrects us on the way we listed RIR and RIO. Joe Childs also reports PPQ on 11.67 mc. and PPM on 10.31 mc. sending a special program to the U. S. A. November 24th at 7:30 P. M.

Grace M. Beck reports YV15RC at Maracay where we mention YV15RV. E. Riggle reports PSH, Brazil, on 10.22 mc. calling New York at 7:00 P.M. W. C. Gangloff reports ZBW on 9.525 mc. at 6:00 A.M. and JVS on 10.74 mc. Ed. Devenport reports HIN on 6.24 mc. till 9:45 P.M. instead of signing off at 9:10 and CMA5, Havana, on 15.40 mc. sending music 4:40 to 5:40 P.M. W. F. Herzog reports ZBW daily 7:00 A.M. on 9.525 mc. And something important, XECR, Mexico, is on 7.38 mc. daily, not just Sundays, at 8:00 P.M. WET testing with PPQ and PPM and says HJ1ABE on 9.50 mc. is heard at 5:30 P.M.

And here is news. "Radio Universal de Ica," at Ica, Peru, is heard on 25.42 meters or 11.796 mc., sending music. It was heard between 7:00 and 9:30 P.M. The address was announced as "Estafeta de Correos," Ica, Peru (E. G. Neve, Mexico).

R. Verbrughe reports PCJ on the air until noon and CSW. Fred Ather-ton reports HRP1, Honduras, on 6.351 mc. signing off at 9:30 P.M. and CO9WR changed their call to COHB as reported elsewhere. J. B. Wooten reports PPQ and WET testing, LRU and LRX on schedule and W1XAL testing on 15.25 mc. at 10:30 A.M. W. F. Eady sends us the schedules and frequencies of JZI, JZK and JZJ and of the ZBW stations. Henry Howe reports YNOP Managua, on 51.1 meters or 5.75 mc. from 8:30 to 10:10 P.M. Wm. Darby, Ireland, reports DJO on 11.80 mc. now, Bangkok on schedule, a Madrid station on 42.50 meters between 5 and 5:30 P.M. sending war news.

J. M. R. Studholme reports the new Japanese stations, the new ZBW frequencies, HS8PJ schedule, CSW on 9.93, EAQ, EAH, the frequencies of OLR, IAC on 17.75 mc. phoning Africa around 11:00 A.M., W3XAU, W3XAL on a new schedule, HKV, and VP3MR heard on 6.03 mc. not 6.01 as they say. He also sends news that a letter from EAJ43 (not EHZ or EDK as we say) is on 10.38 mc. daily 2:15 P.M. to 3:50 P.M. and 6:00 P.M. to 8:00 P.M. He also says that VK3LR is now on the air till 9:45 A.M. O. E. Stark reports HC2JSB on 7.87 mc. now, FO8AA, TIEP on 6.67 mc., HIN on 6.24 mc. at 5:15 P.M. instead of on 11.28, HJ4ABP on 6.03 mc. heard till 1:10 A.M. YNAN on 7:20 mc. at 8:30 P.M., HIX heard till 9:43 P.M. and very important, a new station, COKW, Santiago, Cuba, on 6.65 mc. relaying CMKM heard one Friday till 1:40 A.M. in the morning. They gave their address as Box 323.

E. D. Purkey reports HJ4ABH, ZBW3, YDC, YV15RV at Maracay, Venezuela, on 5.90 mc. testing at 2:00 A.M. and XECO, Mexico City on 15.35 mc. Sunday mornings. Wilbur Britting reports RV15 back on

frequency; JZI testing from 4:00 to 5:00 A.M. and FO8AA from 11:00 P.M. to 12:30 A.M. Rene Valdes reports YV15RC or V, Lavatories Franco, Maracay, on 5.90 mc. at 12:30 A.M. Dr. Kash reports HIN verie giving time as daily noon to 2:00 P.M. and 7:30 to 9:30 P.M., E.S.T., instead of Dominican time as we list it. Carl Eder reports YNOP on 5.75 mc. from 10:00 to 10:30 P.M. when they signed off saying they would be back at 7:30 next day. He also reports a PRF2 or PRE2, Brazil, testing with New York on 10.15 mc. but does not give the time.

Albert Spuhler reports YV5RP, Caracas, on 6.27 mc. at 9:03 P.M. using the slogan "The Voice of Philco." O. E. Stark reports YV15RC on 5.91 mc. announcing Radio Valencia giving address as Maracay, not Maracaibo. He also reports YNOP on 5.75 mc. from 8:30 to 10:30 P.M. A. W. Field reports ZBW3, LSX, KKP, TPA3 and W1XAL on 6.04 with special program.

E. Orchard reports FIQA heard on 50 meters or 6.00 mc. exactly, from 11:30 A.M. to 12:30 P.M. VUC, Calcutta, on 6.10 closes down at 12:06 almost daily. VP3BG, British Guiana, is on 48.89 meters he claims, not on 41.55 meters, 7.22 mc., which is strange indeed for members are reporting it on 41.55 meters right along. He also reports ZBW3, CB960, TIEP, YV11RB, YV5RC, COKG, HIN, HIG, HH2S and H11J. He claims that HIN no longer uses their 11.28 mc. wave.

WE NEED BOOSTERS

Right now this organization is suffering from an over-supply of reporters and a lack of boosters. Not so long ago the editor paid a visit to the factory of one of our advertisers. The manager, in talking over advertising, permitted the editor to look over the sales books covering the previous six months. On the books were records of sales made to seventeen of our well-known reporters, not one of whom mentioned his connection with this organization. Credit for each of the sales went to other publications. Some of these reporters spend hours of time sending in reports which they expect to see published in this magazine, but would not take time to write, "I saw your ad. in International Short Wave Radio." We appreciate reports, but unless we have members who will boost the magazine and club, we cannot get advertising. And, we must have advertising to have space enough to mention the reports. Mention the club at every opportunity—when you buy a receiver or part—when you write to a station—when you write to another short wave fan—when you are talking about short waves. It all helps.

Ultra-High Frequency Stations. Quite a few members have written in regarding stations heard on about 31.6 mc. or around 9 meters. We are not able to get a complete list of such stations, but suggest that members gather what news they can on call-signs, frequencies and particularly, schedules, and let us have this information.

**Why Take
A Chance?**

You are protected when you buy from our advertisers!

Advertising for this magazine is accepted only from firms who, in the opinion of the officers, are of established integrity and whose products have met the approval of officers and members. Play safe and patronize I. S. W. C. advertisers.

"ON-THE-AIR"

The time given is Eastern Standard. Add five hours for G. M. T. Mark down the dial reading of the station heard on the margin of the paper and it will guide you to the location of other stations on your dials.

B—Stands for Broadcast Station. These stations broadcast programs, usually *relaying* some long wave station.

T—Stands for Telephone Stations. These stations are used to relay telephone *conversations* across oceans and a carrier wave, or "whistle," may be heard for several hours *without any voice* being heard. Some stations use a "chopper" which distorts the voice and *makes it impossible* to understand.

E—Stands for Experimental Stations. These stations are never on the air regularly. They are usually telegraph stations which are rented by some chain to relay a broadcast to some foreign country. You never can tell when you will hear them.

