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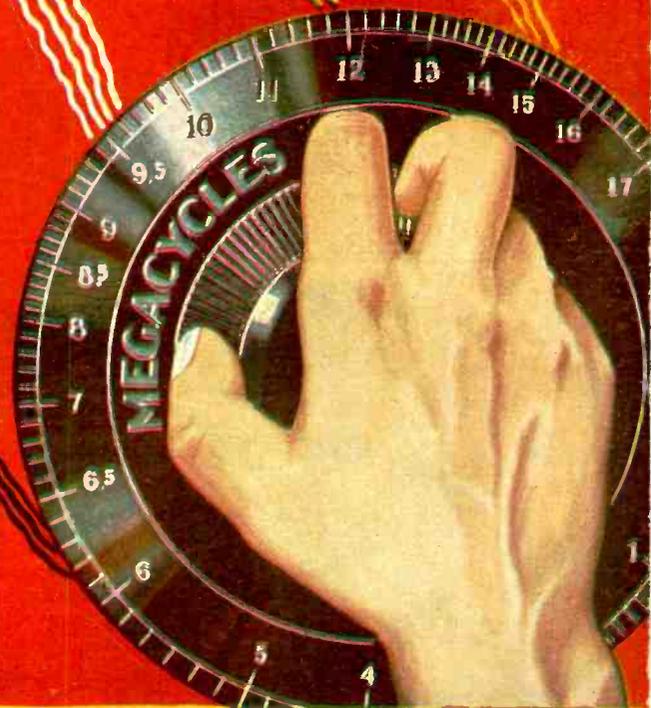
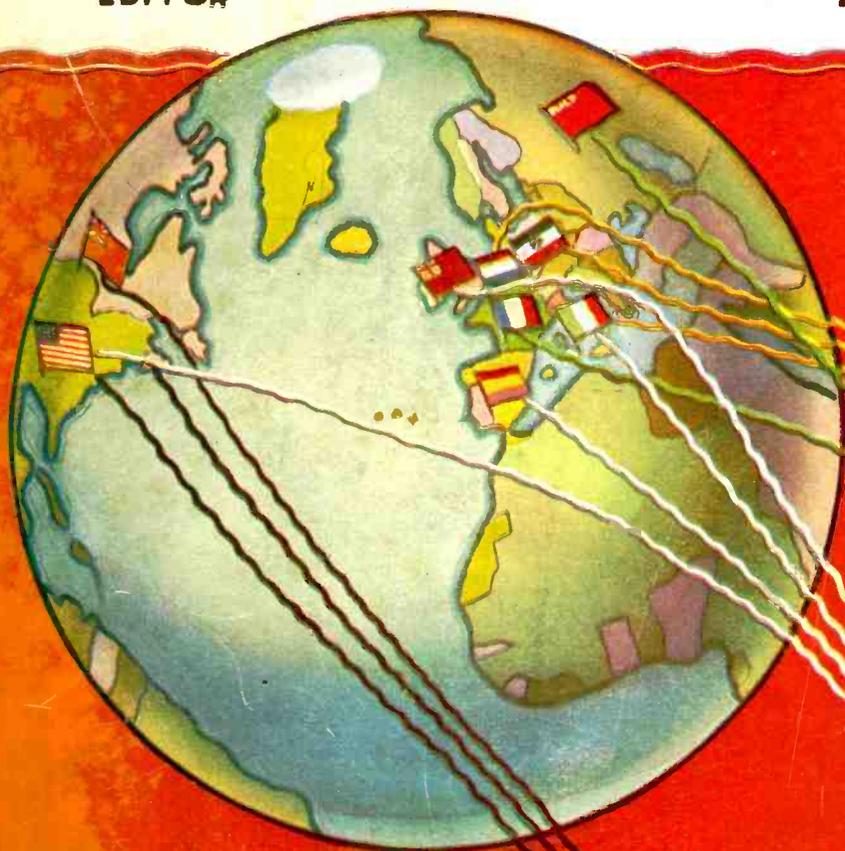
Canada 30¢

# OFFICIAL Short Wave Listener

HUGO GERNSBACK  
EDITOR

MAGAZINE

**4,600**  
SHORT-WAVE  
STATIONS  
LISTED  
IN THIS  
ISSUE



Tune In The  
World!

LARGEST AND BEST SHORT-WAVE STATION LIST IN PRINT • PHOTOS OF S-W ARTISTS  
WHERE TO FIND S-W STATIONS ON YOUR DIAL • WORLD SHORT-WAVE STATION MAP

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No. 147

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S W L-9-35

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Send remittance in check or money order—register letter if it contains cash, stamps or currency. GLOBES ARE SHIPPED FROM OUR WAREHOUSE IN CHICAGO—F. O. B. FROM THAT CITY.

THESE remarkable globes, executed in fourteen colors, are absolutely indispensable for short wave fans. Notable among the numerous features of these world globes, is that a damp cloth quickly removes all dust and water does not harm the surface.

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There is a graduated "Meridian" scale of black enameled metal with the 9" and 12" globes. An additional feature is the movable hour scale found at the north pole—this facilitates determining the hour in any part of the world.

Only on a globe of this size is it possible to get an accurate picture of countries and their relative positions to each other. You will actually be amazed when you compare distances—from New York to Moscow; from Cape Town to Tokio; from Los Angeles to Rio de Janeiro, etc. A flat map is deceptive for measuring, but take a small string and stretch it across the globe, from city to city, and you have the correct distances.

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No. 99

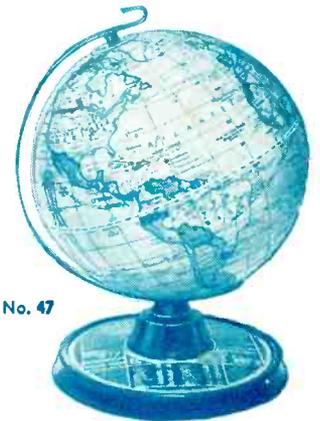
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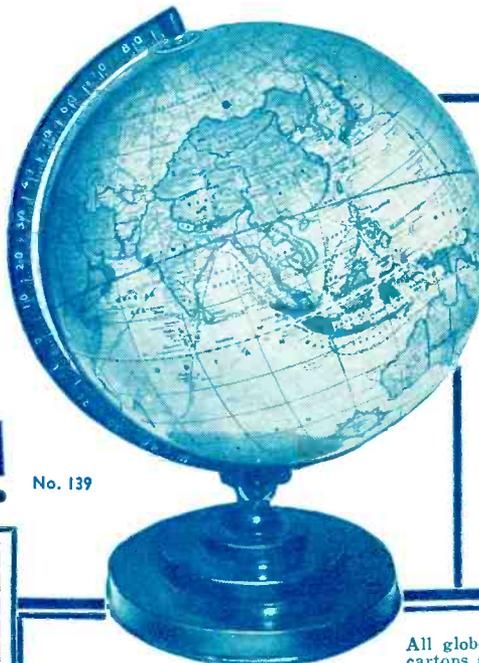
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No. 47



No. 139

## SPECIAL THIS MONTH

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Don't be an untrained man. Let me show you how to get your start in Radio—the fastest growing, livest money-making game on earth.

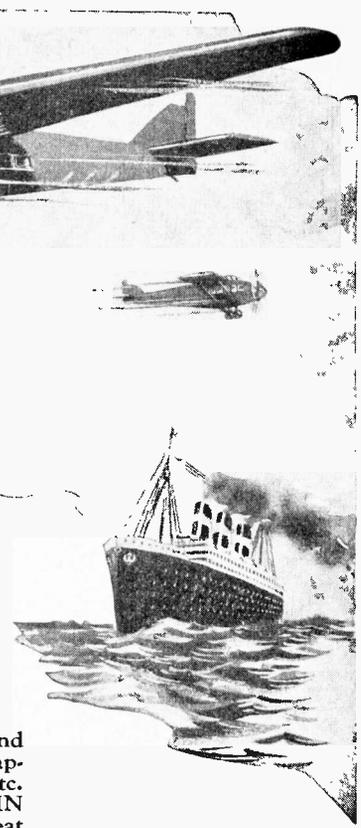
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I am making an offer that no other school has dared to do. I mean exactly what I say. You can get a complete training by the world's oldest and largest Practical Radio School and I'll finance your Tuition. You won't have to start paying me back in small, monthly payments until 2 months after your required training period is over. I consider the fellow who is ambitious enough to want to get ahead by taking my Training, worthy of my help. MAIL THE COUPON BELOW, and you can prove to me that you are willing to spend just TEN WEEKS in the Coyne Training Shops Learning RADIO. Then, I'll tell you how I finance your Tuition—give you your complete Training and let you pay me back later.

I've got enough confidence in ambitious fellows and in my methods to give them the training they need and let them pay me back after they have completed their training.

### ELECTRIC REFRIGERATION AIR CONDITIONING

To assure your thorough preparation for a prosperous future, I include—at no extra cost—a course in Electric Refrigeration and Air Conditioning, taught you by personal instruction and actual work on latest-type equipment.

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ALL ACTUAL, PRACTICAL WORK. You build radio sets, install and service them. You actually operate great Broadcasting equipment. You construct Television Receiving Sets and actually transmit your own Television programs over our Television equip-

ment. You work on real Talking Picture machines and Sound equipment. You learn Wireless Operating on Actual Code Practice apparatus. We don't waste time on useless theory. We give you the practical training you'll need—in 10 short, pleasant weeks.

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You get Free Employment Service for Life. And don't let lack of money stop you—my plan makes it possible to get Coyne training with very little money. Many of our students make all or a good part of their living expenses while going to school and if you should need this help just write to me. Coyne is 36 years old. Coyne Training is tested—proved beyond all doubt. You can find out everything absolutely free. Just mail coupon for my big free book!

H. C. Lewis, Pres. RADIO DIVISION Founded 1899

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Radio Division, Coyne Electrical School

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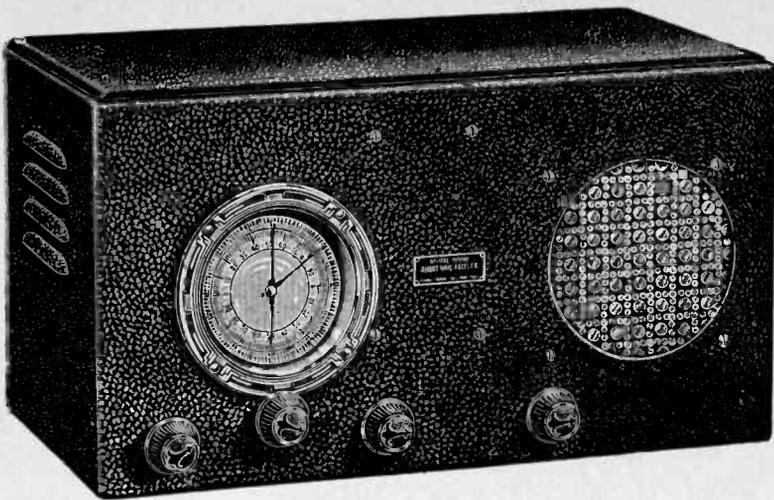
Fans, Take Notice!

# CONTINUOUS BANDSPREAD

on all bands

## THE OFFICIAL DOERLE BANDSPREAD

### 5-TUBE DE-LUXE A. C. SHORT-WAVE RECEIVER



### NATION-WIDE TESTIMONIALS PRAISE THIS SET

Dear Sir:

I want to tell you that the radio which I bought from you recently is working fine. I have received California on long-waves, and on short-waves have logged about 93 stations. Three from the greatest distance are VK3LR, VK2ME and VK3ME, all located in Australia. And I get them consistently, not just once in a great while, at great volume, on a small window-sill aerial.

The set certainly has some "kick" to it.  
Ernest J. Orishek, 118 White St., Westfield, Mass.

Dear Sirs:

Just a line or so to give you an idea of what my Doerle A. C. 5 hauled in during a 2 weeks listening test. All the G and D stations were received also TIEP, W9XF, PRADO, HJ4ABE, W8XAL, W2XE, W8XX, CJRO, YU2RC, CJRX, COC, HJ4ABB, HJ1ABB, YU5RMO, YP3RC, WCRCT, CT1AA, W1XAL, W9XAA, W1XAZ, EAQ, WESGW, HC2RL, HJ3ABD, KEJ, HJB, HP5B, HJ1ABD, WNB, YUIRC, HIZ, JYK, FYA, YU4RC, OA4AD, RNE, PHI, RK1 WNC, YNA, COH, PRF5, WQON, XEBT, W2XAF, LSL, I2RO, IRM, JYS, UK3LR. All stations come in with strong carriers with a QSA4-5—R9 plus. "Hams" in 48 states and foreign countries besides practically all Police Radio Stations were received.

Frances Kmetz, 213 Linden St., Allentown, Pa.

Gentlemen:

The Doerle "AC-5" arrived all O.K. Had it going in about ten minutes after unpacking. It sure seems to be fine, we enjoy it very much. I am new at short-wave tuning but the bandspread dial makes tuning a real pleasure. I only have a short wire aerial so cannot give you any long list of stations received, but have received many foreign stations. I think Rio De Janeiro about the best distance at about 8V volume.  
Ralph C. Rathbun, 9 Seward Ave., Bradford, Pa.

Gentlemen:

Here is a list of Short-Wave stations I have received in a short time with my "DOERLE AC5", with a very poor aerial for short-wave work. EAQ—Madrid, Spain; W1XAZ—Springfield, Mass.; W2XAF—Schenectady, N.Y.; COH—Havana, Cuba; COC—Havana, Cuba; VE9GW—Bowmanville, Ontario, Canada; CT1AA—Lisbon, Portugal; PRF5—Rio De Janeiro, Brazil; HJ1ABB—Barranquilla, Col., S. A.; PRADO—Tlobamba, Ecuador, S.A.; DJC—Berlin, Germany; XEBT—Mexico City, Mexico; YU5RMO—Maracibo, Venezuela, S. A.; GRIJO—Winnipeg, Canada; W2XE—New York, N. Y.; W8XX—Pittsburgh, Pa.; HP5B—Panama City, Panama; FYA—Paris, France; GSC & GSI—Darenty, England.

EAQ—Madrid, Spain and COH—Havana, Cuba come in every night on the loud speaker regardless of weather conditions. This is the third and best receiver I have owned in the short time I have been interested in Short Waves.

Emerald H. Delbrugge, Rose-Mary Dahlia Gardens, Martins Ferry, Ohio.

Original letters plus others may be seen at our office.

# FREE

IMPORTANT BUYING GUIDE FOR  
RADIO DEALERS, SERVICE MEN,  
EXPERIMENTERS, AND SHORT-  
WAVE FANS

32 Pages. Two Colors. Profusely Illustrated.  
Up-to-the-minute catalog containing low prices which

saves you money. Contains radio sets, parts, public address equipment, short-wave receivers, etc., etc.

Name the item—it's in the catalog  
Send postcard or letter. Book sent by return mail. See page 101 for more details.

Complete Price

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WITH TUBES

Nothing Else to Buy

- » Doublet Antenna Input or
- » Standard Antenna Input
- » 8-Low Loss Bakelite Plug-in Coils
- » 15-200 Meters   » Fully Shielded
- » Bandspread Dial   » Dynamic Speaker
- » Headset Jack   » Beautiful Cabinet

**B**EFORE you buy any other Short-Wave Receiver, be sure to take advantage of our **FREE** five day trial offer explained below. Satisfy yourself, in your own home and at your leisure that this **IS** one of the greatest values in radio, and that it **DOES** have features which are found in more expensive receivers.

A powerful 5-tube "rig" complete with its self-contained hum-free power pack and dynamic speaker; all mounted on a single chassis and contained in a large handsomely finished black crackle cabinet with patterned speaker grill.

Two tuned stages—regenerative detector, 3AF stages with powerful 4I pentode output and perfectly matched dynamic speaker; all these features contribute to the great power and fine performance of this Doerle short wave receiver.

**CONTINUOUS BANDSPREAD ON ALL BANDS.** A special double-pointer, double-scale, airplane dial having a tuning ratio of 125 to 1 is employed.

Many fine features that you would expect to find in more expensive receivers are incorporated in this "ACE TOPNOTCHER" of the entire Doerle line.

Either a short-wave doublet or standard antenna may be used. A new antenna-adjusting scheme permits perfect alignment of both tuned circuits without appreciably affecting the setting of the tuning dial. Provisions are made to use headphones if desired, with a switch to cut out the dynamic speaker.

### LOOK AT THIS DX-QSL LIST!

During its initial test, in New York City, this receiver pulled in on its loud speaker, at good room volume, the following enviable log: W1XAL, W1AZ, Boston; W3XAL, Boundbrook, N. J.; W8XAL, Cincinnati; W9XAA and W9XF, Chicago; GSC, GSD, GSE, GSF, Daventry, England; DJA, DJB, DJC, DJD, Zeesen, Germany; HBL, HBP, Geneva; VE9GW Ontario; V9DN Quebec; GE9DR Montreal; VE9HX Halifax; XETE Mexico City; YU1BC, YV3BC Caracas; CP5 Bolivia; LSN Buenos Aires; COC Havana; EAQ Madrid; WQO and WEF, testing with the Byrd Expedition and a whole flock of amateurs in practically every radio district of the United States. After that, we could no longer keep our eyes open so we "signed off" to bed.

The testimonials printed on this page testify that, in actual use, our customers are attaining even greater success. Uses a simple regenerative circuit—so simple as to be entirely reliable. Tubes: 1—6D6, 1—6F7 (actually two tubes in one), 1—3I, 1—4I power output tube and 1—80 full-wave rectifier. Two gang tuning condenser; single dial control; FULL-VISION ILLUMINATED BAND SPREAD AIRPLANE DIAL. Ship. wt. 35 lbs. No. 5000. "DOERLE AC-5" Short-Wave Receiver. Complete with Tubes, Speaker and 8 coils 15 \$27.56 to 200 meters. Completely wired and tested. (NOT SOLD IN KIT FORM) YOUR PRICE

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Instructions  
and  
Diagrams  
Included  
with each  
SET

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Gentlemen: RL-9-35

I enclose \_\_\_\_\_ dollars \_\_\_\_\_ cents for your new Doerle 5-Tube De-Luxe Short-Wave receiver on a five day free trial basis. I am to prove to my own satisfaction that it will give me world-wide reception and that your guarantee means exactly what it says. If, at the end of five days after receipt of radio, I am not perfectly satisfied, I will write you accordingly, whereupon, you will send shipping instructions. Upon receipt of the radio, you will refund me the full purchase price. I agree to pay express charges one way, and you the other.