Meters	Meg.	STATION	TIME
B-13.92	-21.54	-W8XK, Pittsburgh, Pa., relays KDKA,	7:00 to 9:00 A.M.
B-13.94	-21.52	-W2XE, Wayne, N. J., relays WABC	7:30 A.M. to 1:00 P.M.
B-13.97	-21.47	-GSH, Daventry, England.	6:00 A.M. to 8:45 A.M.; 9:00 A.M. to noon
T-14 01	-21.41	-WKK, Lawrenceville, N. J. Phones LSN,	8:00 A.M. to 4:00 P.M.
T-14.17	-21.16	-LSL, Buenos Aires, Arg.	8:00 A.M. to 1:00 P.M. GAA and PSF.
T-14.23	-21.08	-PSA, Rio de Janeiro, Brazil. Phones WKK,	WLK, daytime.
T-14.27	-21.03	-LSN, Buenos Aires, Arg.	8:00 A.M. to 4:00 P.M. WKK and WLK.
T-14.72	-20.38	-GAA, Rugby, England. Phones LSL and PPU	near 8:00 A.M.
T-14.97	-20.04	-OPL, Leopoldsville, Belgian Congo. Phones	ORG, mornings.
T-14.99	-20.02	-DHO, Nauen, Germany. Phones PPU and	LSM mornings.
T-15.14	-19.18	-WKN, Lawrenceville, N. J. Phones GAU,	daytime.
T-15.24	-19.69	-CEC, Santiago, Chile. Phones LSR, HJY	near 11 A.M. and 4 P.M.
T-15.28	-19.62	-VQG, Nairobi, Kenya, Africa. Phones	London, 7:30 to 8:00 A. M.
T-15.39	-19.50	-LSQ, Buenos Aires, Argentina. Heard	testing near 2:00 P.M.
T-15.50	-19.35	-FTM, Assise, France. 10:00 A.M. to	2:00 P.M. LSG.
T-15.50	-19.35	-PMA, Bandoeng, Java. Phones Holland,	mornings.
T-15.57	-19.27	-PPU, Rio de Janeiro, Brazil. Phones	FTM, 10:30 A.M. to 3:00 P.M.
T-15.58	-19.25	-DFA, Nauen, Germany. Phones 10:00	A.M. to 2:00 P.M. irregularly.
T-15.62	-19.21	-ORG, Brussels, Belgium. Phones OPL,	mornings.
T-15.68	-19.13	-LSM, Buenos Aires, Argentina. Phones	EAQ, DHO, GAA, mornings.
B-15.77	-19.02	-HS8PJ, Bangkok, Siam. Mondays	8:00 to 10:00 A.M.
T-15.88	-18.89	-ZSS, Klipkeuval, S. Africa. Phones	GAS, 6:30 to 7; 10 to 10:45 A.M.
T-15.93	-18.83	-PLE, Bandoeng, Java. Phones Holland	6 to 11 A.M. KWX irregularly.
T-16.06	-18.68	-OCI, Lima, Peru. Testing with HJY	near 2:00 P.M.
T-16.11	-18.62	-GAU, Rugby, England. Phones New	York mornings.
E-16.22	-18.48	-HBH, Geneva, Switzerland. Used for	special programs.
T-16.30	-18.40	-PCK, Kootwijk, Holland. Phones	Java near 7:00 A.M.
T-16.35	-18.35	-WLA, Lawrenceville, N. J. Phones	England 8:00 A.M. to 4:00 P.M.
T-16.38	-18.31	-GAS, Rugby, England. Phones	New York mornings.
T-16.39	-18.30	-YVR, Maracay, Venezuela. Phones	Germany, 10:00 A.M.
T-16.44	-18.25	-FTE, St. Assise, France. Phones	LSM, PPU, mornings.
T-16.48	-18.20	-GAW, Rugby, England. Phones	New York mornings.
T-16.50	-18.18	-PMC, Bandoeng, Java. Phones	PCV, 3:10 to 9:20 A.M.
E-16.55	-18.12	-LSY, Buenos Aires, Argentina. Irregular.	
T-16.82	-18.05	-PCV, Kootwijk, Holland. 6:00 to	9:00 A.M. Java.
B-16.86	-17.79	-GSG, Daventry, England. 6:00 to	8:45 A.M.
B-16.87	-17.78	-W3XAL, Bound Brook, N. J. 8:00	A. M. to 3:00 P. M. daily.
T-16.89	-17.76	-IAC, Piza, Italy. Phones ships	early mornings.
B-16.89	-17.76	-DJE, Zeesen, Germany, 12:05 to	11:00 A.M.
B-16.90	-17.75	-ZBW5, Hong Kong, used irregularly	3:00 to 10:00 A.M.
T-16.85	to 18.27	-17.80 to 16.42—Ships. Heard	in daytime.
B-16.91	-17.74	-HSP, Bangkok, Siam, phones	Japan, Germany and England.
T-17.00	-17.64	-XGN, Shanghai, China, phones	London 7 to 9 A.M., Mon. Wed. Sat.
T-17.12	-17.52	-DFB, Nauen, Germany. Phones	LSM and YVQ near 9:00 A.M.
T-17.16	-17.48	-VWY2, Poona, India, phones	England 7:00 to 10:00 A.M.
T-17.52	-17.12	-WOO, Ocean City, New Jersey. Phones	ships, irregularly.
T-18.31	-16.38	-ITK, Mogadiscio, Italian Somaliland,	phones Italy daytime.

Meters	Meg.	STATION	TIME
T-18.44	-16.30	WLK, Lawrenceville, N. J.	Phones England.
T-18.47	-16.24	KTO, Manila, P. I.	Phones Japan 5:00 to 9:00 P.M., irregularly.
T-18.51	-16.20	FZR, Saigon, Indo-China.	Phones Paris mornings.
T-18.71	-16.04	KKP, Kauhuku, Hawaii.	Phones KWU 1:00 to 7:00 P.M.
T-18.89	-15.88	FTK, St. Assise, France.	Phones Saigon 8:30 to 11:00 A.M.
T-18.99	-15.80	XOJ, Shanghia, China.	Phones Japan 5:00 P.M. to midnight.
T-18.91	-15.86	CEC, Santiago, Chile.	Phones OCJ 11 A.M., 1 and 4:40 P.M. irreg.
T-19.02	-15.81	LSL, Buenos Aires, Arg.	Phones GAA 8 A.M. to 1 and FTM 1-2 P.M.
T-19.15	-15.66	JVE, Nazaki, Japan.	Phones Java 3:00 to 5:00 A. M.
T-19.20	-15.61	JVF, Nazaki, Japan,	phones U.S.A. near 5:00 A.M. and 8:00 P.M.
T-19.42	-15.45	IUG, Addis Ababa, Ethiopia,	phones Italy 7:00 to 10:00 A.M.
T-19.47	-15.41	KWO, Dixon, California.	Phones Hawaii in place of KWU.
B-19.52	-15.37	HAS-3, Budapest, Hungary.	Sundays 9:00 to 10:00 A.M.
T-19.54	-15.35	KWU, Dixon, California.	Phones Hawaii, 2:00 to 7:00 P.M.
B-19.56	-15.34	DJR, Zeesen, Germany,	8:00 to 10:00 A.M.
B-19.56	-15.33	W2XAD, Schenectady, N. Y.,	10:00 A.M. to 3:45 P.M. daily.
B-19.58	-15.32	OLR, Podebrady, Czechoslovakia.	See news section.
B-19.62	-15.29	LRU, Buenos Aires, Argentina.	7:00 A.M. to 5:00 P.M., irreg.
B-19.63	-15.28	DJO, Zeesen, Germany.	6:00 to 11:00 A.M. Sun. 11:10 to 13:20 P.M.
B-19.64	-15.27	W2XE, Wayne, N. J.	Relays WABC 1:00 to 6:00 P.M. daily.
B-19.66	-15.26	GSI, Daventry, England.	12:15 to 3:40 P.M.
T-19.68	-15.25	RIM, Tashkent, U.S.S.R.	Phones RKI near 7:00 A.M.
B-19.68	-15.25	TPA2, Pontoise, France.	2:00 to 2:55 A.M. 5:55 to 11:00 A.M.
B-19.69	-15.23	OLR, Podebrady, Czechoslovakia.	See News Section.
B-19.71	-15.22	PCJ, Eindhoven, Holland	Sun. 7-8 A.M., Tues. 4:30-6 A.M., Wed. 8-10 A.M.
B-19.71	-15.21	W8XX, Pittsburgh, Pa.	Relays KDKA 9:00 A.M. to 7:00 P.M.
B-19.74	-15.20	DJB, Zeesen, Germany.	12:05 to 11:00 A.M., Sun. 11:10 to 12:25 P.M.
B-19.76	-15.18	GSO, Daventry, England.	3:00 A.M. to 5:00 A.M.
B-19.76	-15.18	RV96, Moscow, U. S. S. R.,	Sundays 1:30 to 2:30 P.M.
B-19.75	-15.19	BZW4, Hong Hong.	Heard irregularly 3:00 to 10:00 A.M.
B-19.79	-15.16	JZK, Nazaki (Tokyo), Japan.	Mon., Thur. 4-5; Tues., Fri. 2-3 P.M.
B-19.80	-15.15	YDC, Bandoeng, Java,	heard 5:30 to 10:30 A.M. irregularly.
B-19.82	-15.14	GSE, Daventry, England.	9:00 A.M. to noon.
B-19.84	-15.11	HVJ, Vatican City.	10:30 to 10:45 A.M. daily.
B-19.85	-15.11	DJL, Zeesen, Germany,	12:00 to 2:00; 8:00 to 10:00 A.M.; 11:35 to 4:30 P.M. (Sunday 6:00 to 8:00 A.M.)
B-19.89	-15.08	RKI, Moscow, U.S.S.R.,	Sundays 10-11 A.M.; phones 10 P.M.-10 A.M.
T-19.92	-15.06	WNC, Hialeah, Florida,	phones many stations in daytime.
T-20.03	-14.98	KAY, Manila, P. I.	Phones DFS 5 to 7 A.M.; U.S.A., 7 to 8 P.M.
T-20.08	-14.94	HJB, Bogota, Colombia,	phones WNC daytime.
T-20.08	-14.94	HII, Trujillo, Dominican Republic,	phones WNC daytime.
T-20.08	-14.94	HJA3, Barranquilla, Colombia,	phones WNC, Florida.
B-20.20	-14.85	LZA, Sofia, Bulgaria,	weekdays 5:00 to 7:00 A.M. and 1:00 to 3:00 P.M.; Sundays 12:30 A.M. to 8:00 A.M.; 10:00 A.M. to 4:30 P.M.
E-20.27	-14.80	WQV, Rocky Point, N. Y.,	heard irregularly.
T-20.29	-14.79	ROU, Omsk, Siberia,	phones Moscow 7:00 to 9:00 A.M. irregularly.
T-20.37	-14.73	IQA, Rome, Italy,	phones 8:00 to 11:00 A.M. irregularly.
T-20.45	-14.67	GBL, Rugby, England.	Phones JVH 1:00 to 7:00 A.M.
B-20.55	-14.60	JVH, Nazaki, Japan,	12:00 to 1:00 A.M.; 4:00 to 7:40 A.M. daily. Mon. and Thurs. 4:00 to 5:00 P.M.; Tues. and Fri. 2 to 3 P.M.
T-20.56	-14.59	WMN, Lawrenceville, N. J.	Phones England daylight.
T-20.64	-14.54	HBJ, Geneva, Switzerland.	Used irregularly.
T-20.65	-14.53	LSN, Buenos Aires, Argentina.	Phones New York daytime.
T-20.71	-14.48	YSJ, San Salvador, Salvador.	Phones WNC afternoons.
T-20.71	-14.48	HRL5, Nacaome, Honduras,	testing with WNC daytime.
T-20.71	-14.48	TIU, Cartago, Costa Rica,	phones WNC daytime.
T-20.71	-14.48	YNA, Managua, Nicaragua,	phones WNC daytime.
T-20.71	-14.48	HPF, Panama, phones WNC	daytime.
T-20.71	-14.48	HRF, Tegucigalpa, Honduras,	phones WNC daytime.
T-20.71	-14.48	TGF, Guatemala City,	phones WNC daytime.
T-20.73	-14.47	WMF, Lawrenceville, N. J.	Phones England daylight.

Meters	Meg.	STATION	TIME
T-20.75	14.46	GBW, Rugby, England.	Phones WNC 6:00 A.M. to 6:00 P.M.
B-20.75	14.46	DZH, Zeesen, Germany,	4:00 to 7:00 P.M.
E-20.97	21.26	14.30 to 14.11	Amateur phones heard in daytime.
B-21.46	13.98	PZ1AA, Paramaribo, Dutch Guiana,	in the evenings.
E-21.58	13.90	WQP, Rocky Point, N. Y.	Testing with RNE irregularly, mornings.
T-21.70	13.83	SUZ, Cairo, Egypt.	Phones GAA 7:00 A.M. to 3:30 P.M.
E-21.91	13.69	KKZ, Bolinas, California.	Used irregularly.
T-21.98	13.65	HJY, Bogota, Colombia.	Phones irregularly.
B-22.00	13.63	SPW, Warsaw, Poland.	Mon., Wed. and Fri., 11:30 A.M. to 12:30 noon.
T-22.09	13.58	GBB, Rugby, England.	Phones Canada and Egypt, daytime.
T-22.37	13.41	YSJ, Salvador, San Salvador,	phones WNC daytime.
T-22.40	13.38	IDU, Asmara, Eritrea,	phones Italy 8:00 A.M. to 3:00 P.M. irregularly.
T-22.40	13.39	WMA, Lawrenceville, N. J.	Phones England, daytime.
T-22.48	13.35	YVQ, Maracay, Venezuela.	Phones Florida, daytime.
T-22.50	24.3	13.34 to 12.35	Ships. Heard in daytime.
T-22.58	13.28	CGA3, Drummondville, Canada.	Phones ships and England daytime.
T-22.70	13.22	IRJ, Rome, Italy,	phones Japan irregularly 5:00 to 8:00 A. M.
T-23.36	12.84	WOO, Ocean Gate, N. J.	Phones ships irregularly.
T-23.38	12.83	CNR, Rabat, Morocco.	Phones St. Assise 5:00 to 8:00 A.M.
T-23.45	12.80	IAC, Piza, Italy.	Works ships mornings.
T-23.47	12.78	GBC, Rugby, England.	Phones ships irregularly.
T-24.20	12.40	DAF, Norden, Germany.	Phones ships irregularly, mornings.
T-24.40	12.30	PLM, Bandoeng, Java.	Phones VK2ME near 6:30 A.M.
T-24.41	12.29	GBU, Rugby, England.	Phones America, evenings.
B-24.52	12.24	TFJ, Reykjavik, Iceland,	Sundays 1:40 to 2:30 P.M.
T-24.56	12.22	TYA, Pontoise, France.	Phones the Normandie, irregularly.
T-24.69	12.15	GBS, Rugby, England.	Phones New York.
E-24.73	12.13	DZE, Zeesen, Germany.	7:00-9:00 A.M., 5:00-9:00 P.M., irreg.
T-24.75	12.12	Alger, Algeria,	phones Paris midnight to 8:00 A.M. irregularly.
B-25.00	12.00	RNE, Moscow, U.S.S.R.,	daily 2:00 to 5:00 P.M.; Wed. 6:00 to 7:00 A.M.; Sundays, 6:00 to 7:00 A.M. and 10:00 to 11:00 A.M.
T-25.02	11.99	FZS, Saigon, Indo-China.	Phones Paris mornings.
B-25.09	11.95	IUC, Addis Ababa, Ethiopia.	Phones Rome around noon and midnite.
E-25.11	11.97	KKQ, Bolinas, California.	Heard irregularly, evenings
T-25.12	11.95	FTA, St. Assise, France.	Phones CNR 4 to 7 A.M., LSM 10 to 12 P.M.
B-25.21	11.90	NEWI, Mexico City.	See news section for schedule.
B-25.23	11.89	TPA3, Pontoise, France.	2:00 to 5:00 A.M., 12:15 to 6:00 P.M.
B-25.27	11.87	W8XK, Pittsburgh, Pa.,	relays KDKA 5:00 to 9:00 P.M.
B-25.26	11.87	OLR, Podedbrady, Czechoslovakia.	See News Section.
B-25.36	11.83	W2NE, Wayne, N. J.	Reays WABC 6:00 P.M. to 10:00 P.M.
B-25.40	11.81	2RO4, Rome, Italy.	6:43 to 10:30 A.M. daily.
B-25.42	11.80	IJZ, Nazaki, Japan.	Heard irregularly.
B-25.42	11.79	W1XAL, Boston, Mass.,	daily 6:00 to 6:15 P.M.; Sat. 5:00 to 7:00 P.M.
B-25.49	11.77	DJD, Zeesen, Germany,	11:35 to 4:30 and 4:50 to 10:45 P.M.
B-25.51	11.76	OLR, Podedbrady, Czechoslovakia.	See News Section.
B-25.53	11.75	GSD, Daventry, England.	12:15 to 5:45 P.M., 6 to 8 P.M., 9 to 11 P.M.
B-25.57	11.74	PHI, Huizen, Holland,	daily except Tues. and Wed. 8:30 to 10:30 A.M.
B-25.58	11.73	Saigon, Indo-China,	5:30 to 9:30 A.M. often.
B-25.60	11.72	CJRX, Winnipeg, Canada,	6:00 P.M. to Midnight.
B-25.63	11.71	TPA4, Pontoise, France.	6:15 to 10:15 P.M., 10:45 P.M. to 1:00 A.M.
B-25.63	11.71	SM5SX, Stockholm, Sweden,	Wednesdays 5:00 to 6:00 P.M.
E-25.63	11.71	KIO, Kauhuku, Hawaii.	Heard in the evenings testing.
E-25.87	11.59	VR4, Stony Hill, Jamaica.	Testing with WNC in daytime.
B-26.09	11.50	COCX, Havana, Cuba,	weekdays 8:00 A.M. to 1:00 A.M. next day. Sundays 8:00 A.M. to 2:00 P.M. and 6:00 to 8:00 P.M.
B-26.09	11.50	PMK, Bandoeng, Java,	heard 4:00 to 9:30 A.M. irregularly.
E-26.09	11.50	XAM, Merida, Yucatan.	Irregularly 1:00, 6:00 and 7:00 P.M.
B-26.31	11.40	HBO, Geneva, Switzerland.	Used irregularly.
B-26.60	11.28	H1N, Trujillo, D. R.	4:46 to 5:40 P.M. daily.
T-27.15	11.05	ZLT, Wellington, New Zealand.	Phones VLK 1:00 to 7:00 A.M.
B-27.25	11.00	PLP, Bandoeng, Java,	daily 4:00 to 10:00 A.M.
T-27.35	10.97	OCL, Lima, Peru.	Phones HJY, evenings.