C.O.D. SHIPMENT. I enclose \_\_\_\_\_ dollars \_\_\_\_\_ cents deposit balance of \_\_\_\_\_ dollars \_\_\_\_\_ cents C.O.D.

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Address \_\_\_\_\_

Town \_\_\_\_\_ State \_\_\_\_\_

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OFFICIAL  
**SHORT-WAVE  
 LISTENER**  
 MAGAZINE

Combined with  
 OFFICIAL SHORT-WAVE  
 LOG AND CALL MAGAZINE

AUGUST-SEPTEMBER, 1935

VOLUME II, No. 1

**WHAT DO YOU WANT?**

● *The editors want you to feel that this is YOUR magazine and that it is edited entirely for you. You appreciate the fact that in order to be successful a magazine must cater to the likes of its readers and that the personal likes and dislikes of the editors count for naught.*

*And while we have received, and do receive every day, dozens of letters from our readers, many of which are laudatory, most of the letters, while they make nice reading for the editors, really do not give us YOUR viewpoint.*

*What we want from you is suggestions as to what sort of material you want to read in this magazine. Remember, that only by such guidance can we do the best job for you. There may be certain things in the SHORT WAVE LISTENER that you do not like. If there are such articles or such features, do not hesitate to advise us because only by your guidance can we make the magazine so that the majority of the readers will benefit by reading it.*

*Always remember, that the magazine is edited for YOU. Write us what you want and what you don't want. We will try and comply with all the suggestions, where ever this is possible.*

HUGO GERNSBACK,  
 Editor.

**Popular Book Corporation**

Editorial and General Offices  
 99-101 Hudson St., New York, N. Y.

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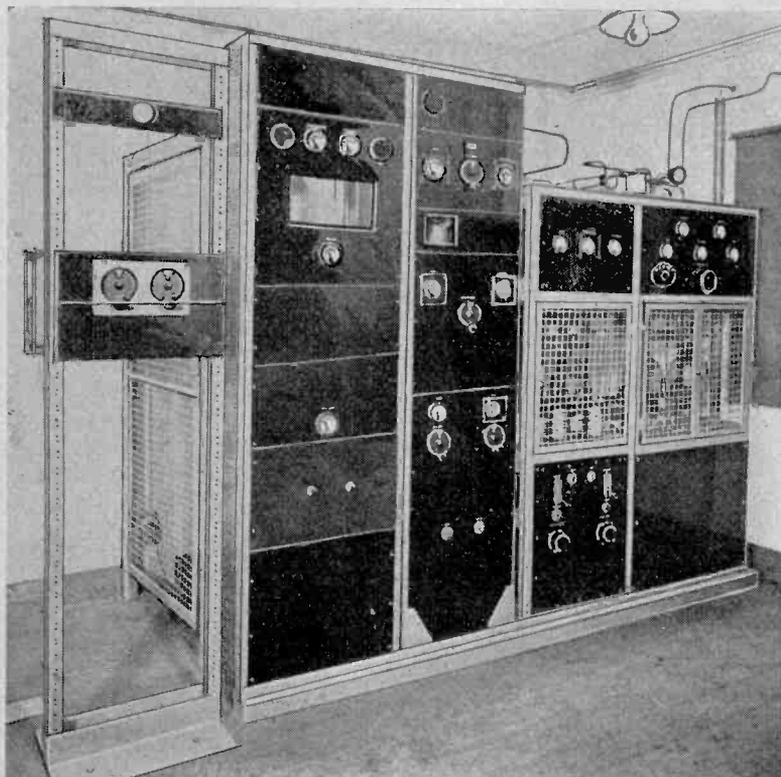
# 3 LR's Short - Wave VOICE from "Down Under"

Even though the Australian programs have to travel half-way around the world in order to be heard by the average American short-wave listener, these programs are being received with good strength by thousands of listeners, as reports show.

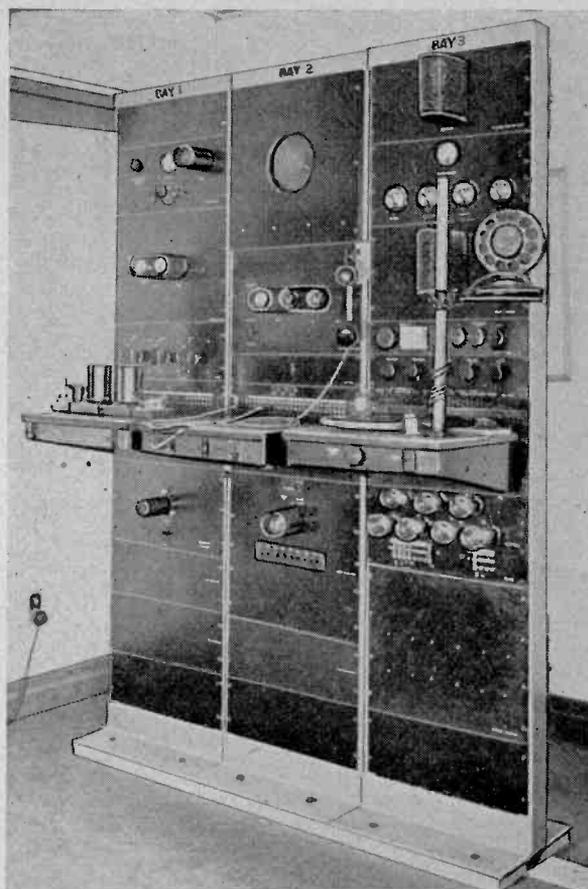
## SHORT WAVE STATION 3LR LYNDBURST, AUSTRALIA

IN the Commonwealth of Australia all telecommunication services are controlled by the Postmaster-General's Department. Radio broadcasting is one of these services and is given to the public in two forms: A government-owned National Service financed by license fees collected from all broadcast listeners; a commercial service supplied by private enterprise from stations licensed to operate by the Postmaster-General's Department. The commercial licensed stations derive their revenue from advertisements.

The National Service is planned on a comprehensive basis as one complete system which will cover the populated areas of the continent. The plant is designed, constructed, owned and operated by the Postmaster-General's Department and the programmes are produced over it by the Australian Broadcasting Commission—also a governmental body. The number of listeners in the Commonwealth is now 660,000.



Here we have an interesting view of the neatly designed, yet highly efficient shortwave transmitter utilized at station 3LR, whose programs are heard regularly by thousands of short wave fans in this country.



The speech input equipment at the Australian short-wave broadcast station, 3LR.

All these stations are interconnected by a system of high-quality program lines having a total length of 6,500 miles. The short wave station 3LR Lyndhurst was opened on March 12, 1934, for the purpose of making the National Programs available to listeners in the remoter areas of the Commonwealth. In these areas the atmospheric noise level is frequently very high and the use of short-wave is the most practical way of extending the service to the listeners there.

The high frequency transmitting plant at Lyndhurst is located on the site of one of the outdoor laboratories of the Research Laboratories of the Postmaster-General's Department and under the International call sign VK3LR it has been used occasionally for some time past on various frequencies for radio broadcast work. Now that the plant is used for regular broadcast work, the National call sign 3LR is used, while for experimental work a further International sign VK3XX has been allotted.

The site of the station—Lyndhurst—is about 25 miles south-east of Melbourne, longitude 145° 15' 40", latitude 38° 3' 10" South. The plant used for broadcasting consists of an electron coupled oscillator suitably amplified by a screen-grid transmitting tube and modulated at low level. Two further stages of radio frequency amplification, the last of which is connected in push-pull permit of an unmodulated carrier of 600 watts being delivered to the radiating systems. The frequency response of the transmitter is essentially flat between 35 and 10,000 cycles, while the modulation characteristic is linear to the full 100%.

Several radiating systems are employed at the station for experimental purposes, the systems being fed by radio frequency transmission lines

(Continued on page 189)

# BRIGHT SPOTS IN U.S.S.R. PROGRAMS

By J. C. KELLEY

● TO the dyed-in-the-wool radio fan the transmitters of the U.S.S.R. present a goal for all to aim for, not only because of the thrill one gets from listening to a land so far away but also because it seems to give us a more personal interest in the welfare of these people, whose government has undergone such drastic changes during this last decade. It brings us closer to these people and helps us to understand the attitude of the people and of the government. When listening to a Russian station—remember that you are only a split-second away from this country that has made, and is still making, history that has affected the actions of more than one country on this little planet of ours. Think of the great step that has been made toward modernization of this once strictly agricultural country, that has, in a few short years, developed to an amazing extent their natural resources, the most important, perhaps being the large amount of electric power made possible by the construction of one of the world's largest dams.



Top photo—Playing a solo number on the cymbalon. Below—the artist Sevsky singing and playing the "Gusle" (zither).

Above—Radio chorus singing before the microphone at Tashkent. Left—Master Volodja Dolgy talking to his father by short waves. His father is the chief of a scientific expedition located, during the winter, at Cape Tchelouskine.

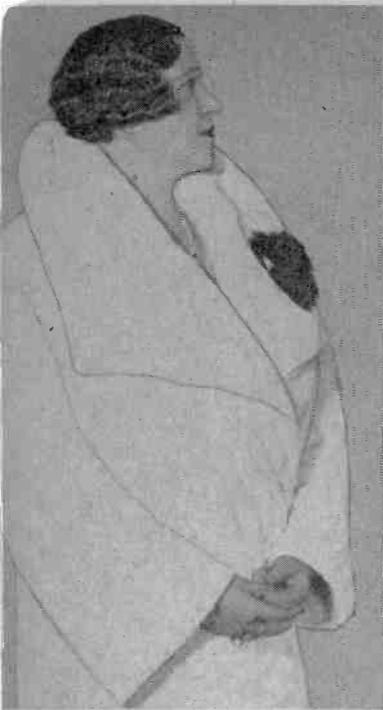


U.S.S.R. Radio Committee. The accompanying photos show that the people in the U.S.S.R. like plenty of music along with their talks on national welfare and "five-year" plans.

Accompanying a recent communication sent the writer by the All Union Radio Committee's Foreign Bureau, there was a list of 72 long-wave broadcast stations, either in operation or under construction, in the land of the Soviets. There are at present three principal short-wave stations, the frequencies and call letters of which will be found in the directory of Short Wave Stations reproduced in another section of this magazine. The Russian short-wave stations are quite powerful and have been heard by many American listeners. The long wave stations run as high as 500 kilowatts in power and some of the stations are now being increased in power. Wavelengths all the way from 1724 meters down to those below 100 meters are in use by the stations operated under the directions of the



A Doutara player in the orchestra of the Radio Committee of Tashkent.



# MUSICAL ARTISTS from AUSTRALIA

● TO some extent, at any rate, the buoyancy of licenses must be attributed to the wisdom of the Australian Broadcasting Commission in fostering the taste for the best class of music, forming so important a feature of its programs. Consistently during its three

years of control of "A" Class stations it has developed a remarkable series of performances and recitals by eminent artists including many with world-wide renown, whose names are International household words in the homes of all music lovers. Especially in seeking talent for the development of the musical side of its programmes has the Commission given every encouragement to Australian artists, and not the least pleasing feature of the many suc-

.....  
 Madame Florence Austral, the world-famous Australian prima donna, whose series of recitals will be broadcast by short-wave station 3LR Lyndhurst, Victoria.



The Australian Broadcasting Commission's (Melbourne) Concert Orchestra, which broadcasts regularly on short-waves through 3LR, Lyndhurst, Victoria.

.....  
 cesses which it can claim to have achieved, is that some of the finest artists heard over the National Network have been Australians.

Early last year Major (then Captain) H. E. Adkins appeared on the broadcasting horizon as a musical Herald ushering in a *Pageant of Harmony*. At that time one of the first touring units organized by the Commission, comprising the eminent Australian artists Madame Madalah Masson and Miss Mona Nugent, was broadcasting from National stations, setting a high standard of artistry which has never since been lowered. The organizing of the National Military Band under Major Adkins aroused

(Continued on page 189)

The recitals of Mr. Percy Grainger, the famous Australian composer-pianist, will be heard on short-wave through the Australian Broadcasting Commission's station, 3LR.

Below—John Amadio, the world's premier flautist, whose series of recitals will be heard through short-wave station 3LR, Lyndhurst, Victoria, Australia.



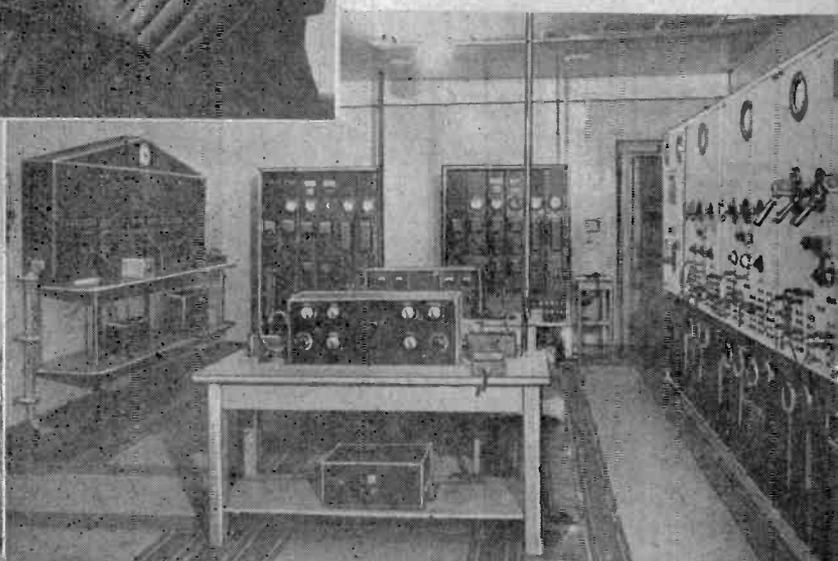
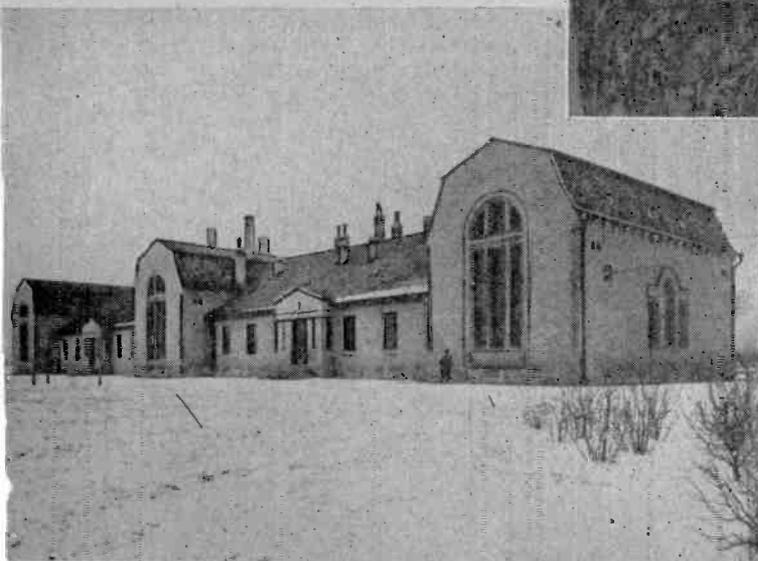
# HUNGARIAN SHORT-WAVE STARS



Above—Miss Mary Lorand, announcer heard over the short-wave stations HAS3 and HAT4, the Hungarian short-wave transmitter picked up regularly by American listeners. While male announcers also talk over these stations, the ladies seem to predominate.



Above—Mrs. Geeso, another star lady announcer heard by American listeners from the short-wave Hungarian stations. Many fine operatic concerts are broadcast by the Hungarian short-wave stations; at left, opera singer Fraulein Sari Sebok.



Above—The transmitting station at Lakihegy. The two short-wave transmitters carry the call letters HAS3 and HAT4, and operate on frequencies of 15370 and 9125 kc. respectively with a power of 20 kw.



Above—The control room of Radio Budapest, showing how all the circuits from the transmitters and the studios are brought to a central switchboard. Left — The Hungarian Gypsy Band.

# Just Another Racket!

By Willis Werner

● "NOISY? I'll say it's noisy. This is the worst location I was ever in. If electrical interference were suddenly to become a tangible, visible quality, we'd find ourselves in a fog thicker 'n anything London can scare up!"

Dick Land grinned across his "experimental" table at Kurt Rexford, his reporter pal, who stood, hands in hip pockets, watching him reach for the soldering iron with one hand and a roll of solder with the other.

"Is that what all that racket is?" returned Kurt, shifting his gaze to a small table by the window on which stood a table-model all-wave job.

"Yeah. It's an eight-tuber, and I'll say one thing for it, she sure brings in noise as well as stations. Gosh, I wish I could afford a good battery job. I'd like to take it back in the mountains about 50 miles. I bet I could get something then."

"That station you've got on now sounds all right. Is that short wave?" asked Kurt.

"Yeah, that's W8XK on 48 meters. That's in Pittsburgh." The solder flux sizzled as a joint set.

"Pittsburgh? Heck, that ought to satisfy you. That's clear across the country and it certainly is loud enough."

"Say, Pittsburgh, is just local. I want to hear Europe, but San Diego is about as far away from everything as you can get. But the worst of it is the noise level, you can't get through."

"What're you building there?" asked the reporter, sinking into a chair, "a noise catcher or something?"

"No, just a little three-tube portable. I was going through the junk-box and I found just about enough of everything..." He was interrupted by a fierce stuccato roar from the loudspeaker, which sent him flying for the volume control.

"Boy! What's happened?"

"It's that damn razor downstairs," explained Land, softening the music-burying roar.

"Razor?"

"The chap downstairs has an electric shaver. It sure kicks out a signal!"

"Can you tell that by its sound?"

"Yeah...Well, I guess he changed his mind," inserted Dick as the crackling ceased. "Turn up the volume again, will you?"

"O.K."

Land bent over the small three-ply backless, topless box on the table before him and pushed a toggle switch through a mounting hole in one side.

"Hear that?" he asked, nodding his head toward the shortwaver.

"You mean the music?"

"No, that click, click, click-click, click, click, in the background."

"Yes, sure enough."

"Well, that's the flasher on the sign at my theatre."