Meters	Meg.	STATION	TIME
T-27.67	10.84	KWV, Dixon, California.	Phones Hawaii, daytime.
E-27.65	10.85	DFL, Nauen, Germany.	Irregular.
T-27.86	10.77	GBP, Rugby, England.	Phones VLK 11:00 P.M. to 8:00 A.M.
E-27.93	10.74	JVM, Nazaki, Japan, Tues., Fri., 2 to 3 P.M.	Phone 1:30 to 7:40 A.M.
T-28.09	10.68	WNB, Lawrenceville, N. J.	Phones Bermuda. daytime.
B-28.12	10.67	CEC, Santiago, Chile, daily 7 to 8 P.M.	Thurs., Sun., 8:30 to 9 P.M.
T-28.14	10.66	JVN, Nazaki, Japan. Bcbs. Tues. & Fri.	2-3 P.M., Mon. & Thur. 4-5 P.M.
E-28.28	10.61	WEA, Rocky Point, N. J.	Tests irregularly with Europe.
T-28.44	10.55	WOK, Lawrenceville, N. J.	Phones Brazil and Argentina, irregularly.
T-28.49	10.53	JIB, Taiwan, Japan, phones 1:00 to 10:00 A.M.	
T-28.51	10.52	VK2ME-VLK, Sydney, Australia.	1:00 to 8:00 A.M. GBP.
T-28.79	10.42	XGW, Shanghai, China, phones Japan	Midnight to 3:00 A.M.
T-28.80	10.42	PDK, Kootwijk, Holland.	Phones Java, 7:30 to 9:40 A.M.
T-28.80	10.40	YBG, Medan, Sumatra.	5:30-6:30, 12:30-1:30 A.M., 7:30-8:30 P.M.
E-28.85	10.40	KEZ, Bolinas, California.	Used irregularly.
E-28.91	10.38	WCG, Rocky Point, N. Y.	Tests irregularly.
E-28.93	10.37	EHZ, Teneriffe, Canary Islands,	broadcasts afternoons and evenings irreg.
B-29.04	10.33	ORK, Brussels, Belgium.	1:30 to 3:00 P.M., daily.
E-29.13	10.30	LSQ, Buenos Aires, Argentina.	Used for special tests.
E-29.15	10.29	IJZC, Zeesen, Germany.	3:00 to 9:00 P.M., Irregular.
B-29.25	10.26	PMN, Bandoeng, Java,	5:30 to 10:30 A.M.
E-29.27	10.25	LSL, Buenos Aires, Argentina,	testing 5:30 to 7:00 P.M.
E-29.33	10.23	CED, Antofagasta, Chile, heard 7:00 to 9:30 P.M.	irregularly.
T-29.45	10.22	PSH, Rio de Janeiro, Brazil.	Sending music, evenings.
T-29.50	10.17	RIO, Baku, U. S. S. R., phones 10:00 P.M. to 10:00 A.M.	irregularly.
T-29.58	10.14	OPM, Leopoldville, Belgian Congo.	Phones ORK 9-11 A.M., 3-6 P.M.
T-29.76	10.08	RIR, Tiflis, U. S. S. R.	Phones 10:00 P.M. to 10:00 A.M., irregularly.
T-29.79	10.07	EHY, Madrid, Spain.	Phones YVR near 4:00 P.M., irregularly.
T-29.80	10.66	TDE, Shimkio, Manchukuo,	phones Japan 1:00 to 9:00 A.M. irregularly.
T-29.83	10.05	ZFB, Hamilton, Bermuda.	Phones U.S.A. and ships, daytime.
T-29.83	10.05	SUV, Cairo, Egypt.	Phones GAA after 3:30 P.M.
E-29.88	10.04	DZB, Zeesen, Germany.	7:00 to 9:00 P.M.
T-30.09	9.97	KAZ, Manila, P. I.	Phones PLV near 2:00 A.M.
T-30.15	9.95	GCU, Rugby, England.	Phones New York evenings.
T-30.21	9.93	HKB, Bogota, Colombia.	Phones PSK irregularly, evenings.
B-30.21	9.93	CSW, Lisbon, Portugal.	4:00 to 6:00 or 7:00 P.M.
T-30.30	9.90	LSN, Buenos Aires, Argentina.	6:00 P.M. to 6:00 A.M. WLO.
T-30.40	9.87	WON, Lawrenceville, N. J.	Phones England evenings.
E-30.40	9.87	JYS, Kemikawa-Cho, Japan.	Relays JOAK Irreg., mornings.
B-30.43	9.86	EAQ, Madrid, Spain.	5:15 P.M. to 9:30 P.M. daily. Sat. 1-3 P.M.
T-30.52	9.83	IRM, Rome, Italy.	Phones Egypt afternoons.
T-30.60	9.80	GCW, Rugby, England.	Phones America, evenings.
E-30.61	9.80	LSI, Buenos Aires, Argentina.	Used irregularly, evenings.
T-30.75	9.76	VK2ME-VLK, Sydney, Australia.	Phones Java 4:00 to 8:00 A.M.
T-30.77	9.75	WOF, Lawrence, N. J.	Phones England, evenings.
B-30.77	9.75	COCQ, Havana, Cuba,	7:00 A.M. to 1:00 A.M. next day.
T-30.90	9.71	GCA, Rugby, England.	Phones Argentina around 6:00 P.M.
B-31.00	9.67	DZA, Zeesen, Germany,	5:00 to 7:00 P.M.
B-31.02	9.67	T14NRH, Heredia, Costa Rica.	9 to 10 P.M., 11:30 P.M. to midnite.
B-31.06	9.66	LRN, Buenos Aires, Arg.	5:00 P.M. to 11:00 P.M.
T-31.08	9.65	DGU, Nauen, Germany.	Phones Egypt in daytime.
B-31.09	9.65	CT1AA, Lisbon, Portugal, Tues., Thurs. and Sat.	4:30 to 7:00 P.M.
B-31.10	9.65	YDB, Soerabaja, Java, daily 4:30 to 10:00 A.M.;	Sat. until 11:00.
B-31.13	9.64	2RO3, Rome, Italy.	11:30 A.M. to 5:45 P.M., 6:00 to 7:45 P.M.
B-31.17	9.63	HJ2ABD, Bucaramanga, Colombia,	7:30 to 10:00 P.M. irregularly.
B-31.22	9.61	HJ1ABP, Cartagena, Colombia,	7:00 A.M. to 1:00 P.M., 5-11 P.M.
B-31.22	9.61	HH3W, Port-Au-Prince, Haiti.	1:00-2:00 P.M., 7:00-8:30 P.M. P.M.
B-31.25	9.60	HP5J, Panama City,	11:45 A.M. to 1:00; 7:30 to 11:00 P.M.
B-31.27	9.59	HLB, Geneva, Switzerland.	5:30 to 6:15 P. M., Saturday.
B-31.28	9.59	VK2ME, Sydney, Australia.	Sunday 1 to 3; 5 to 11 A.M.
B-31.28	9.59	RAN, Moscow, U.S.S.R.,	daily 7:00 to 8:00 P.M.
B-31.28	9.59	W3XAU, Philadelphia, Pa.	Testing new transmitter.

Meters	Meg.	STATION	TIME
B-31.28	9.59	-PCJ, Eindhoven, Holland,	Sunday 2:00 to 3:00 and 7:00 to 8:00 P.M. Tuesday 1:30 to 3:00 P.M., Wednesday 7:00 to 10:00 P.M.
B-31.31	9.58	-VK3LR, Melbourne, Australia,	10:30-3:00 irreg.; 3:15-7:30 A.M., daily.
B-31.32	9.58	-GSC, Daventry, England,	4 to 8 and 9 to 11 P.M.
B-31.35	9.57	-HJ2ABC, Cucuta, Colombia,	11:00 A.M. to noon; 6:00 to 9:30 P.M.
B-31.35	9.57	-CQN, Macao Port, China,	Monday and Friday 7:00 to 8:30 A.M.
B-31.36	9.57	-W1XX, Boston, Mass.	6:30 A.M. to 1:00 A.M. next day.
B-31.36	9.57	-VUB, Bombay, India,	Wed., Thurs., and Sat. 11:00 A.M. to 12:30 P.M.
B-31.38	9.56	-HJ1ABB, Barranquilla, Colombia,	heard Noon to 6:00 P.M. testing.
B-31.38	9.56	-DJA, Zeesen, Germany,	12:05 to 11:00 A.M. 4:50 to 10:45 P.M.
B-31.45	9.54	-VPD2, Suva, Fiji Islands,	Weekdays 5:30 to 7:00 A.M.
B-31.48	9.53	-IJ4ABH, Armenia, Colombia,	7:00 P.M. to 11:30 P.M., irreg.
B-31.48	9.53	-JZI, Nakazi, Japan,	Mon., Thurs. 4 to 5 P.M.; Tues, Fri. 2 to 3 P.M.
B-31.48	9.53	-LKJ1, Jeloy, Norway,	5:00-8:00 A.M., 11:00 A.M. to 6:00 P.M.
B-31.48	9.53	-W2XAF, Schenectady, N. Y.,	daily 4:00 P.M. to Midnight.
B-31.49	9.53	-ZBW3, Hong Kong,	used 3:00 to 10:00 A.M. irregularly.
B-31.55	9.51	-VK3ME, Melbourne, Australia,	Week-days 4:00 to 7:00 A.M.
B-31.55	9.51	-HJU, Buenaventure, Colombia,	12-2 P.M., 8-11 P.M., Mon., Wed., Fri.
B-31.55	9.51	-GSB, Daventry, England,	3 to 5 A.M., 9 A.M. to noon, 12:15 to 5:45 P.M.
B-31.56	9.50	-PRFS, Rio de Janeiro, Brazil,	Daily 4:45 to 5:45 P.M., also irreg.
B-31.58	9.50	-HJ1ABE, Cartagena, Colombia,	7:30 to 9:30 daily; Mon. 10:30 P.M.
B-31.65	9.48	-FAH, Madrid, Spain,	Broadcasts news 4:00 to 5:00 P.M.
T-31.71	9.46	-Tripoli, Africa,	Phones IAC, Italy, 6:00 A.M. to 1:00 P.M., irreg.
B-31.80	9.42	-COCH, Havana, Cuba,	7:00 A.M. to 1:00 A.M. next day.
T-31.86	9.42	-PLV, Bandoeng, Java,	Broadcasts Tues. and Thurs. 10:00-10:30 A.M.
B-32.09	9.35	-HS8PJ, Bangkok, Siam,	Thursdays 7:30 to 10:00 A.M.
T-32.15	9.33	-CGA4, Drummondville, Canada,	Phones ships and England, irregularly
B-32.26	9.30	-YNGU, Managua, Nicaragua,	1-2:55; 6-7 P.M. daily; Sun. 12-1 P.M.
T-32.33	9.28	-GCB, Rugby, England,	Phones CGA and SUV afternoons.
T-32.72	9.17	-WNA, Lawrenceville, N. J.	Phones England evenings.
T-32.83	9.14	-YVR, Maracay, Venezuela,	Phones Europe afternoons.
B-32.88	9.12	-HAT-4, Budapest, Hungary,	Sundays 6:00 to 7:00 P.M.
T-33.26	9.02	-GCS, Rugby, England,	Phones New York evenings.
E-33.29	9.01	-KEJ, Bolinas, California,	Tests irregular.
T-33.41	8.98	-WVY, Poona, India,	Phones England near 8:30 A.M.
B-33.50	8.95	-HCJB, Quito, Ecuador,	daily except Mon., 7:30 to 9:30 P.M.
E-33.52	8.95	-WEL-W2XBJ, Rocky Point, N. Y.	Testing irregularly evenings.
T-33.93	to 36.58	-8.84 to 8:20-	Ships. Heard irregularly.
E-34.10	8.79	-HKV, Bogota, Colombia,	Testing, 5:30 to 11:00 P.M., irregularly.
T-34.19	8.77	-PNI, Makassar, D. E. I.	Phones Java near 4:00 to 5:00 A.M.
T-34.56	8.68	-GBC, Rugby, England,	Phones ships irregularly.
B-34.62	8.66	-CO9JO, Camaguey, Cuba,	5:30 to 6:30 P.M.; 8:00 to 9:00 P.M.
E-34.68	8.65	-WVD, Seattle, Wash.	Testing irregularly.
B-34.72	8.64	-YNVA, Managua, Nicaragua,	7:30 to 9:30 P.M., irregular.
T-35.02	8.57	-WOO, Ocean Gate, N. J.	Phones ships irregularly.
T-35.42	8.47	-DAF, Norden, Germany,	Phones ships irregularly.
B-35.69	8.41	-HC2CW, Guayaquil, Ecuador,	8:00 to 11:30 P.M., irregular.
T-35.80	8.38	-IAC, Piza, Italy,	Works ships, irregularly.
B-36.63	8.19	-XEME, Merida, Yuc., Mexico,	10:30 to 3:00 P.M.; 6:30 to 11:00 P.M.
T-36.65	8.19	-PSK, Rio de Janeiro, Brazil,	Sending music 6:00 to 7:30 P.M.
B-36.95	8:12	-KTP, Manila, P. I.	Phones KWX 10:30 to 11:00 A.M.
T-38.06	7.86	-SUX, Cairo, Egypt,	Phones Rome and London afternoons.
B-38.08	7.85	-HC2JSB, Guayaquil, Ecuador,	12:00 to 2:00; 4:00 to 11:00 P.M.
B-38.47	7.80	-HBP, Geneva, Switzerland,	5:30 to 6:15 P.M. Saturdays.
E-38.50	7.78	-PSZ, Rio de Janeiro, Brazil,	Heard between 6:00 and 11:00 P.M.. irreg.
T-39.34	7.63	-RIM, Russia,	Phones RKI 6:00 to 8:15 A.M.
T-39.42	7.61	-KWX, Dixon, California,	Phones Hawaii nights.
B-39.74	7.55	-T18WS, Puntarenas, C. R.	Heard 7:00 to 11:00 P.M., irregularly.
B-39.89	7.52	-HCK, Quito, Ecuador,	heard 7:00 to 8:30 P.M.
T-39.89	7.52	-KKH, Kauhuku, Hawaii,	Phones KWO evenings.