● *Many queer sounds came out of the loudspeaker on Dick Land's Portable short-wave receiver — but you'll never guess how one particular sound led to the apprehension of a long-sought criminal.*

● "Why, that's a block and a half away!"

"Yes, it is the farthest noise I have traced. It's the only one I get from the theatre. I tried to get the boss to put in some condensers to silence it, but he won't put out the dough. He doesn't want people to stay home and listen to the radio, he wants them to come to the show!" Dick laughed.



"You're right, Kurt, it's loudest right here... That's darn funny. That shoe shop has been empty for a week! There shouldn't be anybody or anything in there to make a noise."

"You sure can tune in noises! That might make a good feature some day. 'Short wave fan tunes in electric signs, razors,'" chuckled the reporter.

"Well, I can pick up the sewing machine next door, the elevator in the bank across the street, and the electric beater in the bakery back of me. There is no good ground in this dry adobe and I am two flights up and have to use a gas pipe at that so it makes a better aerial than a ground. Listen. Here that?" A rapid series of "dots" swelled into the speaker and faded away again. "That was a car going by outside. I can tell you every time a car goes by that is radio-equipped because you can't hear it. They put suppressors in the ignition circuit on 'em.

Oh, you can't fool me on what's going on in this neighborhood!"

"And what about that thing you're building? Is that to pick up some new ones?"

"No, as I was saying, I found enough junk to put together a little three-tuber battery set so I am making a 'local' portable. I've got some of these 2-volt tubes left from the days when I used to have more time for this stuff. I'm going to connect 'em up to this five-inch cone. Remember when they had that miniature cone speaker fad about five years ago? I bought one in Los Angeles but never used it."

"The dial on your big set is almost bigger 'n it, at that. What is the idea of so much stuff on that dial anyway?"

"Well, it is a five-band set and has readings for all bands. The set goes clear up to 2,000 meters."

"What do you get way up there?"

"Nothing. At least all I have been able to pick up is a lot of beep-beeps. I can't find a list anywhere of what is on, up there. I guess I will have to write to *Short Wave Listener*."

"What's that?" queried Kurt, lighting a cigarette.

"A mag I ran across on the newsstand the other day. It sure has all the short-wave stations listed."

"It's all Greek to me!" Kurt shook his head. "When will you finish that thing you're working on?"

"Just a couple more connections and I'll be done. The small batteries will go in the bottom and it will be all self-contained. I am going to put the plug-in coils on top so they will pick up stuff without an aerial."

"But I thought you needed a big aerial for short waves, to get all that distance I mean."

"Oh no! All I want is something to pick up the local police and airports. I will take this set with me wherever I go and see what I can get. I want to try driving a nail into a tree for an aerial or driving a pipe into the ocean for a ground and things like that. I can test it out in a minute, I guess," added Dick, screwing on the top to which was fastened the coil mounting.

Suddenly, he cocked his head and listened intently. "What time is it?" he asked.

"Eight-thirty p.m. Why?"

He ignored the question. "Hear anything?"

"No," said the reporter.

"Listen. That grinding noise."

"I hear a lot of 'em," yawned Kurt.

"But there's a new one I never heard before until night before last. It was on last night, too. It comes on at 8:30 every time."

"So what? Should I write a story about it maybe?"

"No," admitted Dick, "I guess it  
(Continued on page 188)

# Scrambled Speech!

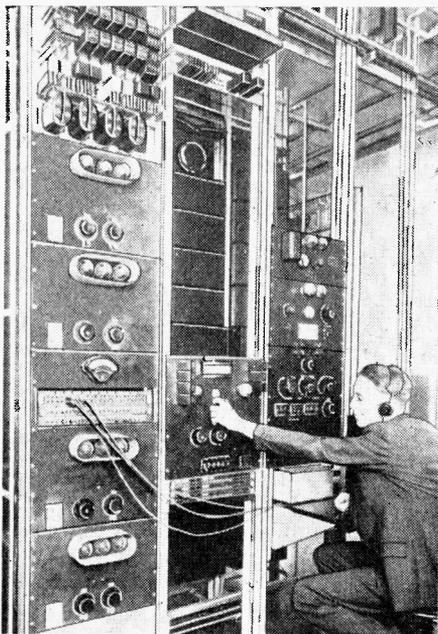
## WHAT IS IT?

"Play-o-fine-crink-o-nope." Have you ever heard any crazy chatter similar to this on your short-wave receiver? Well, if you have, then you have been listening to the so called "scrambled speech". The word in question means "telephone company". A great many short-wave "Fans" have spent a number of hours listening to peculiar garbled sounds emanate from various short-wave telephone stations. First, let us review the history of this whole affair in order that the reader will obtain a clear picture of just what has gone on.

The various telephone companies who originally installed radio stations to carry on communication between telephone subscribers located in the various countries, found that much of the conversation was listened to by short-wave "Fans" and others who were using the information gathered in this manner for their own personal benefits. It became evident immediately that some form of secrecy had to be maintained, and radio engineers set about developing what is now called the "speech inverter" or "scrambler". Systems of this general type are used at many of the major telephone radio stations used for carrying commercial (toll) telephone conversations.

In the diagram we see a gentleman talking into a regular microphone and amplifier. The speech goes from here into the inverter and is then transmitted to the distant receiver. Thence it goes to the inverter at the distant terminal which, of course, transforms the speech back into its normal condition. Now, if we listen in with our standard short-wave receiver which is not equipped with the special *unscrambling* device we hear the peculiar garbled sounds

*While tuning in on certain frequencies you have probably heard something which sounded like a cross between Chinese and Hindu. The chances are you picked up some "scrambled" trans-Atlantic speech waves as here explained.*



Privacy on transoceanic radio telephone calls is made possible by the speech inverters shown here. By their use the speech received on the ordinary radio receiver tuned to the overseas services can be made unintelligible. Photo courtesy A. T. & T. Company.

such as the one previously mentioned.

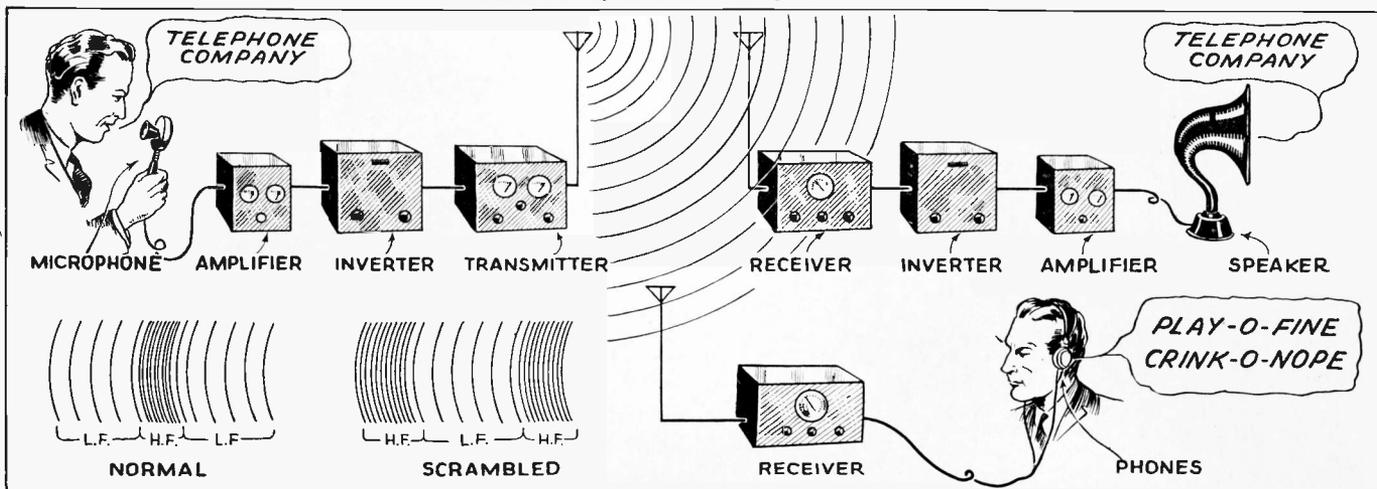
The actual technicalities of the instrument used for scrambling the speech of these telephone stations would not be of great interest to our short-wave "Fans" and therefore will not be taken into consideration here. However, a simple enough explanation of what happens follows.

Suppose we have a word made up of a certain number of low frequency tones and a corresponding number of high frequency tones. When put through the speech inverter, the high frequencies become low frequencies and the low frequencies in turn are registered as high frequencies. Changing the entire word around and making it sound entirely unlike its original character and being totally unintelligible. At the receiving station, as we mentioned before, an inverter is used to change the speech back to its normal sound by converting the low frequencies into high frequencies and vice versa.

In one of the diagrams we have endeavored to illustrate in the form of sound waves approximately what takes place. The top formation shows what might be a word consisting of low frequencies at the beginning, high frequency in the center, and low frequency again at the end. Underneath this we have shown just the opposite; the beginning of the word has been changed to high frequency, the center is low frequency, and the end is high frequency.

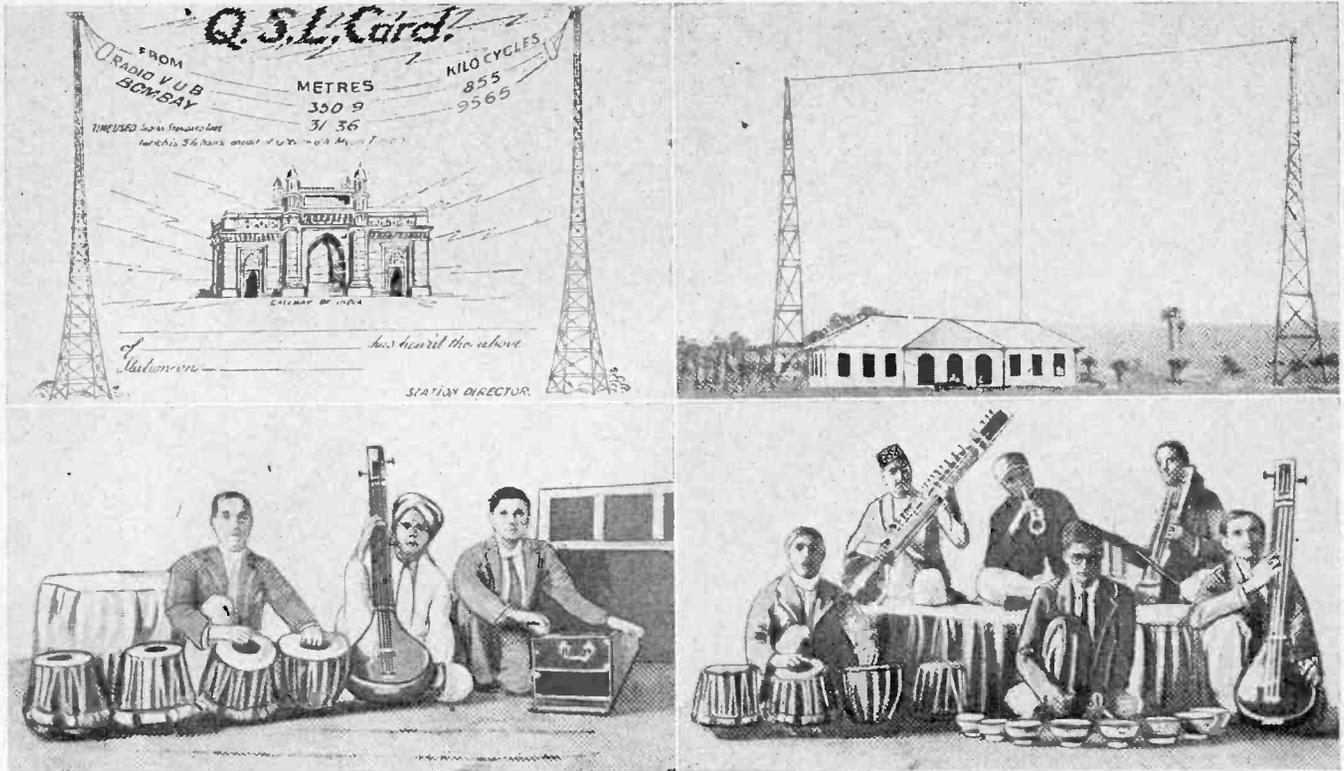
A technical operator who has made a prolonged study of the phonetics of this strange new language has learned to articulate a number of the weird sounds which the scrambler produces. When spoken back into the inverter,

(Continued on page 191)



The illustration above shows the stages through which the voice passes in a radio telephone conversation across the ocean between two subscribers, and how the voice is scrambled by the A. T. & T. Company system, so as to be unintelligible to any radio eavesdroppers.

# Novel Programs from India



The group of pictures above illustrate an India short-wave station and some of the artists performing over this station. The top left picture shows a QSL card sent to those who report reception of this station. The local programs are broadcast on a wavelength of 350.0 meters and the short-wave programs on 31.3 meters. The top right photo shows antenna supporting masts. Below at left—odd musical instruments used and known as Tablas (drums), Tamboura (string instrument), and Harmonium. Lower right—an Indian orchestra.

● WE are glad to present herewith several interesting views of the broadcast station operated in Bombay, India, by the Indian State Broadcasting Service. Their address is Irwin House, Sprott Rd., Ballard Estate, Bombay, India. Irwin House, in which

the Bombay broadcasting station studios are located is a very handsome five story building of attractive architecture and finished in stone.

Many interesting concerts, especially those incorporating some of the odd string music produced by some of the

novel instruments played by the Indian performers, have been heard in all parts of the world, thanks to the *short-wave* transmitter operated by this station. The call letters of this station are VUB. Many American Fans hear VUB regularly.

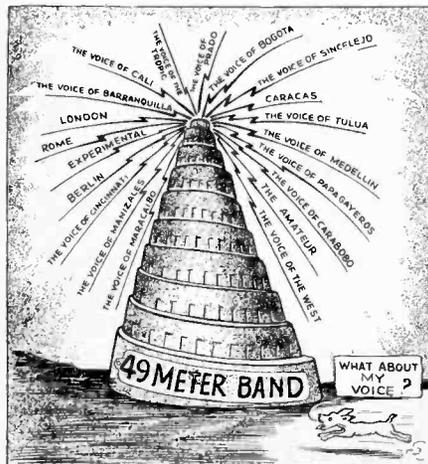
## Don'ts for Short-Wave Listeners

● DON'T expect to find broadcasting stations on all parts of the dials as you do with the long and medium waves. Except in a very few places short-wave stations are widely separated. The crowded bands are 19.5 to 20 metres, 25 to 25.7 m., 31.25 to 31.6 m. and 49 to 50 metres.

Don't expect stations to tune in broadly. As a general rule the more distant the station the sharper the tuning.

Don't try to get stations by skimming over the dials. Slow tuning and great patience are needed to ensure absolute success.

Don't tune haphazardly unless you are just amusing yourself. Be guided by a list of broadcasting stations and get to know where these are on your particular set.



THE NEW TOWER OF BABEL.

Don't expect to get every station on your list the first day you get your set. Knowledge of your receiver and the best way of tuning it may take some time.

Don't be discouraged. Every new short-wave listener is liable to feel disappointed if he does not get as good results as on the long waves. Reception may be poor today and good tomorrow.

Don't waste time tuning in stations over 35 metres during daylight. Except for an hour or two after sunrise and before sunset results will be discouraging. In like manner,

Don't tune in stations below 25 metres after dark.

—The Times of India

# Musical Signatures of Foreign Stations

Call	Location	Identification	Remarks
GSH	Daventry, England	(See GSB). [Stations appear in order of frequency]	
PMC	Bandoeng, Java	(See PLF).	
LSY	Buenos Aires, Argentina	Begins transmissions by sounding E, E, G sharp, and A, on xylophone.	
PLF	Bandoeng, Java	Begins transmissions with three tone auto horn. Notes are F, D, C.	
GSG	Daventry, England	(See GSB).	
DFB	Nauen, Germany	Sounds three tone whistle at beginning of transmissions. Notes are D, C, G.	
DJB	Zeeseen, Germany	(See DJC).	
GSF	Daventry, England	(See GSB).	
GSE	Daventry, England	(See GSB).	
I2RO	Rome, Italy	Woman announcer announces "Radio Roma Napoli."	
DJD	Zeeseen, Germany	(See DJC).	
GSD	Daventry, England	(See GSB).	
PHI	Huizen, Holland	Announces "This is Huizen."	
FYA	Pontoise, France	Plays the "Marseillaise" at beginning and end of transmissions.	
ORK	Brussels, Belgium	Plays Belgium national hymn at close of programs.	
EAQ	Madrid, Spain	Announces "Ay-ah-coo, transradio Madrid."	
CT1AA	Lisbon, Portugal	Sounds the cuckoo calls between selections.	
VK2ME	Sydney, Australia	Laugh of Kookaburra bird at beginning and end of transmissions.	
HBL	Geneva, Switzerland	(See HBP).	
DJA	Zeeseen, Germany	(See DJC).	
GSC	Daventry, England	(See GSB).	
VK3ME	Melbourne, Australia	Opens program with clock chimes.	
GSB	Daventry, England	Big Ben Chimes on quarter hours. Announces "London calling on—(stations and Wavelengths)." Begins and ends transmissions by playing "God save The King." This song has the same tune as our "America."	
IAC	Piza, Italy	Calls "Pronto, pronto—(name of ship)."	
PSK (PRA3)	Rio de Janeiro, Brazil	Plays chimes like the NBC chimes when signing off.	
CNR	Rabat, Morocco	Announces "Radio Rabat dans Maroc." Uses metronome between selections.	
HBP	Geneva, Switzerland	Announces "Hillo, hillo, radio nations."	
TIEP	San Jose, Costa Rica	Announces "La Voz del Tropico."	
HC2RL	Guayaquil, Ecuador	Plays the Ecuadorian National Anthem at beginning and end of transmissions.	
PRADO	Riobomba, Ecuador	Announces "Estacion el Prado, Riobomba, Ecuador."	
HJ1ABB	Barranquilla, Colombia	Announces "Achay-hota-uno-ah-bay-bay."	
HJ5ABD	Call, Colombia	Announces "Achay-hota-thinko-ah-bay-bay."	
H11A	Santo Domingo	Plays "Anchors Aweigh" at start and finish of programs.	
YV3RC	Caracas, Venezuela	Announces "Ee-vay-trays-erra-say." Plays bells on the hour.	
W2XE	Wayne, New Jersey	Announces in English, German, French, Spanish and Italian.	
YV2RC	Caracas, Venezuela	Announces "Ee-vay-dos-erray-say." Sounds four strokes on chimes every fifteen minutes.	
VE9HX	Halifax, Nova Scotia	Sounds four strokes on a gong at beginning of transmissions.	
QXY	Skamleback Denmark	Midnight chimes at 6 P. M. E. S. T.	
VE9CS	Vancouver, B. C.	Sounds two bells between selections.	
GSA	Daventry, England	(See GSB).	
DJC	Zeeseen, Germany	Announces in German, and English. Eight notes of old German song played over and over at beginning of transmissions.	
XEBT	Mexico City, Mexico	Sounds auto horn after each selection.	
RV59	Moscow, U. S. S. R.	"International" is played at beginning and end of transmissions.	
HVJ	Vatican City, Italy	Announces "Pronto, pronto, radio Vaticano." Clock ticking.	
TGX	Guatemala City, S. A.	Two tone high frequency signals.	
YV5RMO	Maracaibo, Venezuela	Strikes gong before announcing.	
HCJB	Quito, Ecuador	Sounds 2-tone chime after announcements.	