Meters	Meg.	STATION	TIME
T-39.97	7.50	—RKI, Russia.	Phones RIM 6:00 to 8:15 A.M.
T-40.60	7.39	—ZLT2, Wellington, New Zealand,	phones Sydney 3:00 to 7:00 A.M. irreg.
B-40.65	7.38	—XECR, Mexico City,	broadcasts Sundays 6:00 to 8:00 P.M.
T-40.71	7.37	—KEQ, Kauhuku, Hawaii.	Phones Dixon nights.
B-41.55	7.22	—HKE, Bogota, Colombia.	Mon. 6 to 7 P.M.; Tues., Fri., 8 to 9 P.M.
B-41.55	7.22	—VP3BG, Georgetown, B. G.,	between 3:00 and 8:45 P.M. irregularly.
B-41.80	7.17	—CR6AA, Lobito, Angola, Africa,	Wed., and Sat., 2:30 to 4:30 P.M.
B-42.25	7.10	—FO8AA, Papeete, Tahiti.	Tuesdays and Fridays 11:00 P.M. to midnight.
B-42.35	7.08	—PI1J, Dordrecht, Holland,	Saturdays 10:10 to 11:10 A.M.
B-42.78	7.01	—EA8AB, Teneriffe, Canary Is.;	Mon., Wed., Fri., Sat., 3:15-4:15 P.M.
B-42.88	7.00	—PZH, Paramaribo, Dutch Guiana,	2:40 to 9:40 P.M. irregularly.
E-43.00	6.98	—XBA, Tacubaya, Mexico,	9:30 A.M. to 1:00; 7:00 to 8:30 P.M.
T-43.45	6.90	—GDS, Rugby, England.	Phones New York nights.
B-43.48	6.90	—HI2D, Trujillo, D. R.,	heard 7:00 to 10:00 P.M. irregularly.
B-43.99	6.82	—XGOX, Nanking, China,	daily 5:30 to 9:40 A.M.; Sun. 7 to 9 A.M.
B-44.12	6.80	—HI7P, Trujillo, D. R.	Heard 7:30 to 9:00 P.M.
T-44.41	6.75	—WOA, Lawrenceville, N. J.	Phones England nights.
T-44.44	6.75	—JVT, Nazaki, Japan.	1:30 to 8:00 A.M., oftimes with music.
B-44.58	6.73	—II13C, San Romano, D. R.	12:10 to 1:40 P.M. and 6:10 to 7:40 P.M.
B-44.60	6.72	—PMH, Java,	5:30 to 10:30 A.M.
B-44.71	6.71	—TIEP, San Jose, Costa Rica.	5:00 to 10:00 P.M., irreg.
B-44.90	6.70	—TI2M, San Jose, Costa Rica,	heard 9:00 to 11:00 P.M. irregularly.
B-44.96	6.67	—HIH, San Pedro de Macoris, D. R.,	heard 5:50 to 9:00 P.M. irregularly.
E-44.96	6.67	—YVQ, Maracay, Venezuela,	broadcasts 7:00 to 8:30 P.M. Saturdays.
B-45.00	6.67	—HC2RL, Guayaquil, Ecuador.	Sun. 5:45-7:45, Tues. 9:15-11:15 P.M.
T-45.10	6.65	—IAC, Piza, Italy.	Phones ships evenings.
B-45.31	6.62	—PRADO, Riobamba, Ecuador.	Thursdays 9:00 to 11:30 P.M.
B-45.25	6.63	—HIT, Trujillo, D. R.,	12:10 to 1:40; 5:40 to 8:40 P.M. weekdays.
E-45.80	6.55	—XBC, Vera Cruz, Mexico,	8:15; 9:00; 11:00 A.M.; 6:00; 8:00 P.M.
B-45.81	6.55	—TIRCC, San Jose, Costa Rica,	daily 6 to 7; Thurs., Sun., 6 to 11 P.M.
B-45.81	6.55	—HI4D, Trujillo, D. R.	11:55 to 1:40 P.M., 4:40 to 7:40 P.M.
B-45.85	6.54	—YV11RB, Bolivar, Venezuela,	testing between 9:00 and 11:00 P.M.
B-46.01	6.52	—YV6RV, Valencia, Venezuela.	12:00-2:00 P.M. and 6:00-10:00 P.M.
B-46.13	6.50	—HIL, Trujillo, D. R.,	11:40 to 1:40; 5:40 to 7:40 P.M. daily.
B-46.30	6.48	—HI4V, San Francisco de Macoris, D. R.,	5 to 10 P.M. irregularly.
B-46.51	6.45	—HI8A, Trujillo, D. R.,	daily 8:40 to 10:40 A.M.; 2:40 to 4:10 P.M. Sat. 9:40 to 10:40 P.M., Sun. 2:40 to 4:40 P.M.
B-46.51	6.45	—HJ4ABC, Ibague, Colombia.	11:00 A.M. to Noon; 8 to 11 P.M. daily.
B-46.51	6.45	—HJ1ABB, Barranquilla, Colombia.	4:30 to 10:00 P.M. daily.
B-46.73	6.42	—HI1S, Puerto Plata, D. R.,	11:40-1:40; 5:40-7:40; 9:40 to 11:40 P.M.
E-46.73	6.42	—W9XBS, Chicago, Illinois.	Heard irregularly broadcasting.
E-46.77	6.41	—HJA3, Barranquilla, Colombia.	Phones HJA2, irregular.
B-46.80	6.41	—TIPG, San Jose, Costa Rica,	12:00 to 2:00 P.M.; 6:00 to 11:30 P.M.
B-46.88	6.40	—YV9RC, Caracas, Ven.,	7:00 to 10:00 P.M. irregularly.
B-46.95	6.39	—YV1RH, Maracaibo, Ven.,	6:30 P.M. to 1:00 A.M. irregularly.
B-47.24	6.36	—HRP1, San Pedro Sula, Honduras,	1 to 3 P.M.; 8:45 to 11:00 P.M.
B-47.24	6.35	—YV1RG, Valera, Ven.,	5:30 to 8:30 P.M.
B-47.24	6.35	—HRY, Tegucigalpa, Honduras,	heard testing 6:45 to 9:30 P.M.
B-47.32	6.34	—HH3NW, Port Au Prince, Haiti,	1:00 to 2:00; 7:00 to 8:00 P.M.
B-47.32	6.34	—HIX, Trujillo, D. R.	Daily 4:40 to 5:40 P.M. Tuesday and Friday 8:10 to 10:00 P.M. Sundays 7:40 to 10:40 A.M.
E-47.39	6.35	—JZG, heard relaying JVT,	JOAK from 5:00 to 7:30 A.M., irregularly.
B-47.50	6.31	—HIZ, Trujillo, D. R.,	11:30 to 2:45; 5:30 to 9 P.M. daily; Sat. 10 P.M.
B-47.51	6.30	—YV12RM, Maracay, Venezuela,	8:00-10:30 daily; 4:30-11:00 P.M. irreg.
B-47.77	6.28	—COHD, Sancti Spiritus, Cuba,	9 to 10 A.M.; 12-1; 4-6; 9-11 P.M.
B-47.77	6.28	—HIG, Trujillo, D. R.	7:10-8:40 A.M., 12:40-2:10 P.M., 8:10-9:40 P.M.
B-48.00	6.25	—OAX4G, Lima, Peru,	daily 7:00 to 10:30 P.M., Wed. at 6:00 P.M.
B-48.08	6.24	—HIN, Trujillo, D. R.,	11:40 to 4:10 P.M.; 7:10 to 9:10 P.M.
B-48.08	6.24	—HI8Q, Trujillo, D. R.,	10:40 A.M. to 1:40 P.M.; 4:40 to 7:40 P.M.
B-48.11	6.23	—HRD, La Ceiba, Honduras,	Sunday 4 to 6 P.M.; weekdays 8 to 11 P.M.
B-48.39	6.20	—COKG, Santiago, Cuba,	8:30 A.M. to 11:00 P.M.
B-48.50	6.19	—HI1A, Santiago de los Caballeros, D. R.,	11:40 to 1:40; 7:40-9:40 P.M.
B-48.55	6.18	—XEXA, Mexico City,	6-9 A.M.; 1:00-2:45; 5-9 P.M.

Meters	Meg.	STATION	TIME
B-48.60	6.17	HJ2ABC, Tunja, Colombia.	1:00-2:00 P.M. and 7:00 to 10:00 P.M.
B-48.70	6.16	YV3RC, Caracas, Ven.,	10 A.M. to 1:00 P.M.; 3:00 to 9:30 P.M.
B-48.78	6.15	HJ4ABU, Pereira, Colombia,	9 A.M. to noon; 6 to 10 P.M.
B-48.80	6.14	ZEB, Bulawayo, Rhodesia,	Sun. 3-5 A.M.; Tues. and Fri. 1:15-3:15 P.M.
B-48.80	6.15	H15N, Trujillo, D. R.,	6:40 to 9:10 P.M.
B-48.80	6.15	CJRO, Winnipeg, Canada,	6:00 P.M. to Midnight.
B-48.86	6.14	W8XK, Pittsburg, Pa.	Relays KDKA 9:00 P.M. to 1:00 A.M.
B-48.92	6.13	ZGE, Kuala Lumpur, S. S.	Sun., Tues. and Fri., 6:40 to 8:40 A.M.
B-48.92	6.13	VE9HX, Halifax, Canada.	9:30-1:30 P.M., 5:00 to 11:00 P.M.
B-48.92	6.13	COCD, Havana, Cuba.	Heard 5:00 P.M. to 1:00 A.M., irregularly.
B-48.98	6.13	Montevideo, Uruguay,	3:30 to 9:00 P.M.
B-49.00	6.12	HJ3ABX, Bogota, Colombia,	10:30 to 2:00; 5:30 to 11:30 P.M.
B-49.02	6.12	XEFT, Vera Cruz, Mexico.	11:30 to 4:00 P.M., 7:30 P.M. to 12 M.
B-49.02	6.12	W2XE, Wayne, N. J.	Relays WABC 10:00 to 11:00 P.M. daily.
B-49.10	6.11	VUC, Calcutta, India.	9:30 A.M. to Noon, Sat. 11:45 P.M. to 3 A.M.
B-49.05	6.11	OLR, Podebrady, Czechoslovakia.	See News Section.
B-49.10	6.11	GSL, Davenport, England,	6:00 to 8:00 P.M.
B-49.15	6.10	HJ4ABB, Manizales, Colombia.	8:00 to 11:30 P.M., irregularly.
B-49.18	6.10	Belgrade, Yugoslavia,	1 to 3; 6:30 to 8:15 A.M.; noon to 5:00 P.M.
B-49.18	6.10	W3XAL, Bound Brook, N.J.	Mon., Wed. & Sat. 4 P.M. to 1 A.M.
B-49.18	6.10	W9XF, Chicago, Ill.	Daily 12-1 A.M. Sun., Tue. & Thur. 8-1 A.M.
B-49.20	6.09	ZTJ, Johannesburg, Africa.	3:30 to 7:00 A.M.; 9:00 A.M. to 4:00 P.M.
B-49.22	6.09	CRXC, Bowmanville, Canada.	Daily 5:30 to 11:30 P.M.
B-49.25	6.09	HJ4ABE, Medellin, Colombia,	11:00 A.M. to Noon; 6:00 to 11:30 P.M.
B-49.26	6.09	ZBW2, Hong Kong, used	irregularly 3:00 to 10:00 A.M.
B-49.30	6.08	HJ5ABD, Cali, Colombia,	7:00 to 10:00 P.M.
B-49.31	6.08	VO7LO, Nariobi, Africa.	11:00 A.M. to 3:30 P.M., 5:45 to 6:15 A.M.
B-49.34	6.08	W9XAA, Chicago, Illinois.	No apparent regular schedule.
B-49.34	6.08	HP5F, Colon, Panama,	11:45 to 1:15 and 7:45 to 10:00 P.M.
B-49.34	6.08	ZHJ, Penang, S. S.	Daily 6:40 to 8:40 A.M.
B-49.40	6.07	VE9CS, Vancouver, B. C.	Daily 6-7 P.M., Sun. 1:45 P.M. to 1:00 A.M.
B-49.42	6.07	YV7RMO, Maracaibo, Ven.,	heard 7:00 P.M. to midnight irregularly.
B-49.42	6.07	HJ3ABF, Bogota, Colombia.	7:00 P.M. to 11:15 P.M., irreg.
B-49.45	6.06	HJ4ABL, Manizales, Col.,	11-Noon, 5:30-7:30 daily, Sat. 10:30 P.M.
B-49.50	6.06	QXY, Skamlebaek, Denmark.	Daily 1:00 to 6:00 P.M.
B-49.50	6.06	W8XAL, Cincinnati, Ohio.	5:30-7:00 P.M., 10 P.M. to 1:00 A.M.
B-49.59	6.05	HI9B, Santiago City, D. R.,	heard 6 to 10 P.M. 12:30 to 1:40 A.M.
B-49.55	6.05	HJ3ABD, Bogota, Colombia.	7:30 to 11:00 P.M.
B-49.65	6.04	HJ1ABG, Barranquilla, Colombia,	11:00 A.M. to 11:00 P.M.
B-49.67	6.04	W4XB, Miami Beach, Florida.	11 A.M. to 1 P.M., 7:30 to 10:30 P.M.
B-49.67	6.04	W1XAL, Boston, Fass.,	Sunday 5 to 7 P.M. Mon. and Fri. 7 to 9 P.M.
B-49.75	6.03	VE9CA, Calgary, Canada,	6 A.M. to noon; 7:00 P.M. to midnight Sun.
B-49.75	6.03	HJ4ABP, Medellin, Colombia,	6:00 to 11:00 P.M.
B-49.75	6.03	HP5B, Panama City,	12 Noon to 1 P.M.; 7:00 to 10:30 P.M.
B-49.80	6.02	HJ1ABJ, Santa Marta, Colombia,	6:00 to 11:30 P.M. irregularly.
B-49.83	6.02	XEUW, Vera Cruz, Mexico,	8:00 P.M. to 12:30 A.M. irregularly.
B-49.83	6.02	PRAS, Pernambuco, Brazil.	3:00 to 8:00 P.M., irreg.
B-49.85	6.01	HJ3ABH, Bogota, Colombia.	11:30 to 2, 6 to 11 P.M. Sun. 4-11 P.M.
B-49.88	6.01	HI3U, Santiago, D. R.,	weekdays 7:30 to 9:00 A.M.; 12:00 to 2:00; 5 to 7; 8:00 to 9:30 P.M.; Sundays 12:30 to 2:00; 5 to 6 P.M.
B-49.90	6.01	COCO, Havana, Cuba.	9:30 A.M. to 12:30 Noon; 4:00 to 7:00 P.M.; 8:00 to 10:00 P.M.; Saturdays at 11:30 P.M.
B-49.90	6.01	VP3MR, Georgetown, B.G.,	4:45-8:45 P.M. daily; 7:45-10:15 A.M. Sun.
B-49.92	6.01	OLR, Podebrady, Czechoslovakia.	See News Section.
B-49.92	6.01	ZHI, Singapore.	Mon., Wed., Thurs., 5:40-8:10; Sat. 10:40-1:10 A.M.
B-49.96	6.00	CFCX, Montreal, Canada,	8:00 A.M. to 11:15 P.M.
B-49.96	6.00	HP5K, Colon, Panama.	7:30 to 9:00 A.M., 12-1 P.M., 6:00-9:00 P.M.
B-50.00	6.00	VP3MR, Georgetown, B. G.,	4:45-8:45 P.M. daily; Sun. 7:45-10:15 P.M.
B-50.00	6.00	RW59, Moscow, U.S.S.R.,	2:30 to 5:00 or 6:00 P.M. daily.
B-50.00	6.00	XEBT, Mexico City,	6:00 P.M. to 1:00 A.M. irregularly.
B-50.00	6.00	HJ1ABC, Quibdo, Colombia	daily 5-6 P.M.; Wed. and Sun. 9-11 P.M.
B-50.26	5.97	HVJ, Vatican City.	Daily, 2:00 to 2:15 P.M., Sun. 5:00 to 5:30 A.M.
B-50.26	5.97	HJN, Bogota, Colombia,	6:00 to 11:00 P.M. irregularly.