—Courtesy N. Y. Sun.

## Abbreviations for the Listener

### "R" Audibility System

Use the "Q, R, & T" systems together to give the clearest reports on signals. Thus: "Ur R7 but QSA3 & T2."

- R1—Faint signals; just readable.
- R2—Weak signals; barely readable.
- R3—Weak signals; but can be copied.
- R4—Fair signals; easily readable.
- R5—Moderately strong signals.
- R6—Good signals.
- R7—Good strong signals, that come thru QRM & QRN.
- R8—Very strong signals; heard several feet from the fones.
- R9—Extremely strong sigs.

### Amateur Abbreviations

The following tables are in constant use by the transmitting amateurs. The "Q" table is strictly a readability system and should not be used to indicate signal strength. The "R" system is for this purpose and should not be governed by the readability of a signal. In other words a signal could be QSA5—very good signals; perfectly readable, but still weak. This would be a QSA5 R3 signal.

The "T" system is used mostly in foreign countries but is a very accurate method of reporting tone quality and should be used more extensively. The other abbreviations are used during direct conversation and it will be noticed that with a few exceptions most of the vowels are eliminated from the words.

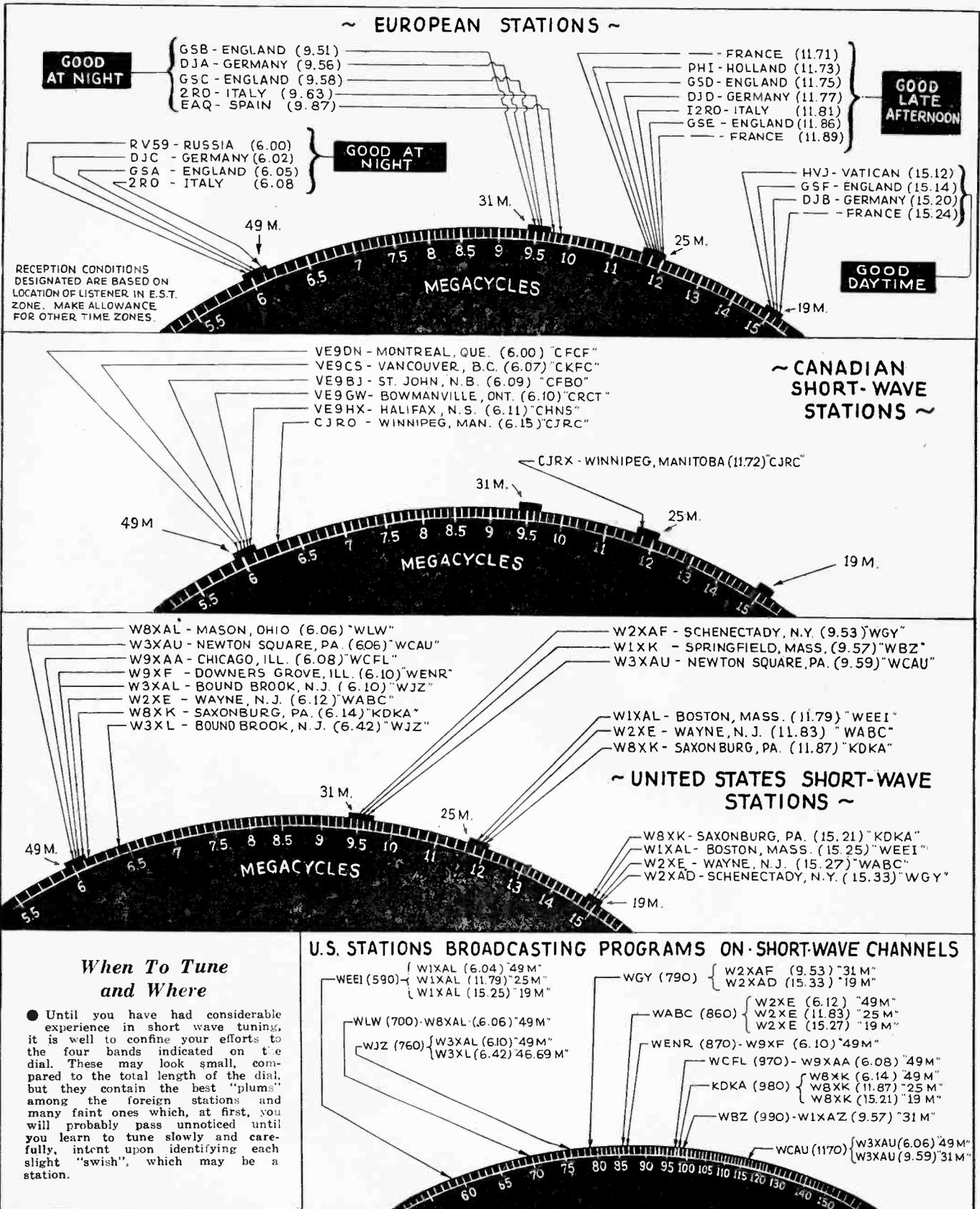
### "Q" Readability System

- QSA1—Hardly perceptible; unreadable.
- QSA2—Weak; readable only now and then.
- QSA3—Fairly good; readable with difficulty.
- QSA4—Good readable signals.
- QSA5—Very good signals; perfectly readable.

### "T" Tone System

- T1—"UP tone 1, R6") Poor 25 or 60 cycle AC tone.
- T2—Rough 60 cycles AC tone.
- T3—Poor RAC tone. Sounds like no filter.
- T4—Fair RAC, small filter.
- T5—Nearly DC tone, good filter, but has key thumps, or back wave, etc.
- T6—Nearly DC tone. Very good filter; keying OK.
- T7—Pure DC tone, but has key thumps, back wave, etc.
- T8—Pure DC, not equal to T9.
- T9—Best steady, pure, crystal controlled DC tone.

# How To Find S-W Stations Quickly



# Local Time Throughout the World

The table below may be used to determine the time, at any other place in the world, corresponding to your own time, provided you know its location.

Pick out your own time zone; it is a good idea to rule a red line on each side of it, across the page, for convenience in consulting it. Take the hour at your own locality, and run your finger directly up or down till you find the

zone in which the station you are looking up is located. If necessary, consult the map. Read the hour, above or below your own, and add the minutes. If, in going up or down, you cross the (MN) (midnight) line, then change the date accordingly—to the day before, if you are going down, or the day after, if you are going up. The hours given as G. M. T., or G. C. T., should be read from the central line, between black cross rules.

M IS NOON; LIGHT FACE FIGURES, A. M.; BLACK FACE FIGURES P. M.

180° -172½° E.   Date Line—Fiji Islands.....	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN	
172½° -157½° E.   New Zealand .....	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	
157½° -142½° E.   Eastern Australia .....	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	
142½° -127½° E.   Japan—W. Australia ..	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	
127½° -112½° E.   Philippines—China .....	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	
112½° - 97½° E.   Siam—Annam .....	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	
97½° - 82½° E.   India—East .....	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	
82½° - 67½° E.   India—West .....	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	
67½° - 52½° E.   Persia .....	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	
52½° - 37½° E.   Arabia .....	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	
37½° - 22½° E.   Russia—Egypt .....	2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2	
22½° - 7½° E.   Germany—Italy .....	1	2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M		2
7½° E. - 7½° W.   England, France - Greenwich	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	M	
7½° - 22½° W.   W. Africa—Iceland .....	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	11	
22½° - 37½° W.   Atlantic Ocean .....	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	10	
37½° - 52½° W.   Greenland—Brazil .....	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	9	
52½° - 67½° W.   E. Can.—Argentina .....	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	8	
67½° - 82½° W.   U.S. Eastern—Peru .....	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	7	
82½° - 97½° W.   U.S. Central—Mex. ....	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	6	
97½° -112½° W.   U.S. Mountain.....	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	5	
112½° -127½° W.   U.S. Pacific.....	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	4	
127½° -142½° W.   Eastern Alaska .....	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	3	
142½° -157½° W.   Central Alaska* .....	2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2	
157½° -172½° W.   Western Alaska .....	1	2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN		2
172½° -180° W.   Date Line—Samoa .....	MN		2	3	4	5	6	7	8	9	10	11	M		2	3	4	5	6	7	8	9	10	11	MN	

EXAMPLE: What time is it in Sydney, Australia, if it is 8:20 p. m. Monday in San Francisco? Put a finger on the blackface 8, opposite "U. S. Pacific" and run straight up the column till opposite "Eastern Australia," you cross an "MN" going up; so the time in Australia is Tomorrow; (the 2 is blackface, so the hour is afternoon. Allowing for the extra minutes, it is 2:20 p. m. Tuesday in Sydney.)

Hawaii is in a special time zone; so are Holland, Java, and other countries; consult Time Zone Map. The hour is the same, in each of the Date Line Half Zones, but the date is a day later, on the west side of the line. The boundaries of time zones are only approximately north and south, as they follow political divisions.

## The "DX" Fever Epidemic

By "WHF"

● IT IS impossible now to set foot in a radio without becoming entangled in short waves, including the Australian.

You pick them from thin air. By day and night. If your receiver is "all-wave," has a converter, or is a straight short wave imbiber. (Never question the possibility of a "straight wave.")

Old-timers claim they recall the perils of wild waves, permanent waves, over-the-waves. Among others. They are *nothing* compared to the present invasion of brief radiations.

What chance (no chance is the answer) has anyone against this sinister new energy stepping with the speed of light, and invisible? They penetrate steel walls, tea-times chat, everywhere, office hours and the odd unexplored wilds. They laugh brazenly at coast guards, customs excise duties, gift cigar smoke screens and The Shadow.

Do these waves travel openly? No! They go incognito, using merely initials, as: EAQ, SA, DJN, PRADO, WPDx, RKI, or (if licensed for trailer) with a numeral, thus: VK2ME, LSN6 and W9XF. Others are far bolder. Ocean Gate calls ships with a bland, seductive WOO.

Short waves are dangerous (habit-forming), infectious and contagious. But the short wave victim (a formerly sane mortal) is rabid, violent and sleepless! This creature eats nothing save radio magazine covers when they happen to appear in apple or (state choice) berry shades!

To this extent, several *shortwaveitis* patients will be a definite advantage to a large family.

This doomed mammal (gradually becoming all ears) exists only because careless governments did not completely exterminate its ancestor the DX (long distance) fanatic:—short for "fan"—who reached his peak or worst about 1922 A.M. (After Marconi).

A few old liars can remember 1922, and what a terror that DX fan was. History tersely records him thus:

"... long-eared biped somewhat resembling man. Reported capable of uttering a few intelligible words. Writes endless reports of reception, mailing same to radio stations. Never combs hair, fearing static discharge noise. Emits plaintive cries, as WHAM, WAAF, WOWO, KOA

and WOAI. Quite harmless if battery kept charged. Hands like pliers."

Another reference lists the DX fan as an electro-musical maniac who worked barely enough to buy watts needed to maintain six vacuum tubes in glowing health. He hovered helplessly near his radio from 8.30 p.m. until 5.30 in the yawning.

Any family owning a marriage license apparently included one DX fan. Some claimed proof of nearing Dallas, Denver B.C. (Before Chains) and Miami. If he were a DX KING cherishing a verification or EKKO stamp from Alaska, England or Brazil, he was a Prominent Figure in what has been called America. Headphones and radio clubs were named after him. Honest.

To sing or shout gladly in passing the DX fan's nest between midnight and dawn was the same as leaning into a buckshot shampoo or massage. The die-hard "dial nighthawk" wanted his noises from far places and (for a better yarn) preferably under Difficult Conditions.

But our modern aerial viking—what kind of "catch" does he consider the logging of England or spanning mere- (Continued on page 166)

READING UP—TIME LATER

READING DOWN

TIME EARLIER

# Win This

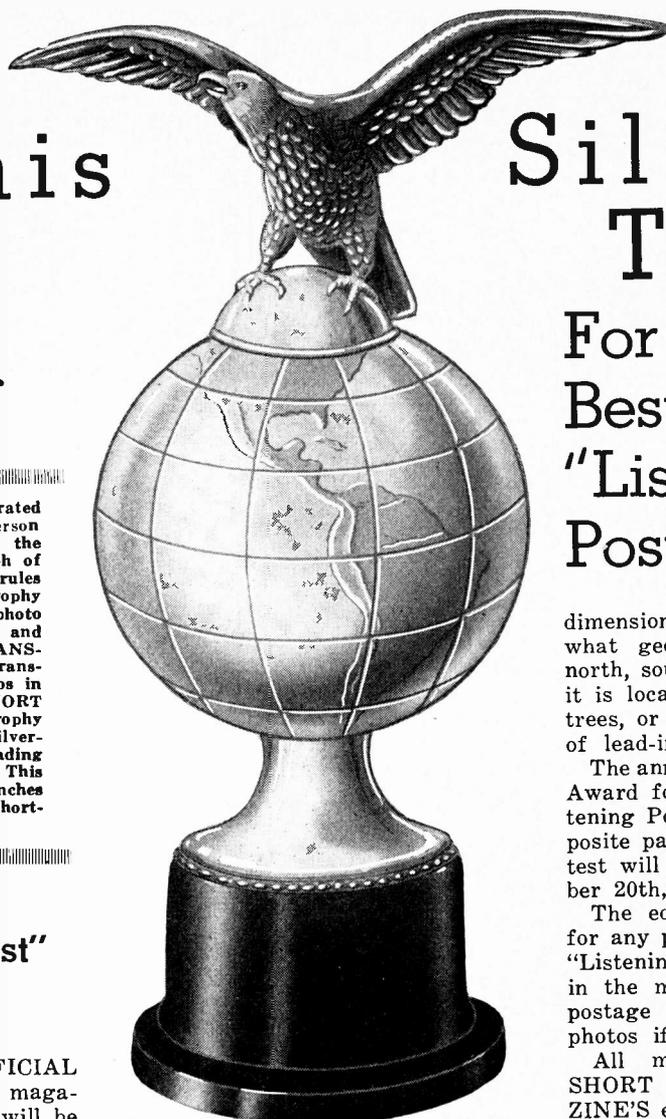
Third

Trophy Award to  
Arthur S. Harris, Jr.

Winchester, Mass.

# Silver Trophy

For the  
Best  
"Listening  
Post Photo"



The handsome Silver Trophy, illustrated here, will be awarded to the person sending in what appears to be to the judges the most interesting photograph of their short-wave listening post. The rules for this contest provide that the Trophy shall be awarded only for the BEST photo of listening post apparatus or set-up, and is not concerned with amateur TRANSMITTING stations. Those owning transmitting stations may enter such photos in the monthly contest sponsored by SHORT WAVE CRAFT magazine. This Trophy is a handsome specimen of the silver-smith's art and was designed by a leading New York Trophy Manufacturer. This beautiful silver trophy stands 16 inches high and is symbolic of the art of short-wave listening.

## Rules For Short Wave "Listening Post" Trophy Contest

● THE editors of the OFFICIAL SHORT WAVE LISTENER magazine feel sure that our readers will be greatly pleased with this announcement of a brand new "Trophy Cup" Contest, in which the handsome silver trophy here illustrated, will be awarded to that Short Wave Listener who submits the best "Listening Post" photo.

Here are some of the points on which the "Listening Post" photos will be judged by the editorial staff: The photo must be clear and preferably not smaller than 5 x 7 inches, although 4 x 5 inches will do if the photo is particularly clear.

If possible try to have the photo show the owner or operator of the "Listening Post" appear in the same picture with the receiving apparatus, although a separate photo of yourself will do, of course.

Not only will the photo be judged for the quality of the photograph itself, but also for the ingenuity shown by the owner of the station in a neat and orderly arrangement of the receiving apparatus.

Do not write descriptions on the

*Here is a brand new contest which will cost you practically nothing to enter and you have a very fine chance of winning this handsome Silver Trophy. The editors will award one of these Silver Trophies for the best "Listening Post" photo submitted by the readers of the OFFICIAL SHORT WAVE LISTENER magazine. Please remember that the photos must be as large as possible and they absolutely must be "clear"!*

back of the photo, but simply place your name and address on the back of it or on the photo mounting.

All descriptions of Short-Wave "Listening Posts" should be typewritten or else written in ink, well spaced so that the editors can read them quickly. Do not send "pencil-written" descriptions and moreover keep the description of the station and the results you have obtained as brief as possible; usually 300 words is plenty. Describe your aerial briefly with its

dimensions, and particularly tell in what geographic direction it points, north, south, etc. Also mention where it is located such as above any roofs, trees, or other objects, and what form of lead-in you employ.

The announcement of the third Trophy Award for the best Short-Wave "Listening Post" photo appears on the opposite page. Entries for the next contest will be accepted up until September 20th, 1935.

The editors will not be responsible for any photographs or descriptions of "Listening Posts" which may be lost in the mail or otherwise, and return postage should be included with the photos if they are to be returned.

All members of the OFFICIAL SHORT WAVE LISTENER MAGAZINE'S editorial and business staff are excluded from this contest, as well as any members of their families.

In the event of a "tie" between two or more contestants, the judges will award a similar trophy to each contestant so tying. Please remember that this contest for the best Short-Wave "Listening Post" photo is purely an amateur or experimenter's proposition, and all commercial short-wave receiving stations are excluded.