Meters	Meg.	STATION	TIME
B-50.51	5.94	HJ4ABD, Medellin, Colombia,	8:00 to 11:30 P.M.
B-50.51	5.94	TG2X, Guatemala City, Monday, Thursday and Saturday	4 to 6 P.M. and 10:00 to 12:00 P.M.; Sundays 1:00 to 2:00 P.M.
B-50.76	5.91	YV15RV, Valencia, Ven.,	testing 5:00 P.M. to 2:00 A.M.
B-50.85	5.91	HH2S, Port-Au-Prince, Haiti,	7:30 to 9:40 P.M. irregularly.
B-50.90	5.90	YV8RB, Barquisimeto, Venezuela.	Noon to 1:00 P.M., 6 to 10 P.M.
B-50.93	5.89	JIC, Tawian, Japan, phones JVV	6:00 to 8:00 A.M.
B-51.11	5.87	HRN, Tegucigalpa, Honduras.	1:15 to 2:15 P.M., 7:30 to 10:00 P.M. week-days. Sundays 3:30 to 5:30 P.M. and 8:30 to 9:30 P.M.
B-51.15	5.86	HI1J, San Pedro de Macoris, D.R.	11:40 to 1:40 P.M., 5:40 to 9:40 P.M.
T-51.26	5.85	WOB, Lawrenceville, N. J.	Phones Bermuda nights.
B-51.28	5.85	YV5RMO, Maracaibo, V.,	8:45-9:45 A.M.; 11:15-12:45; 4:45-9:45 P.M.
B-51.50	5.82	TJGPH, San Jose, Costa Rica.	Noon-2:00 P.M., 7:00 11:00 P.M.
T-51.50	5.82	HJA2, Bogota, Colombia.	Phones HJA3 afternoons and evenings.
B-51.72	5.80	YV2RC, Caracas, Venezuela,	11:00 A.M. to 2:30; 5:00 to 10:30 P.M.
B-51.72	5.80	ZEC, Salisbury, Rhodesia,	Sun. 3-5 A.M.; Tues. & Fri. 1:15-3:15 P.M.
B-51.90	5.78	OAX4D, Lima, Peru.	Wed. and Sat. from 8:00 to 11:30 P.M.
B-52.26	5.74	TGS, Guatemala City, Wed., Thurs., and Sun.	6:00 to 9:00 P.M.
B-52.36	5.73	HC1PM, Quito, Ecuador, heard 10:00 P.M.	to 1:00 A.M. irregularly.
B-52.45	5.72	YV1ORS, San Cristobal, Venezuela,	7:00 to 11:30 P.M. irregularly.
B-52.45	5.72	YNOP, Managua, Nicaragua,	8:00 to 10:30 P.M. irregularly.
E-52.97	5.66	CFU, Rossland, Canada.	Works CFO and CFN near 10 P.M. irreg.
B-54.74	5.48	TI5HH, San Roman, Costa Rica,	3:30 to 4:00; 8:00 to 11:30 P.M.
E-55.56	5.40	HJA-7, Cucuta, Colombia.	Mondays 4:30 to 7:30 P.M., irregularly.
B-58.30	5.15	PMY, Bandoeng, Java.	6:00 A.M. to Noon.
T-59.08	5.08	WCN, Lawrenceville, N. J.	Phones England evenings.
T-59.76	5.02	ZFA, Hamilton, Bermuda.	Phones U.S.A. and ships at night.
T-60.26	4.98	GBC, Rugby, England.	Phones to ships, irregularly.
T-61.15	4.90	CGA8, Drummondville, Canada.	Phones ships irregularly.
T-61.98	4.84	GDW, Rugby, England,	phones U.S.A. nights.
B-62.63	4.79	VE9BK, Vancouver, B. C.	2:00-4:00 P.M., 7-9 P.M., 11 PM.-1:00 AM.
T-63.13	4.75	WOO, Ocean Gate, N. J.	Phones ships irregularly.
B-65.22	4.60	HC2ET, Guayaquil, Ecuador.	Wed. and Sat. 9:00 to 11:00 P.M.
B-66.50	4.51	ZFS, Nassau, Bahamas.	Works WND evenings.
T-67.87	to 73.17	4.42 to 4.10—Ships.	Heard irregularly.
B-70.65	4.25	RV15, Khabarovsk, U.S.S.R.,	1:00 to 10:00 A.M.
T-73.21	4.10	WND, Hialeah, Florida.	Phones irregularly with VPN.
E-75	to 75.8	4.00 to 3.96—Amateurs	on voice.

SHIP STATIONS

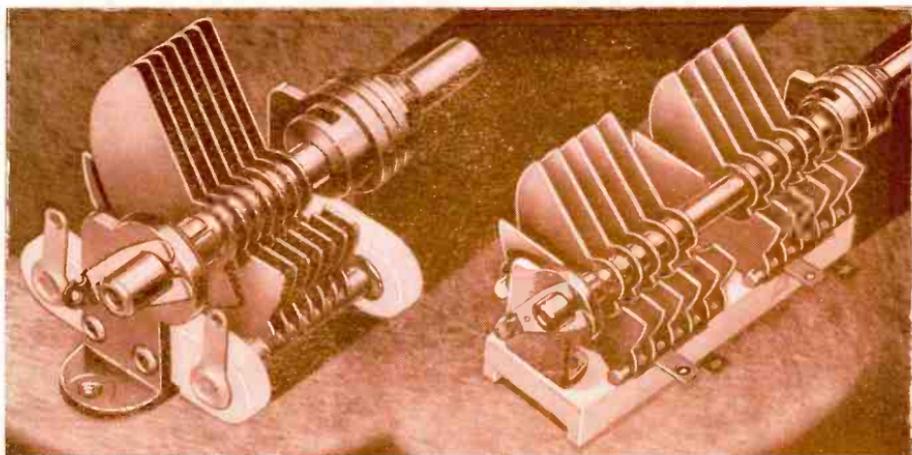
These stations are telephone stations but are sometimes rented to broadcast a special program from a ship. They operate on four bands: 16.85 to 18.27 meters, 22.50 to 24.3 meters, 33.93 to 36.58 meters and 67.87 to 73.17 meters. In megacycles this is 17.80 to 16.42, 13.34 to 12.35, 8.84 to 8.20 and 4.42 to 4.10.

VQJM, Monarch of Bermuda; GLSQ, Olympic; GFJY, Caledonia; GBTT, Queen Mary, Normandie; GMBJ, Empress of Britain; DOAH, Bremen, DOAI, Europa; DHEY, Deutschland; DHJZ, Hamburg; DOAX, Columbus; DHAO, Hansa; DHRL, New York; ICEJ, Rex; IBLI, Conte de Savonia; GBZW, Berengaria; DHDL, Cap Arcona.

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