The best "Listening Post" photo will also be judged not because of the fact that a handsome array of expensive short-wave receiving apparatus has been assembled for the picture, but the "pedigree" or "DX" reception results will also be carefully scrutinized by the judges. The board of judges for this contest will be the Editors of the Official SHORT WAVE LISTENER magazine.

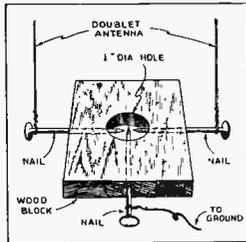
Address all entries to this contest to: LISTENING POST CONTEST, care of OFFICIAL SHORT WAVE LISTENER MAGAZINE, 99-101 Hudson Street, New York.



# \$3.00 for Best S-W Hint

## Lightning Arrestor For Doublet \$3.00 PRIZE

Many of the readers of the SHORT WAVE LISTENER have constructed doublet antennas and it is for them that this hint is presented. Secure a convenient size block of wood, something 2 inches square and 1 inch thick, will serve very nicely. In the center of

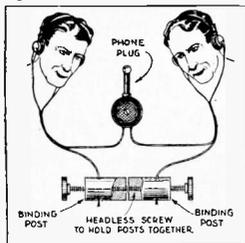


Lightning arrestor made from a block of wood and three nails.

this block drill a 1 inch hole, then drive three nails through each of three sides as shown in the drawing. By leaving a space between the nails of about 1/32 of an inch, a very effective lightning arrestor can be made. By just using two nails, of course, you can construct a regular lightning arrestor for the ordinary single lead-in antennas. — *W. Laub.*

## Connecting Earphones In Series

Recently, when visited by friends, and wanting to entertain them with short-wave programs, I discovered the following kink. Two old metal binding posts

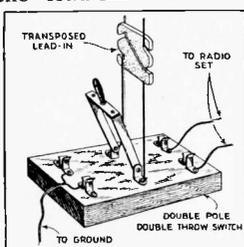


A convenient method of connecting two earphones in series.

were fastened together by a short length of threaded brass, made by removing the head of a machine screw. The drawing clearly shows how this is constructed and it provides a very handy method for connecting two earphones together.

## Grounding Switch For Doublet

An ordinary double-pole double-throw switch of fairly heavy structure can be used as a lightning switch where double lead-ins are concerned. The two blades of the switch are connected to the lead-ins. Two of the stationary



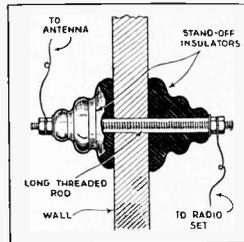
A double-pole, double-throw switch used to ground the two lead-in wires of a doublet antenna.

Each month we are awarding \$3.00 for the best short-wave hint. Those presented on this page will give the reader an idea of the type of material that we are looking for. All hints printed other than the prize winner will be awarded a six months' subscription to this magazine.

contacts are short-circuited and connected to a good ground. The two remaining stationary terminals of the switch are connected to the doublet posts on the receiver. By throwing the switch in one direction the two lead-ins are joined together and grounded, while throwing it in the other direction connects them to the radio receiver. The drawing clearly illustrates this.

## Wall Insulators for Lead-In

Two of the wellknown "beehive" type insulators used as shown in the accom-

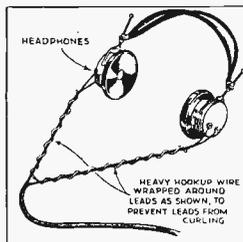


Lead-in insulators constructed with two "beehive" insulators.

panying drawing will serve to make a very efficient lead in insulator. First drill a hole in the wall through which the wire is to be run, large enough to accommodate a long 8-32 machine screw. The mounting holes in the insulators are used to fasten them to the wall and the threaded brass rod run through the insulators and fastened by means of locknuts.

## Nifty Headphone Kink

Probably as much time is spent by the radio "Fan" in untangling radio



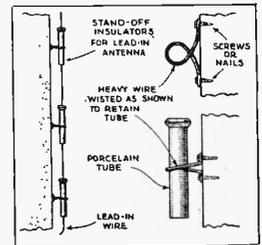
Keeping the earphone cords from twisting by winding heavy wire around them.

cords as he spends listening to the short-wave programs. After being annoyed for a number of years with this particular problem, I hit upon the following idea.

Secure two lengths of fairly stiff hook-up wire and wind it about the phone cords as shown in the diagram. You will be surprised at the effectiveness of this method for keeping the phone cords untangled. The lower portion of the phone cord does not need to be treated; only the two sections going directly to the phones.

## Stand-Off Insulators

Stand-off insulators for the antenna lead in or other wiring can be easily made with the aid of the old type porcelain tube. Bend a heavy wire to form a single loop as shown in the drawing and fasten these to the wall with wood-screws or nails. If the por-

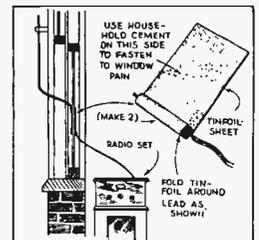


Porcelain tubes used as stand-off insulators for lead-in or ground wires.

celain tubes have a large knob on one end they can be placed in the loop so that this knob prevents them from sliding through the wire to be insulated can then be run through the holes in the tubes in the usual manner.

## Lead-In Condenser

Short-wave experimenters and "Fans" who find it difficult to bring a lead-in through a window can make use of the idea depicted in the drawing. By folding two pieces of tin-foil around small strips of copper in the manner illustrated, a very effective lead-in condenser can be constructed. One of these

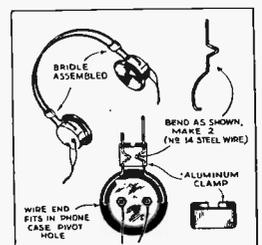


Two pieces of tin-foil bring the lead-in to your set without cutting or drilling a hole in the glass.

electrodes, or pieces of tin foil, is cemented on each side of the window pane. The glass together with the two pieces of tin foil form a condenser and allow the energy to be transferred from the antenna to the radio set

## Home-Made Headband

To make an old style head set fit better and be more comfortable, the following suggestion was offered by Mr. Heinie Tek. A new band was shaped from heavy steel wire as shown in the diagram. This is easily made.



A home-made replacement band for your earphones.

# Can A 1-Tube Set Pick Up Europe?

● MR. JONES and Mr. Smith were having a hot argument recently as to the merits and demerits of 1-tube short-wave receivers versus multi-tube receivers having 6 to 16 tubes or more.

Said Mr. Jones—"I hear all the principal short-wave stations in Europe on my 1-tube set every night—true I hear them on a pair of earphones, but they are clear and the program is really enjoyable."

Said Mr. Smith in answer to this statement—"I fail to see how you can hear European stations on a little 1-tube receiver. It is absolutely incomprehensible to me and if I did not know you as well as I do I would certainly challenge your statement. I have always used a multi-tube set and at the present time I have just spent \$350.00 for a new 12 tube All-Wave receiver. I hear all the European short-wave stations; Paris, Madrid, Rome, Berlin and London, besides many others the same as you do—and all on the loud-speaker!"

\* \* \*

Arguments such as this one between Mr. Jones and Mr. Smith, can be heard almost anywhere every day, and the writer has been asked the question so many times he has lost track of it as to whether Europe can be heard on a 1-tube set—and if so, how come?

The reason why a 1-tube set can pick up Europe 2500 miles away, in round figures, is because of the fact that the



Receiving Europe with a 1-tube set.

vacuum tube detector is an unbelievably sensitive interceptor of radio signals.

Speaking roughly, the average 1-tube set will not detect or pick up a fairly weak signal coming from a European short-wave broadcaster while, if a booster stage is added ahead of the detector, then this booster tube will amplify the sub-normally "weak" signals, and therefore a set having one or more stages of booster (radio frequency amplification) stages will be able to pick up weaker signals than a 1-tube set.

However, do not lose sight of the fact that the incoming signal (even though it has journeyed several thousand miles, and providing it has a certain strength) will be able to influence the grid of the tube and cause a change in the output current of the detector of an ordinary 1-tube set, with the consequence that the station program will be heard in the headphones.

Remarkable as it may seem to the uninitiated, 1-tube sets have picked up programs from half-way around the world. Of course, if you want to make sure of picking up the weaker signals, (unless they happen to be so weak that the noise-level is high enough to cause the voice to be unintelligible), then you will do well to add a booster (radio frequency) amplifier stage ahead of the detector.

Now we come to the second type of listener who may desire to graduate from the *headphone* stage to the *loud-speaker* class. Ordinarily he will add a couple of voice amplifier stages (known technically as *audio* stages) to the detector and the average signal will then be amplified sufficiently to operate a loudspeaker.

Thousands of 3-tube sets "get" Europe on the *loudspeaker*, also some special 2-tube sets, using the new dual purpose, multi-element tubes. Those interested in sets of this type will find many interesting designs in *Short Wave Craft* magazine.

## Important Facts About S-W Antennas

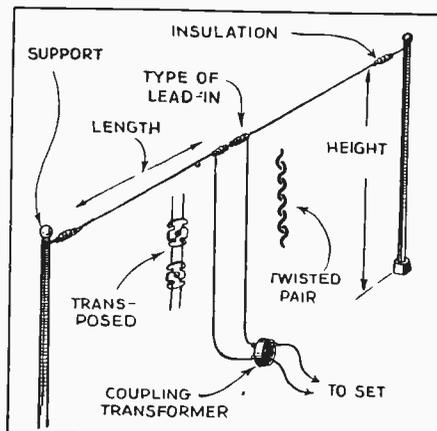
● UNQUESTIONABLY the most important part of any receiving station is the antenna. Much has been said regarding the construction of an antenna, but correspondence from our readers shows that it still is an interesting subject and that we should continue to discuss it.

In the drawing we have the well-known doublet type antenna. The important points in constructing this type of antenna are clearly labeled. For any particular frequency (wavelength) there is an optimum (best) length of each half of the doublet and an optimum height above ground. However, the latter is not so important as the length of the antenna, that is for general short-wave reception.

Next in importance are the type of lead-ins used, the material used for insulation, and the kind of supports used to hold the antenna up. The lead-ins of the doublet can be either transposed, spaced parallel wires, or in the form of a twisted pair. For each type there is a most effective type of coupling transformer.

When purchasing the coupling transformer, be sure to specify the type of lead-ins you intend to use. The insulators should be of the highest grade

*The doublet is really one of the most effective antennas that can be used for short-wave reception. Many hints are given in this article regarding the construction of an efficient doublet.*



The most critical points of the doublet are here shown.

obtainable and the tie-wires, that is the supporting portion between the antenna insulator and the mast, or other support such as a building or tree, should be preferably a non-conductor, (heavy rope). If this wire is longer than 4 or 5 feet it should be broken up occasionally with insulators.

Wherever possible avoid fastening the antenna to metal masts and in all cases, keep the antenna proper as far away from surrounding objects as possible, especially metal objects. The length of each section of the doublet is probably most important of all. For a given frequency or wavelength, each section of the antenna should have a certain length.

For instance, for the 49 meter band each section of the flat top should be approximately 38 feet long. For the 31 meter band each section should be 24 feet long and for the 25 meter band it should be 18 feet long, and for the 19 meter band it should be 15 feet long.

In all cases, the antenna should be located as high above the ground as possible. The doublet received best those stations which are facing its broadside; in other words, to receive stations east and west, the antenna should be run north and south.





"Peach of a Magazine"  
 Editor, SHORT WAVE LISTENER:

Many thanks for putting out a "peach" of a magazine. It surely has gotten off to a fine start. I hope it keeps up right along. I think it's so good that it should come out at least once a month.

I have been entertained and thrilled by short waves for about three months now. In all, during this time, I've logged about 130 stations, practically all *broadcasters*. I do all my listening on the loudspeaker; nix on the ear-phones. They're all right if you want to listen in at 3 A.M. But I don't. At

entertainment. Something too should be done to make amateurs take care in letting their harmonics run all over the short waves.

The magazine is worth many times what is charged for it. The features that I like best are the pictures and stories of the stations, especially the photos. We like to see what the place looks like that we listen to. How about more of this?

The fiction stories are great stuff; more and bigger stories would be to my liking. Those articles on special applications of short wave are welcome. The maps are okay. What

was entirely satisfactory to all parties concerned.

I also want to say that I have been hearing a Spanish-speaking station on about 26 meters for quite a while, and haven't been able to identify it. I haven't seen it listed as yet either. It is on every evening from 6:30 P.M. to 7:00 P.M., E.S.T., and uses a bugle call as an interval signal. I wonder if it couldn't be the CT3AQ Funchal, Madeira, that Mr. Shuler Doron wrote of in the May issue. Has anyone else heard this station and identified it? If you have, won't you write?

Well, here's hoping you much suc-

# The Listener Speaks

that time I'm peacefully unaware of what's happening in Japan or Java. I'm using a small 5-tuber, and the aerial is only the window-sill cage type. I don't use a ground. I get better results with it. The reason why I use the window-sill aerial is because it isn't feasible for me to put up a doublet here. I have a wire connected to a cold water pipe, and when I want more volume on 31 or 25 meters, I connect it to the aerial lead. The increase in volume is 100%.

The one thing that makes me sore is to be listening to a fine program and then all of a sudden have a car roar by. It makes me gnash my teeth and feel like taking a cannon and blasting the car to kingdom come.

I believe that I have converted quite a few people to short waves. They didn't believe in overseas reception until they heard RNE, or D, G, or F stations come in loud enough to be heard out on the street.

Something though should be done about the short wave situation as it is now. There are so many of the smaller stations broadcasting, especially on 49 meters, that they "make a mess of things." They spoil reception from other stations and usually don't broadcast especially good entertainment. The International Radio Commission could remedy this very easily. So many strong stations could be allocated to each country and no more. They could broadcast the best entertainment available, and could be spaced far enough apart so that one station wouldn't heterodyne another.

Code transmitters too could be put in one group and not allowed to spoil reception from the broadcaster by having it come in pounding away for all it's worth, and completely ruining the

● In this department we will print in each issue letters from short-wave listeners of value to all readers. We are particularly interested in those that have constructive criticisms and information that may be of value and help to other short-wave listeners. Only those letters which are deemed of sufficient importance will be printed here. It makes no difference whether your letter is laudatory or whether it contains a "brickbat," it will be published just the same, as long as the information is deemed worthy.

Address all communications to THE LISTENER SPEAKS, care of THE SHORT-WAVE LISTENER, 99-101 Hudson Street, New York City.

about pictures of police, television, airport, and commercial stations?

The S-W hints are right handy; more of them. Also of "The Listener Asks". The cover designs are excellent.

And how about giving each month a little bit of the history of short-wave development and application in language understandable to the listener, and illustrated?

What about trying to print the program schedule for the most important stations for the period immediately following the issue of the magazine? How about making it the size of SHORT WAVE CRAFT? And a column on the pattern of "When to Listen In" in SHORT WAVE CRAFT? A column of unusual short-wave facts, events, and happenings?

I here want to thank Pierre A. Portmann for his fine photo in the May issue. I always wanted to mount my "veris" in a prominent place. But I found that if I tacked them up on the wall, the said wall would look like a scene if the cards were later taken down. I noted that Mr. Portmann mounted his cards on one large piece of cardboard by means of mounting corners. I did the same and the result

cess with SHORT WAVE LISTENER, and also hoping it comes out monthly very soon and this gets into print.

ERNEST J. ARISHEK,  
 118 White St.,  
 Westfield, Mass.

## Just What The Listener Has Waited For

Editor, SHORT WAVE LISTENER:

I am only an insignificant short wave listener but I wish to say that your magazine is just what the listener has been waiting for.

Unfortunately I live in the down town district and the noise level is very high which of course is a hinderance to successful listening. As you desire information on new stations I wish to say that a new one in Bogota, Columbia, has been sending out experimental programs during the last few days from 5:30 to 7:15 PM. CST. The address is HJB Radio Dept. Minister of War, Bogota, Colombia. S. A. The frequency is a little lower than EAQ.

I would like to correspond with other listeners and I think your magazine should have a space for a list of those who would care to correspond with others. Also a tip to verification card collectors is to listen more frequently to the 20 meter amateur bands as very nice cards are sent by most of them. (Foreigns of course.) I have a few of them and I prize them much more highly than cards from commercials.

I will send you a picture of my listening post soon and in the meantime I wish your magazine infinite success.

My receiver is a home-built seven tube superhet.

OSCAR JAEGER, JR.,  
 117 Easton St.,  
 Alton, Ill.

# OUR

## Helps Find Stations Quickly

Editor, SHORT WAVE LISTENER:

Enclosed please find stamps for which kindly send me a copy of March, OFFICIAL SHORT WAVE LISTENER. I just discovered this magazine through a friend of mine and was very much taken with page 13, "Where To Find S-W Station on Your Dial", and hope you will see your way clear to show more stations in the same way in some of your future publications, as I am going to subscribe to this magazine.

WILLIAM L. SEEBOHM,  
R. D. No. 3,  
Irwin, Penn.

## S.W.L.—A New Deal for the "Listener"

Editor, SHORT WAVE LISTENER:

We short-wave fans get a "New Deal" as the SHORT WAVE LISTENER begins publication. It's just what we've been looking forward to for such a long time.

You ask for helpful suggestions and I think it would be a good idea if you would start a column similar to the "Short Wave Scout News" in "Short Wave Craft" Magazine. You could put it in a non-technical way so everyone could easily understand it. Such tips ought to be helpful to the listener.

My new 2 tube battery Doerle sure brings in the stations with a bang. Here's most of the best catches up to now:

VK2ME, VK3ME, VK3LR, JVN, JVT, LSX, PRF5, RKI, RNE, DJA-C-D-E-N, GSA-B-C-D-E-F-G-L, FYA-19, 25.2, 25.6, EAQ, GDS, HC2RL, HKB, HKE, HJ1ABB, HJABD, HJ4ABA, HJ2ABC, HIX, HI7G, HBL-P, HP5B, HPF, KKQ-Z, WKO-V, COC, COH, CJA, CJRO-X, CO2HY, 2RO-49m., 31m., PHI-25m., 16m., PCJ, YV3RC, YV4RC, YV5RMO, TIEP, ORK, W6LR, W6AM, XIG, XEBT, CT1AA, OAX4D, PRADO.

J. GORDON BACH,  
206 Kelso Rd.,  
Columbus, Ohio.

## Other Magazines Too Technical?

Editor, SHORT WAVE LISTENER:

I traded my old radio in last March and bought an all-wave receiver. I didn't know anything about S-W so went down to the drug store to see what they had in radio magazines. I bought several. One of them was the March issue of OFFICIAL SHORT WAVE LISTENER. The other magazines were too technical for me to understand and seemed to be more for persons having S-W stations.

The only trouble with your magazine is that you should publish it monthly

instead of every other month. I pestered the druggist for weeks waiting for the second issue which I now have. I enjoy seeing pictures of the stations in foreign countries which I have listened to, and also photos of the singers. I also enjoy the fiction story in each issue. I think that your page on how to identify foreign stations by signatures is a big help too; I never heard of veri cards before reading the article in the March issue. Also the article on "Tuning in S-W Stations" was just what I was looking for.

The "Dial" and "When To Tune" was a big help. After reading the article on High Fidelity, I tuned in W2XR and also W9XBY, St. Louis, on about 1540 kilocycles. I think an article on *aerials* and *grounds* is always of value to listeners and also The Grand Short-Wave Station List. Also the "Listener Asks" page should help many with their troubles. I like the new page S-W Hint in your May issue as it gives the listener valuable hints. I think the "Listener Speaks" page should help to improve your magazine—if that is possible. The S-W Time Graph is handy as you only have to look at the clock and then at the Graph to see what stations are on the air.

# READERS

I have a 7-tube "Airline" All-Wave receiver and have obtained good results by using a single wire for the aerial and a shielded lead-in. I have heard COC, COH, CMA, HJ2ABA, YV4RC, PRF5, PRADO, TIEP, YV3RC, HJ4ABE, YV5RMO, HC2RL, DJD, DJC, GSC, GSE, GSB, EAQ, and KIO, besides North American stations. I heard a station sending musical selections the other afternoon on about 14 megs. announce W5DCO, El Paso, Texas, but couldn't find it on your station list.

KENNETH McGOVERN,  
434 Sheldon, S.E.,  
Grand Rapids, Mich.

## Oh! Those "Code Hogs"

Editor, SHORT WAVE LISTENER:

I can see easily that much of the money now invested in short wave magazines and in departments devoted to short wave broadcasting and reception is to be lost. The short wave development is doomed! Interest in it will die out as quickly as it sprang into life. This is absolutely certain; I know from my own experience and that of many others with whom I am in contact. I believe that some years hence interest in short-wave developments will revive, but for some time—possibly a year—short-waves will be a "dead duck"!

The short wave development is to be killed off by the *code hog*. The buyer of a short-wave set is not told that whether or not he receives any selected foreign station depends *entirely* upon the will of the *code hog*. But this is the fact.

For the first few months I was as enthusiastic over short-wave reception as any one. Now I only tune in for a moment or two on any selected station to see if it is free of the *code hog*. *IT NEVER IS!*

What is the use to try to tune in FYA, or Valencia, or Rio Janeiro, GSC, DJC, EAQ, Rome or any other? Whenever you tune in—night or day—the wave channel of the selected station is occupied by a code hog! Why is no mention ever made of this fact?

As I understand it there is no authority that can clear the broadcast channels and force these *code hogs* off into free channels. This means the end of the short wave development! What is the use of tuning in FYA and have the code hog signals so interfere as to make noise out of what might otherwise be the finest music?

Another difficulty is that there is no international authority to co-ordinate the many foreign broadcast stations so that they do not interfere as to wave length and time of broadcast. As I understand it, this is an incurable condition.

So, just as the short wave development reaches its peak the code hog and lack of the international control brings the entire development to an end—so far as the listener is concerned. And the rotten feature is that the finer the receiver, the worse the condition. And there is no way under the sun that one can tune out one of two stations on exactly the same wave-length. I only know if I had any money invested in short-wave interests in any form, I would now be doing my utmost to get it back—and I am making this fact clear to all my friends. Let the *code hog* have the entire short-wave band and be done with it. There is no music in a mixture of code and music.

Yours in disgust,

J. MARTIN DUPONT,  
2259 Houghton Ave.,  
New York City.

# IDEAS

(We are inclined to disagree with you, Mr. Dupont, when you say it is impossible to listen to short-wave stations without any success, due to interference caused by what you term "code hogs." We have spent a good many years listening on the various short-wave bands and have never experienc-

(Continued on page 190)

## Call Signal Prefixes --- By Countries

Afghanistan ..... YAA-YAZ	Estonia ..... ESA-ESZ	New Hebrides ..... YJA-YJZ
Albania ..... ZAA-ZAZ	Ethiopia ..... ETA-ETZ	New Zealand ..... ZKA-ZMZ
Argentina ..... LOA-LWZ	Finland ..... OFA-OHZ	Nicaragua ..... YNA-YNZ
Australia ..... VHA-VMZ	France & Colonies & Protectorates F, TKA-TZZ	Norway ..... LAA-LNZ
Austria ..... OEA-OEZ	Germany ..... D	Panama ..... HPA-HPZ
Belgium and Colonies ..... ONA-OTZ	Great Britain ..... G, M	Paraguay ..... ZPA-ZPZ
Bolivia ..... CPA-CPZ	Greece ..... SVA-SZZ	Persia ..... EPA-EQZ
Brazil ..... PPA-PYZ	Guatemala ..... TGA-TGZ	Peru ..... OAA-OCZ
British Colonies and Protectorates VPA-VSZ, ZBA-ZJG	Haiti ..... HHA-HHZ	Poland ..... SOA-SRZ
British India ..... VTA-VWZ, XYA-XZZ	Hedjaz ..... HZA-HZZ	Portugal ..... CSA-CUZ
Bulgaria ..... LZA-LZZ	Honduras ..... HRA-HRZ	Portuguese Colonies ..... CQA-CRZ
Canada ..... CFA-CKZ, CYA-CZZ, VXA-VYZ, VAA-VGZ	Hungary ..... HAA-HAZ	Rumania ..... YOA-YRZ
Chile ..... CAA-CEZ	Iceland ..... TFA-TFZ	Salvador ..... YSA-YSZ
China ..... XGA-XUZ	Iraq ..... YIA-YIZ	Siam ..... HSA-HSZ
Colombia ..... HJA-HKZ	Irish Free State ..... EIA-EIZ	Spain ..... EAA-EHZ
Costa Rica ..... TIA-TIZ	Italy & Colonies ..... I	Surinam ..... PZA-PZZ
Cuba ..... CLA-CMZ, COA-COZ	Japan ..... J	Sweden ..... SAA-SMZ
Curacao ..... PJA-PJZ	Jugoslavia ..... YTA-YUZ	Switzerland ..... HBA-HBZ
Czechoslovakia ..... OKA-OKZ	Latvia ..... YLA-YLZ	Turkey ..... TAA-TCZ
Danzig ..... YMA-YMZ	Liberia ..... ELA-ELZ	Union of South Africa ..... ZSA-ZUZ
Denmark ..... OUA-OZZ	Lithuania ..... LYA-LYZ	Union of Socialist Soviet Republics (USSR) U, R
Dominican Republic ..... HIA-HIZ	Luxembourg ..... LXA-LXZ	U. S. A. .... K, N, W
Dutch East Indies ..... PKA-POZ, YBA-YHZ	Mexico ..... XAA-XFZ	Uruguay ..... CVA-CXZ
Ecuador ..... HCA-HCZ	Morocco ..... CNA-CNZ	Vatican City ..... HVA-HVZ
Egypt ..... STA-SUZ	Netherlands (Holland) ..... PAA-PIZ	Venezuela ..... YVA-YWZ
	Newfoundland ..... VOA-VOZ	

## Prefixes By Calls

CAA-CEZ ..... Chile	K ..... United States of America	TKA-TZZ France and Colonies and Protectorates
CFA-CKZ ..... Canada	LAA-LNZ ..... Norway	U ..... Union of Socialist Soviet Republics (USSR)
CLA-CMZ ..... Cuba	LOA-LWZ ..... Argentina	VAA-VGZ ..... Australia
CNA-CNZ ..... Morocco	LXA-LXZ ..... Luxembourg	VHA-VMZ ..... Australian Commonwealth
COA-COZ ..... Cuba	LYA-LYZ ..... Lithuania	VOA-VOZ ..... Newfoundland
CPA-CPZ ..... Bolivia	LZA-LZZ ..... Bulgaria	VPA-VSZ ..... British Colonies and Protectorates
COA-CRZ ..... Portuguese Colonies	M ..... Great Britain	VTA-VWZ ..... British India
CSA-CUZ ..... Portugal	N ..... United States of America	VXA-VYZ ..... Canada
CVA-CXZ ..... Uruguay	OAA-OCZ ..... Peru	W ..... United States of America
CYA-CZZ ..... Canada	OEA-OEZ ..... Austria	XAA-XFZ ..... Mexico
D ..... Germany	OFA-OHZ ..... Finland	XGA-XUZ ..... China
EAA-EHZ ..... Spain	OKA-OKZ ..... Czechoslovakia	XYA-XZZ ..... British India
EIA-EIZ ..... Irish Free State	ONA-OTZ ..... Belgium and Colonies	YAA-YAZ ..... Afghanistan
EIA-ELZ ..... Liberia	OUA-OZZ ..... Denmark	YBA-YHZ ..... Dutch East Indies
EPA-EQZ ..... Persia	PAA-PIZ ..... Netherlands	YIA-YIZ ..... Iraq
ESA-ESZ ..... Estonia	PJA-PJZ ..... Curacao	YJA-YJZ ..... New Hebrides
ETA-ETZ ..... Ethiopia	PKA-POZ ..... Dutch East Indies	YLA-YLZ ..... Latvia
F ..... France and Colonies and Protectorates	PPA-PYZ ..... Brazil	YMA-YMZ ..... Danzig
G ..... Great Britain	PZA-PZZ ..... Surinam	YNA-YNZ ..... Nicaragua
HAA-HAZ ..... Hungary	R ..... Union of Socialist Soviet Republics (USSR)	YOA-YRZ ..... Rumania
HBA-HBZ ..... Swiss Confederation	SAA-SMZ ..... Sweden	YSA-YSZ ..... Salvador
HCA-HCZ ..... Ecuador	SOA-SRZ ..... Poland	YTA-YUZ ..... Yugoslavia
HHA-HHZ ..... Haiti	STA-SUZ ..... Egypt	YVA-YWZ ..... Venezuela
HIA-HIZ ..... Dominican Republic	SVA-SZZ ..... Greece	ZAA-ZAZ ..... Albania
HJA-HKZ ..... Colombia	TAA-TCZ ..... Turkey	ZBA-ZJZ ..... British Colonies and Protectorates
HPA-HPZ ..... Panama	TFE-TFZ ..... Iceland	ZKA-ZMZ ..... New Zealand
HRA-HRZ ..... Honduras	TGA-TGZ ..... Guatemala	ZPA-ZPZ ..... Paraguay
HSA-HSZ ..... Siam	TIA-TIZ ..... Costa Rica	ZSA-ZUZ ..... Union of South Africa
HVA-HVZ ..... Vatican City State		
HZA-HZZ ..... Hedjaz		
I ..... Italy and Colonies		
J ..... Japan		

ly one ocean? It is nothing. A hollow, oval zero! Short-wavers who cannot now drag in Australia by daylight on a home-grown, two-lunger wire puzzle, are—to blurt badly—mentioned and censored in one breath. To win first degree standing in the Kilocycle Klan, you must dial the VK station as above, then hold for two hours, make a “recording” of the program, ship same to Sydney and have the message verified by cousin 2ME!

Becoming a “short-wave trapper” is simple. You merely sprain a neck or ankle, settle yourself at home for a month, borrow a radio parts catalog and let science have its way with you! Science asks only a workbench, a 22-hour day, two old screw-drivers, shock-proof ears, 1 heaping bedroomful magnet wire and \$8.91 for parts (ear-

### The “DX” Fever Epidemic

(Continued from page 157)

phones, battery tubes, insurance, solder and patience extra).

Interviewed recently, a man who had pushed open the wrong door claims to have had a brief, terrifying glimpse of a short-wave prisoner's den. It was (he relates) such a complete mass of wires that for one appalling second he failed to grasp the idea of *wireless*! He narrowly escaped entering that sparking, crackling whirlpool! The patient struggled feebly in a flood of bright gadgets, of which the gasping visitor (in backing out) recognized

only chokes, dials, grommets, binding posts, meters, switches, audio transformers, sockets and bandaged fingers.

In a few years hence we will be hardening ourselves to hearing babies christened Bandsread-Bandsread, Single-Signal, QSL, Superheterodyne, Dual Wave, Select-o-band, Megacycle and probably “Shadow Tuning”! It would be painful to forecast the nicknames . . .

It is a waste of vocal vibration to open your Thursday newspaper and drawl, “I see this Pufsky in Siberia says—” to your short-wave friend with the degree SWL (L as in Listener) because the SWL has heard Pufsky (directly) at noon Tuesday. The SWL knows all languages. Or he may have gone whole hog in his hobby, and Learned Code!





Station	Dial	Station	Dial	Station	Dial	Station	Dial
11991 kc. FZS2 -C- 25.02 meters SAIGON, INDO-CHINA Phones Paris, morning		10675 kc. WNB -C- 28.1 meters LAWRENCEVILLE, N. J. Calls Bermuda, daytime		9800 kc. LSE -C- 30.61 meters MONTE GRANDE, ARGENTINA Tests irregularly		9540 kc. *DJN -B- 31.45 meters BROADCASTING HOUSE BERLIN, GERMANY 3:45-7:15 a.m. 5:05-10:30 p.m.	
11950 kc. KKQ -X- 25.10 meters BOLINAS, CALIF. Tests, irregularly, evenings		10660 kc. *JVN -C- 28.14 meters NAZAKI, JAPAN		9790 kc. GCW -C- 30.64 meters RUGBY, ENGLAND Calls N.Y.C., evening		9530 kc. *W2XAF -B- 31.48 meters GENERAL ELECTRIC CO. SCHENECTADY, N. Y. Relays WGY 5:25-11 p.m.	
11940 kc. FTA -C- 25.13 meters STE. ASSISE, FRANCE Phones CNR morning Hurlingham, Arge., nights		10550 kc. WOK -C- 28.44 meters LAWRENCEVILLE, N. J. Arge., Braz., Peru, nights		9760 kc. VLJ-VLZ2 -C- 30.74 meters AMALGAMATED WIRELESS OF AUSTRALIA SYDNEY, AUSTRALIA Phones Java and N. Zealand early a.m.		9518 kc. *VK3ME -B- 31.54 meters AMALGAMATED WIRELESS, Ltd. G. P. O. Box 1272L, MELBOURNE, AUSTRALIA Wed., Thurs., Fri., Sat. 5:00-7:00 a.m.	
11890 kc. -B- 25.23 meters "RADIO COLONIAL" PARIS, FRANCE 11 a.m. - 5 p.m.		10520 kc. VLK -C- 28.51 meters SYDNEY, AUSTRALIA Calls Rugby, early a.m.		9750 kc. WOF -C- 30.77 meters LAWRENCEVILLE, N. J. Phones England, evening		9510 kc. *GSB -B- 31.55 meters BRITISH BROAD. ORCP. DAVENTRY, ENGLAND	
11870 kc. *W8XK -B- 25.26 meters WESTINGHOUSE ELECTRIC & MFG. CO. PITTSBURGH, PA. 5-9 p.m. Fri. 11:12 m. Relays KDKA		10430 kc. YBG -C- 28.76 meters MEDAN, SUMATRA 5:30-6:30 a.m., 7:30-8:30 p.m.		7910 kc. GCA -C- 30.89 meters RUGBY, ENGLAND Calls Arge. & Brazil, evenings		9500 kc. *PRF5 -B- 31.58 meters RIO DE JANEIRO, BRAZIL Daily except Sun. 5:30-6:15 p.m.	
11860 kc. GSE -B- 25.29 meters DAVENTRY, ENGLAND B.B.C., BROADCASTING HOUSE, LONDON, ENGLAND		10420 kc. XGW -C- 28.79 meters SHANGHAI, CHINA Calls Manila and England, 6-9 a.m. and California late evening		9635 kc. *2RO -B- 31.13 meters E.I.A.R., ROME, ITALY Mon., Wed., Fri. 7:45- 9:15 p.m.		9428 kc. *COH -B- 31.8 meters 2 B ST., VEDADO, HAVANA, CUBA 10 a.m.-12 n., 4-6:30, 8-10 p.m. also 11 a.m.-12 n. Thurs.	
11830 kc. *W2XE -B- 25.36 meters ATLANTIC BROADCASTING CORP. 485 MADISON AVE., N. Y. C.		10410 kc. PDK -C- 28.80 meters KOOTWIJK, HOLLAND Calls Java 7:30-9:40 a.m.		9600 kc. *CTIAA -B- 31.25 meters LISBON, PORTUGAL Tues., Thurs., Sat. 3:30-6 p.m.		9415 kc. PLV -C- 31.87 meters BANDOENG, JAVA Phones Holland around 9:45 a.m.	
11811 kc. *2RO -B- 25.4 meters E.I.A.R. Via Montello 5 ROME, ITALY 8:15-9 a.m., 9:15-10:15 a.m., 2:30-5 p.m. and M.W.F. 6-7:30 p.m.		10410 kc. KES -X- 28.80 meters BOLINAS, CALIF. Tests evenings		9595 kc. *HBL -B- 31.27 meters LEAGUE OF NATIONS GENEVA, SWITZERLAND Saturdays, 5:30-6:15 p.m. Mon. at 1.45 a.m.		9125 kc. HAT4 -B- 32.88 meters "RADIOLABOR" GYALI-uT, 22 BUDAPEST, HUNGARY Sunday 6-7 p.m.	
11800 kc. CO9WR -X- 25.42 meters P. O. Box 85 SANCTI SPIRITUS, CUBA Testing in early evening		10350 kc. LSX -C- 28.98 meters MONTE GRANDE, ARGENTINA Tests irregularly 8 p.m.-12 mid- night		9590 kc. *VK2ME -B- 31.28 meters AMALGAMATED WIRELESS LTD., 47 YORK ST. SYDNEY, AUSTRALIA Sunday 12M.-2 a.m., 4:30-8:30 a.m., 11:30 a.m.-1:30 p.m.		9010 kc. KEJ -C- 33.3 meters BOLINAS, CAL. Relays NBC & CBS Programs in evening irregularly	
11790 kc. W1XAL -B- 25.45 meters BOSTON, MASS. Irregularly in the afternoon		10330 kc. ORK -B, C- 29.04 meters RUYSSSELEDE, BELGIUM Broadcasts 1:30-3 p.m.		9590 kc. HP5J -B- 31.28 meters J Street PANAMA CITY, PANAMA 7:30-10 p.m.		8795 kc. HKV -B- 34.09 meters BOGOTA, COLOMBIA Irregular; 6:30 p.m.-12 m.	
11770 kc. *DJD -B- 25.49 meters BROADCASTING HOUSE, BERLIN, GERMANY 12-4:30, 5:05-10:30 p.m.		10290 kc. DIQ -X- 29.16 meters KONIGSWUSTERHAUSEN, GERMANY Broadcasts irregularly		9590 kc. W3XAU -B- 31.28 meters NEWTOWN SQUARE, PA. Relays WCAU 11 a.m.-6:50 p.m.		8750 kc. ZEK -B- 34.29 meters HONGKONG, CHINA Relays ZBW 6-9 a.m.	
11750 kc. *GSD -B- 25.53 meters BRITISH BROAD. CORP. DAVENTRY, ENGLAND		10260 kc. PMN -C- 29.24 meters BANDOENG, JAVA Calls Australia 5 a.m.		9580 kc. *GSC -B- 31.32 meters BRITISH BROAD. CORP. DAVENTRY, ENGLAND		8214 kc. HCJB -B- 36.5 meters QUITO, ECUADOR 7:14-11:14 p.m., except Monday	
11720 kc. *CJRX -B- 25.6 meters WINNIPEG, CANADA Daily, 8 p.m.-12 m.		10250 kc. LSK3 -C- 29.27 meters HURLINGHAM, ARGENTINA Calls Europe and U. S., after- noon and evening		9580 kc. *VK3LR -B- 31.32 meters Research Section Postmaster Gen'l's. Dept. 61 Little Collins St., MELBOURNE, AUSTRALIA 3:15-7:30 a.m. except Sun. Also Fri., 10:30 p.m.-2 a.m.		8185 kc. PSK -C- 36.65 meters RIO DE JANEIRO, BRAZIL Irregularly	
11715 kc. -B- 25.61 meters "RADIO COLONIAL" PARIS, FRANCE 6-9 p.m. 10 p.m.-12 m.		10055 kc. ZFB -C- 29.84 meters HAMILTON, BERMUDA Phones N. Y. C. daytime		9572 kc. LKJ1 -B- 31.34 meters JELOY, NORWAY Relays Oslo 5-8 a.m. 11 a.m. - 6 p.m.		8036 kc. CNR -B- 37.33 meters RABAT, MOROCCO Sunday, 2:30-5 p.m.	
11710 kc. *HJ4ABA -B- 25.63 meters P. O. BOX 50, MEDELLIN, COLOMBIA Irregularly 5-11 p.m.		9950 kc. GCU -C- 30.15 meters RUGBY, ENGLAND Calls N.Y.C. evening		9570 kc. *W1XK -B- 31.35 meters WESTINGHOUSE ELECTRIC & MFG. CO. SPRINGFIELD, MASS. Relays WBZ, 6 a.m.-12 m.		7880 kc. JYR -B- 38.07 meters KEMIKAWA-CHO, CHIBA- KEN, JAPAN 4-7:40 a.m. Sun. 4:14-10:44 p.m.	
11680 kc. KIO -X- 25.68 meters KAHUKU, HAWAII Tests in the evening		9890 kc. LSN -C- 30.33 meters HURLINGHAM, ARGENTINA Calls New York evenings		9596 kc. VUB -B- 31.36 meters BOMBAY, INDIA 11 a.m.-12:30 p.m., Wed., Sat. Sun. 7:30-8:30 a.m.		7860 kc. HC2JSB -B- 38.17 meters GUAYAQUIL, ECUADOR 8:15 p.m.-12 m.	
10740 kc. *JVM -C- 27.93 meters NAZAKI, JAPAN Broadcasts 2-7:45 a.m.		9860 kc. *EAQ -B- 30.43 meters P. O. Box 951 MADRID, SPAIN Daily 5:15-7:30 p.m.; Saturday also 12 n.-2 p.m.		9560 kc. *DJA -B- 31.38 meters BROADCASTING HOUSE, BERLIN 5:05-9:15 p.m.		7799 kc. *HBP -B- 38.47 meters LEAGUE OF NATIONS, GENEVA, SWITZERLAND 5:30-6:15 p.m., Saturday	

Station	Dial	Station	Dial	Station	Dial	Station	Dial
7400 kc. HJ3ABD -B- 40.54 meters P. O. Box 509 BOGOTA, COLOMBIA Daily 12-2 p. m.; 7-11 p. m. Sunday, 5-9 p. m.		6500 kc. HJ5ABD -B- 46.15 meters MANIZALES, COL. 12-1:30 p. m.; 7-10 p. m.		6130 kc. ZGE -B- 48.92 meters KUALA LUMPUR, FED. MALAY STATES Sun., Tue., and Fri., 6:40-8:40 a. m.		6080 kc. W9XAA -B- 49.34 meters CHICAGO FEDERATION OF LABOR CHICAGO, ILL. Relays WCFL Sunday 11:30 a. m.-9 p. m. and Tues., Thurs., Sat., 4 p. m.-12 m.	
7380 kc. XECR -B- 40.65 meters FOREIGN OFFICE, MEXICO CITY, MEX. Sun. 6-7 p. m.		6447 kc. HJ1ABB -B- 46.53 meters BARRANQUILLA, COL., S. A. P. O. BOX 715, 11:30 a. m.-1 p. m.; 5-10 p. m.		6128 kc. LKJ1 -B- 48.94 meters JELOY, NORWAY Relays Oslo. 10 a. m.-6 p. m.		6072 kc. ZHJ -B- 49.41 meters PENANG, MALAYA Daily 7-9 a. m. also Sat. 11 p. m.-1 a. m. (Sun.)	
7310 kc. HJ1ABD -B- 41.04 meters CARTAGENA, COLO. Irregularly, evenings		6425 kc. W3XL -X- 46.70 meters NATIONAL BROADCASTING CO. BOUND BROOK, N. J. Tests irregularly		6120 kc. *YDA -B- 49.02 meters N.I.R.O.M. BANDOENG, JAVA 10:40 p. m.-1:40 a. m., 5-9:40 a. m.		6072 kc. OER2 -B- 49.41 meters VIENNA, AUSTRIA 9 a. m.-5 p. m.; 7-10 p. m.	
7100 kc. HKE -B- 42.25 meters BOGOTA, COL., S. A. Tue. and Sat. 8-9 p. m.; Mon. & Thurs. 6:30-7 p. m.		6425 kc. VE9AS -X- 46.7 meters FREDERICTON, N. B. CANADA Operates irregularly		6120 kc. *W2XE -B- 49.02 meters ATLANTIC BROADCASTING CORP. 485 MADISON AVE., N. Y. C. Relays WABC. 5-10 p. m.		6070 kc. VE9CS -B- 49.42 meters VANCOUVER, B. C., CANADA Sun. 1:45-9 p. m.; 10:30 p. m.- 1 a. m.; Tues. 6-7:30 p. m., 11:30 p. m.-1:30 a. m. Daily 6-7:30 p. m.	
7030 kc. HRPI -B- 42.67 meters SAN PEDRO SULA, HONDURAS Reported on this and other waves irregular in evening		6375 kc. YV4RC -B- 47.06 meters CARACAS, VENEZUELA 4:30-10:30 p. m.		6115 kc. HJ1ABE -B- 49.05 meters CARTAGENA, COL. P. O. BOX 31 Daily 11:15 a. m.-1 p. m.; Sun. 9-11 a. m.; Mon. 10 p. m.-12 m. Wed. 8-11 p. m.		6065 kc. HJ4ABL -B- 49.46 meters MANIZALES, COL. Daily 6-10 p. m., Sat. 11 p. m.- 12 m.	
7000 kc. HJ5ABE -B- 42.86 meters CALI, COLOMBIA Irregular in evening		6316 kc. HIZ -B- 47.5 meters SANTO DOMINGO DOMINICAN REPUBLIC Daily except Sat. and Sun. 4:40-5:40 p. m.; Sat., 9:40- 11:40 p. m.; Sun., 11:40 a. m.- 1:40 p. m.		6112 kc. YV2RC -B- 49.08 meters CARACAS, VENEZUELA Sun. 9:30 a. m.-10:30 p. m., Daily except Sun. 11 a. m.-1:30 p. m., 4-9:30 p. m., Tues., till 10 p. m.		6060 kc. OXY -B- 49.50 meters SKAMLEBOAEK, DENMARK 1-6:30 p. m.; also 11 a. m.-12 n. Sunday	
6860 kc. KEL -X- 43.70 meters BOLINAS, CALIF. Tests irregularly 11 a. m.-12 n.; 6-9 p. m.		6250 kc. HJ4ABC -B- 48 meters PERIERA, COL. 9:30-11:30 a. m., 7-8 or 9 p. m.		6110 kc. GSL -B- 49.10 meters British Broadcasting Corp. Davertry, England		6060 kc. *W8XAL -B- 49.50 meters CROSLEY RADIO CORP. CINCINNATI, OHIO 6:30 a. m.-7 p. m.; 10 p. m.-1 a. m. Relays LWL	
6800 kc. HIH -B- 44.12 meters SAN PEDRO DE MACORIS DOMINICAN REP. 12:10-1:40 p. m., 6:40-7:40 p. m., Sun. 3-4 a. m., 12:10-1:40 p. m., 2:20-4:40 p. m.		6230 kc. OAX4B -B- 48 meters Apartado 1242 LIMA, PERU Wed. & Sun. 7-10 p. m.		6110 kc. VUC -B- 49.1 meters CALCUTTA, INDIA Daily except Sat., 3-5:30 a. m., 9:30 a. m.-noon, Sat. 11:45 a. m.-3 p. m.		6060 kc. VQ7LO -B- 49.50 meters NAIROBI, KENYA, AFRICA Mon.-Fri. 5:45-6:15 a. m., 11:30 a. m.-2:30 p. m. Also 8:30-9:30 a. m. on Tues. and Thurs. Sat. 11:30 a. m.-3:30 p. m. Sun. 11 a. m.-2 p. m.	
6750 kc. JVT -X- 44.44 meters NAZAKI, JAPAN KOKUSAI-DENWA KAISHA, LTD. TOKYO Broadcasts 2-7:45 a. m.		6198 kc. CT1GO -B- 48.4 meters Portuguese Radio Club, PAREDE, PORTUGAL Sun. 11:30 a. m.-1 p. m. Daily exc. Tues. 7:20-8:30 p. m.		6105 kc. HJ4ABB -B- 49.14 meters MANIZALES, COL., S. A. P. O. Box 175 Mon. to Fri. 12:15-1 p. m.; Tues. & Fri. 7:30-10 p. m.; Sun. 2:30-5 p. m.		6060 kc. W3XAU -B- 49.50 meters NEWTON SQUARE, PA. Relays WCAU, Philadelphia 7 p. m.-10 p. m.	
6660 kc. *TIEP -B- 40.05 meters LA-VOZ DEL TROPICO SAN JOSE, COSTA RICA APARTADO 257, Daily 7-10 p. m.		6185 kc. H11A -B- 48.5 meters P. O. BOX 423, SANTIAGO, DOMINICAN REP. 11:40 a. m.-1:40 p. m., 7:40-9:40 p. m.		6100 kc. *W3XAL -B- 49.18 meters NATIONAL BROADCASTING CO. BOUND BROOK, N. J. Relays WJZ Monday, Wednesday, Saturday, 4-5 p. m. Sat. also 11 p. m.-12 m.		6045 kc. HJ3ABI -B- 49.63 meters BOGOTA, COLO. Irregular in evening	
6650 kc. *HC2RL -B- 45.06 meters P. O. BOX 759, GUAYAQUIL, ECUADOR, S. A. Sunday, 5:45-7:45 p. m. Tues., 9:15-11:15 p. m.		6175 kc. HJ2ABA -B- 48.58 meters TUNJA, COLOMBIA 1-2; 7:30-9:30 p. m.		6100 kc. *W9XF -B- 49.18 meters DOWNERS GROVE, ILL. Relays WENR, Chicago		6042 kc. HJ1ABG -B- 49.65 meters BARRANQUILLA, COLO. 12 n.-1 p. m., 6-10 p. m. Sun. 1-6 p. m.	
6620 kc. *PRADO -B- 45.30 meters RIOBAMBA, ECUADOR Thurs. 9-11:45 p. m.		6160 kc. *YV3RC -B- 48.7 meters CARACAS, VENEZUELA Generally 4:00-10:00 p. m.		6097 kc. JB -B- 49.2 meters AFRICAN BROADCASTING CO. JOHANNESBURG, SOUTH AFRICA Sun.-Fri. 11:45 p. m.- 12:30 a. m. (next day) Mon.-Sat. 3:30-7 a. m. 9 a. m.-4 p. m. Sun. 8-10:15 a. m.; 12:30-3 p. m.		6040 kc. *W1XAL -B- 49.67 meters BOSTON, MASS.	
6611 kc. RV72 -B- 45.38 meters MOSCOW, U. S. S. R. 1-6 p. m.		6155 kc. CO9GC -B- 48.74 meters GRAU & CAMENERS LABS, BOX 137, SANTIAGO, CUBA 9-10 a. m., 11:30 a. m.-1:30 p. m., 3-4:30 p. m. and 10-11 p. m., 12 m. - 2 a. m.		6090 kc. *VE9GW -B- 49.26 meters BOWMANVILLE, ONTARIO, CANADA		6030 kc. *HP5B -B- 49.75 meters P. O. BOX 910 PANAMA CITY, PAN. 12 N.-1 p. m., 8-10:30 p. m.	
6610 kc. H14D -B- 45.39 meters SANTO DOMINGO, DOMINI- CAN REPUBLIC Except Sun. 11:55 a. m.-1:40 p. m.; 4:40-7:40 p. m.		6150 kc. CSL -B- 48.78 meters LISBON, PORTUGAL 7-8:30 a. m., 2-7 p. m.		6090 kc. VE9BJ -B- 49.26 meters SAINT JOHN, N. B., CAN. 7-8:30 p. m.		6030 kc. VE9CA -B- 49.75 meters CALGARY, ALBERTA, CAN. 9 a. m.-3 p. m., 7 p. m.-12 m.	
6550 kc. TI2PG -B- 45.77 meters APARTADO 225, SAN JOSE, COSTA RICA "Costa Rica Broadcasting" 9-10 p. m.		6150 kc. *CJRO -B- 48.78 meters WINNIPEG, MAN., CANADA 8 p. m.-12 m. Sun. 3-10:30 p. m.		6090 kc. VE9BJ -B- 49.26 meters SAINT JOHN, N. B., CAN. 7-8:30 p. m.		6020 kc. CQN -B- 49.83 meters MACAO, CHINA Mon. and Fri. 3-5 a. m.	
6528 kc. HIL -B- 45.95 meters SANTO DOMINGO, D. R. Sat., 8-10 p. m.		6140 kc. *W8XK -B- 48.86 meters WESTINGHOUSE ELECTRIC & MFG. CO. PITTSBURGH, PA. Relays KDKA 4:30 p. m.-12 m.		6080 kc. CP5 -B- 49.34 meters LAPAZ, BOLIVIA 7-10:30 p. m.		6020 kc. *DJC -B- 49.83 meters BROADCASTING HOUSE, BERLIN 12 n.-4:30 p. m., 9:30-10:30 p. m.	
6520 kc. *YV6RV -B- 46.01 meters VALENCIA, VENEZUELA 5-7, 9-11 p. m., Irregular						(Continued on Page 191)	

# Police Radio Alarm Stations

<b>CGZ</b> Vancouver, B.C. 2342 kc.	<b>KNFB</b> Idaho Falls, Idaho 2414 kc.	<b>WPEP</b> Kenosha, Wis. 2450 kc.
<b>CJW</b> St. Johns, N.B. 2390 kc.	<b>KNFC</b> SS Gov. Stevens, (Wash.) 2490 kc.	<b>WPES</b> Saginaw, Mich. 2442 kc.
<b>CJZ</b> Verdeen, Que. 2890 kc.	<b>KNFD</b> SS Gov. J. Rogers, (Wash.) 2490 kc.	<b>WPET</b> Lexington, Ky. 1706 kc.
<b>KGHA</b> } Portable-Mobile	<b>KNFE</b> Duluth, Minn. 2382 kc.	<b>WPEV</b> Portable (in Mass.) 1666 kc.
<b>KGHB</b> } In State of Wash. 2490 kc.	<b>KNFF</b> Leavenworth, Kans. 2422 kc.	<b>WPEW</b> Northampton, Mass. 1666 kc.
<b>KGHC</b> }	<b>KNFG</b> Olympia, Wash. 2490 kc.	<b>WPFA</b> Newton, Mass. 1712 kc.
<b>KGHD</b> }	<b>KNFH</b> Garden City, Kans. 2474 kc.	<b>WPFC</b> Muskegon, Mich. 2442 kc.
<b>KGHE</b> }	<b>KNFI</b> Mt. Vernon, Wash. 2414 kc.	<b>WPFE</b> Reading, Pa. 2442 kc.
<b>KGHG</b> Las Vegas, Nev. 2474 kc.	<b>KNFJ</b> Pomona, Cal. 1712 kc.	<b>WPFG</b> Jacksonville, Fla. 2442 kc.
<b>KGHK</b> Palo Alto, Cal. 1674 kc.	<b>KNFK</b> Bellingham, Wash. 2490 kc.	<b>WPFH</b> Baltimore, Md. 2414 kc.
<b>KGHM</b> Reno, Nev. 2474 kc.	<b>KNFL</b> Shuksan, Wash. 2490 kc.	<b>WPGI</b> Columbus, Ga. 2414 kc.
<b>KGHN</b> Hutchinson, Kans. 2450 kc.	<b>KNFM</b> Compton, Cal. 2490 kc.	<b>WPGJ</b> Hammond, Ind. 1712 kc.
<b>KGHO</b> Des Moines, Iowa 1632 kc.	<b>KNFN</b> Waterloo, Ia. 1632 kc.	<b>WPGK</b> Hackensack, N. J. 2430 kc.
<b>KGHP</b> Lakton, Okla. 2466 kc.	<b>KNFO</b> Storm Lake, Ia. 1632 kc.	<b>WPGM</b> Gary, Ind. 2470 kc.
<b>KGHQ</b> Chinook Pass, W. 2490 kc.	<b>KNFP</b> Everett, Wash. 2414 kc.	<b>WPGN</b> Birmingham, Ala. 2382 kc.
<b>KGHR</b> (Mobile) in Wash. 2490 kc.	<b>KNFQ</b> Skykomish, Wash. 2490 kc.	<b>WPGO</b> Fairhaven, Mass. 1712 kc.
<b>KGHS</b> Spokane, Wash. 2414 kc.	<b>KNGE</b> Cleburne, Tex. 1712 kc.	<b>WPGP</b> Knoxville, Tenn. 2474 kc.
<b>KGHT</b> Brownsville, Tex. 2382 kc.	<b>KNGF</b> Sacramento, Cal. 2422 kc.	<b>WPGQ</b> Clarksburg, W. Va. 2490 kc.
<b>KGHU</b> Austin, Tex. 2432 kc.	<b>KNGG</b> Phoenix, Ariz. 1698 kc.	<b>WPGR</b> Swathmore, Pa. 2474 kc.
<b>KGHV</b> Corpus Christi, Tex. 2382 kc.	<b>KNGH</b> Dodge City, Kans. 2474 kc.	<b>WPRS</b> Johnson City, Tenn. 2470 kc.
<b>KGHW</b> Centralia, Wash. 2414 kc.	<b>KNGJ</b> El Centro, Cal. 2490 kc.	<b>WPSA</b> Asheville, N. C. 2474 kc.
<b>KGHX</b> Santa Ana, Cal. 2490 kc.	<b>KNKJ</b> Duncean, Okla. 2450 kc.	<b>WPTA</b> Lakeland, Fla. 2442 kc.
<b>KGHY</b> Whittier, Cal. 1712 kc.	<b>KNGL</b> Galveston, Tex. 1712 kc.	<b>WPTB</b> Portland, Me. 2422 kc.
<b>KGIZ</b> Little Rock, Ark. 2406 kc.	<b>KSNE</b> Duluth, Minn. 2382 kc.	<b>WPTC</b> Pawtucket, R. I. 2466 kc.
<b>KGJX</b> Pasadena, Cal. 1712 kc.	<b>KSW</b> Berkeley, Cal. 1658 kc.	<b>WPTD</b> Bridgeport, Conn. 2466 kc.
<b>KGJY</b> Albuquerque, N.M. 2414 kc.	<b>KVP</b> Dallas, Tex. 1712 kc.	<b>WPTF</b> Palm Beach, Fla. 2442 kc.
<b>KGKX</b> Cedar Rapids, Iowa 2466 kc.	<b>VDM</b> Halifax, N.S. 1690 kc.	<b>WPTG</b> Yonkers, N. Y. 2442 kc.
<b>KGPA</b> Seattle, Wash. 2414 kc.	<b>VYR</b> Montreal, Can. 1706 kc.	<b>WPTH</b> Miami, Fla. 2442 kc.
<b>KGPB</b> Minneapolis, Minn. 2430 kc.	<b>VYW</b> Winnipeg, Man. 2396 kc.	<b>WPGA</b> Bay City, Mich. 2466 kc.
<b>KGPC</b> St. Louis, Mo. 1706 kc.	<b>WCK</b> Belle Island, Mich. 2414 kc.	<b>WPGB</b> Port Huron, Mich. 2466 kc.
<b>KGPD</b> San Francisco, Cal. 2474 kc.	<b>WEY</b> Boston, Mass. 1630 kc.	<b>WPGC</b> S. Schenectady, N. Y. 1658 kc.
<b>KGPE</b> Kansas City, Mo. 2422 kc.	<b>WKDT</b> Detroit, Mich. 1630 kc.	<b>WPGD</b> Rockford, Ill. 2458 kc.
<b>KGPF</b> Sante Fe, N. Mex. 2414 kc.	<b>WKDU</b> Cincinnati, Ohio 1706 kc.	<b>WPGF</b> Providence, R. I. 1712 kc.
<b>KGPG</b> Vallejo, Cal. 2422 kc.	<b>WMDZ</b> Indianapolis, Ind. 2442 kc.	<b>WPGG</b> Findlay, Ohio 1596 kc.
<b>KGPH</b> Oklahoma City, Okla. 2450 kc.	<b>WMI</b> Buffalo, N. Y. 2422 kc.	<b>WPGH</b> Albany, N. Y. 2414 kc.
<b>KGPI</b> Omaha, Neb. 2466 kc.	<b>WMO</b> Highland Park, Mich. 2414 kc.	<b>WPGI</b> Portsmouth, Ohio 2430 kc.
<b>KGPJ</b> Beaumont, Tex. 1712 kc.	<b>WMP</b> Framingham, Mass. 1666 kc.	<b>WPGJ</b> Utica, N. Y. 2414 kc.
<b>KGPK</b> Sioux City, Iowa 2466 kc.	<b>WNFP</b> Niagara Falls, N. Y. 2422 kc.	<b>WPGK</b> Cranston, R. I. 2466 kc.
<b>KGPL</b> Los Angeles, Cal. 1712 kc.	<b>WPDA</b> Tulare, Cal. 2414 kc.	<b>WPLG</b> Binghamton, N. Y. 2442 kc.
<b>KGPM</b> San Jose, Cal. 2466 kc.	<b>WPDB</b> Chicago, Ill. 1712 kc.	<b>WPGN</b> South Bend, Ind. 2490 kc.
<b>KGPN</b> Davenport, Iowa 2466 kc.	<b>WPDC</b> Chicago, Ill. 1712 kc.	<b>WPGO</b> Huntington, N. Y. 2490 kc.
<b>KGPO</b> Tulsa, Okla. 2450 kc.	<b>WPDD</b> Chicago, Ill. 1712 kc.	<b>WPGP</b> Muncie, Ind. 2442 kc.
<b>KGPP</b> Portland, Ore. 2442 kc.	<b>WPDE</b> Louisville, Ky. 2442 kc.	<b>WPGQ</b> Columbus, Ohio 1596 kc.
<b>KGPR</b> Honolulu, T.H. 1712 kc.	<b>WPDF</b> Flint, Mich. 2466 kc.	<b>WPGS</b> Mineola, N. Y. 2490 kc.
<b>KGPR</b> Minneapolis, Minn. 2430 kc.	<b>WPDG</b> Youngstown, Ohio 2458 kc.	<b>WPGT</b> New Castle, Pa. 2482 kc.
<b>KGPS</b> Bakersfield, Cal. 2414 kc.	<b>WPDH</b> Richmond, Ind. 2442 kc.	<b>WPGU</b> Cohasset, Mass. 1712 kc.
<b>KGPW</b> Salt Lake City, Utah 2406 kc.	<b>WPDI</b> Columbus, Ohio 2430 kc.	<b>WPGV</b> Boston, Mass. 1712 kc.
<b>KGPX</b> Denver, Colo. 2442 kc.	<b>WPDJ</b> Milwaukee, Wis. 2450 kc.	<b>WPGW</b> Mobile, Ala. 2382 kc.
<b>KGPY</b> Baton Rouge, La. 1574 kc.	<b>WPDK</b> Lansing, Mich. 2442 kc.	<b>WPGX</b> Worcester, Mass. 2466 kc.
<b>KGZ</b> Wichita, Kans. 2460 kc.	<b>WPDL</b> Dayton, Ohio 2430 kc.	<b>WPGZ</b> Johnson City, Tenn. 2474 kc.
<b>KGZA</b> Fresno, Calif. 2414 kc.	<b>WPDN</b> Auburn, N. Y. 2382 kc.	<b>WPHA</b> Fitchburg, Mass. 2466 kc.
<b>KGZB</b> Houston, Tex. 1712 kc.	<b>WPDO</b> Akron, Ohio 2458 kc.	<b>WPHB</b> Nashua, N. H. 2422 kc.
<b>KGZC</b> Topeka, Kans. 2422 kc.	<b>WPDP</b> Philadelphia, Pa. 2474 kc.	<b>WPHC</b> Massillon, O. 1632 kc.
<b>KGZD</b> San Diego, Cal. 2490 kc.	<b>WDDR</b> Rochester, N. Y. 2422 kc.	<b>WPHD</b> Steubenville, O. 2458 kc.
<b>KGZE</b> San Antonio, Tex. 2432 kc.	<b>WPDS</b> St. Paul, Minn. 2430 kc.	<b>WPHF</b> Marion Co., Ind. 1634 kc.
<b>KGZF</b> Chanute, Kans. 2460 kc.	<b>WPDV</b> Kokomo, Ind. 2490 kc.	<b>WPHG</b> Richmond, Va. 2450 kc.
<b>KGZG</b> Des Moines, Iowa 2466 kc.	<b>WPDW</b> Pittsburgh, Pa. 1712 kc.	<b>WPHI</b> Medford, Mass. 1712 kc.
<b>KGZH</b> Klamath Falls, Ore. 2382 kc.	<b>WPDY</b> Washington, D. C. 2422 kc.	<b>WPHJ</b> Charleston, W. Va. 2490 kc.
<b>KGZI</b> Wichita Falls, Tex. 2458 kc.	<b>WPDZ</b> Detroit, Mich. 2414 kc.	<b>WPHK</b> Fairmont, W. Va. 2490 kc.
<b>KGZJ</b> Phoenix, Ariz. 2430 kc.	<b>WPEA</b> Atlanta, Ga. 2414 kc.	<b>WPHL</b> Wilmington, O. 1596 kc.
<b>KGZL</b> Shreveport, La. 1712 kc.	<b>WPEB</b> Fort Wayne, Ind. 2490 kc.	<b>WPHM</b> Portable in Ohio 1632 kc.
<b>KGZM</b> El Paso, Tex. 2414 kc.	<b>WPEC</b> Syracuse, N. Y. 2382 kc.	<b>WPHN</b> Orlando, Fla. 2442 kc.
<b>KGZN</b> Tacoma, Wash. 2414 kc.	<b>WPEE</b> Grand Rapids, Mich. 2442 kc.	<b>WPHO</b> Tampa, Fla. 2466 kc.
<b>KGZO</b> Santa Barbara, Cal. 2414 kc.	<b>WPEF</b> Memphis, Tenn. 2466 kc.	<b>WPHP</b> Zanesville, Ohio 2430 kc.
<b>KGZP</b> Coffeyville, Kans. 2460 kc.	<b>WPEG</b> Arlington, Mass. 1712 kc.	<b>WPHQ</b> Jackson, Mich. 2466 kc.
<b>KGZQ</b> Waco, Tex. 1712 kc.	<b>WPEE</b> New York, N. Y. 2450 kc.	<b>WPHR</b> Parkersburg, W. Va. 2490 kc.
<b>KGZR</b> Salem, Ore. 2442 kc.	<b>WPEF</b> New York, N. Y. 2450 kc.	<b>WPHS</b> Culver, Ind. 1634 kc.
<b>KGZS</b> McAlester, Okla. 2458 kc.	<b>WPEG</b> New York, N. Y. 2450 kc.	<b>WPHT</b> Cambridge, Ohio 1632 kc.
<b>KGZT</b> Santa Cruz, Cal. 1674 kc.	<b>WPEH</b> Somerville, Mass. 1712 kc.	<b>WPHV</b> Bristol, Va. 2450 kc.
<b>KGZU</b> Lincoln, Neb. 2490 kc.	<b>WPEI</b> E. Providence, R. I. 1712 kc.	<b>WPHW</b> Elizabethton, Tenn. 2474 kc.
<b>KGZV</b> Aberdeen, Wash. 2458 kc.	<b>WPEK</b> New Orleans, La. 2430 kc.	<b>WPSP</b> Harrisburg, Pa. 1674 kc.
<b>KGZW</b> Lubbock, Tex. 2458 kc.	<b>WPEL</b> W. Bridgewater, Mass. 1666 kc.	<b>WQFE</b> Seymour, Ind. 1634 kc.
<b>KGZY</b> Albuquerque, N. Mex. 2414 kc.	<b>WPEM</b> Woonsocket, R. I. 2466 kc.	<b>WRBH</b> Cleveland, Ohio 2458 kc.
<b>KGZZ</b> San Bernardino, Cal. 1712 kc.		<b>WRDQ</b> Toledo, Ohio 2474 kc.
<b>KIUK</b> Jefferson City, Mo. 1674 kc.		<b>WRDR</b> Grosse Pt. Village, Mich. 2414 kc.
<b>KNFA</b> Clovis, N. Mex. 2414 kc.		<b>WRDS</b> E. Lansing, Mich. 1666 kc.

# Television Stations

## 2000-2100 kc.

VE9AU—London, Ont., Can.  
 VE9DS—Montreal, Que.  
 W2XDR—Long Island City, N. Y.  
 W8XAN—Jackson, Mich.  
 W8XAK—Iowa City, Ia.  
 W8XAL—Manhattan, Kans.  
 W8XAO—Chicago, Ill.  
 W8XAH—Bakersfield, Calif.

## 2750-2850 kc.

W3XAK—Portable  
 W9XAP—Chicago, Ill.  
 W2XBS—Bellmore, N. Y.  
 W9XAL—Kansas City, Mo.  
 W9XG—W. Lafayette, Ind.  
 W2XAB—New York, N. Y.  
 VE9AR—Saskatoon, Sask., Can.  
 VE9ED—Mt. Joli, Que., Can.

## 42000-56000, 60000-86000 kc.

W2XAX—New York, N. Y.  
 W6XAO—Los Angeles, Calif.  
 W9XD—Milwaukee, Wis.  
 W2XBT—Portable  
 W2XF—New York, N. Y.  
 W3XE—Philadelphia, Pa.  
 W3XAD—Camden, N. J.  
 W10XX—Portable & Mobile (Vicinity of Camden)

W2XDR—Long City, N. Y.  
 W8XAN—Jackson, Mich.  
 W9XAT—Portable  
 W2XD—New York, N. Y.  
 W2XAG—Portable  
 W1XG—Boston, Mass.  
 W9XK—Iowa City, Ia.  
 VE9B—Vanouver, B.C., Can.  
 VE9DS—Montreal, Que., Can.  
 VE9AU—London, Ont., Can.  
 VE9RC—Quebec, Que., Can.

# Grand Short-Wave Station List

● This Grand List of Short-Wave Stations of the World is a carefully edited one, and especially compiled by the editors. Only those short-wave stations which the average listener is likely to hear have been included in this list. A special "Quick Reference" list appears elsewhere in the magazine, giving the "Star" short-wave broadcasting stations, while another specially edited list contains the "Television" and "Police" station call letters.

The editors will be glad at all times to receive corrections from our readers, and particularly any additional information on new stations not found in this list. In giving this information, please write such data on a separate sheet if the letter contains references to any other subject, so that these corrections can be handed directly to the editor of this department. A postcard will frequently serve the purpose for sending us such information.

## Short Wave Phone Stations By Order of Frequency in Megacycles

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
<b>199 TO 180 METERS</b>					
1.510	VAF Alert Bay, Can.	1.600	PIC Scheveningen Lighthouse Dep. Netherlands	1.819	OXC Ringsted, Denmark
1.510	CJD Campbell River, B.C., Can.	1.615	PIB Brandaris Lighthouse, Neth.	1.840	YDJ4 Cheribon, Netherl. India, (B)
1.510	VAC Cape Lazo, Can.	1.615	PCD Haaks Lightship, Netherlands	1.860	YDK6 Semarang, Netherl. India, (B)
1.510	CJN Cardero Channel, B.C., Can.	1.615	PIA Kykduin Semaphore, Neth.	<b>160 TO 120 METERS</b>	
1.510	CJE Ceepceee, B.C., Can.	1.615	PCE Terschellingbank Lightship, Netherlands	1.875	EAU San Lorenzo, Canary Islands
1.510	CJK Knight Inlet, B.C., Can.	1.615	YDB4 Tjepoe, Netherland India (B)	1.875	DCA Adlergrund Lightship, Germany
1.510	VCU Merry Island, Can.	1.620	CZB Bellevue, P.Q., Canada	1.875	DCV Bremen Lightship, Germany
1.510	CFV Namu, B.C., Can.	1.620	CFC Cub Lake, Sask., Canada	1.875	DCK Elbe Lightship No. 2, Germany
1.510	CKG Powell River, B.C., Can.	1.620	CGV Emma Lake, Sask., Canada	1.875	DCG Elbe Lightship No. 3, Germany
1.510	YLZ Riga, Latvia (X)	1.620	CZJ Ile-a-la-Crosse, Sask., Canada	1.875	DCI Elbe Lightship No. 4, Germany
1.510	CJT Theodosia Arm, B.C., Can.	1.620	CFD Kenora, Ont., Canada	1.875	DAC Elbe-Weser, Germany
1.510	CYG Thurston Bay, B.C., Can.	1.620	CGQ Lac la Ronge, Sask., Canada	1.875	DCU Robbinplate Lighthouse, Ger.
1.510	VAI Vancouver, B.C., Can.	1.620	CMF Manicouagan River, P.Q., Can.	1.875	DAS Rugen, Germany
1.510	CJH Viner Sound, B.C., Can.	1.620	CZY Riviere du Chef, P.Q., Canada	1.875	TFH Husavik, Iceland
1.510	CJR Wakeman Sound, B.C., Can.	1.620	CZZ St. Felicien, P. Q., Canada	1.875	RFWA Moscow, Russia
1.520	VIA Adelaide, Australia	1.620	CFL Tabouret, P. Q., Canada	1.875	RLXS Saratov, Russia
1.520	VKO Sydney, Australia	1.620	CJC Thunder Mt., Sask., Canada	1.880	YD09 Soerabaja, Netherl. India, (B)
1.523	GUF Alderney, United Kingdom	1.620	---	1.898	ESP Parnu, Estonia
1.523	GUG Guernsey, United Kingdom	1.622	VKA Bogolara, Australia	1.900	YD06 Batavia, Netherl. India, (B)
1.523	GUB Lochboisdale, United Kingdom	1.622	VJE Burringjuck, Australia	1.900	RW69 Odessa, Russia, (T)
1.523	GUA Tobermory, United Kingdom	1.622	VJF Cootamundra, Australia	1.910	---
1.530	W9XBY Kansas City, Missouri, USA (BX)	1.622	VJH Gundagai, Australia	1.920	YDHN Ship Stations, Germany
1.530	W1XBS Prospect Twp., Conn., USA (BX)	1.622	VJO Koorawatha, Australia	1.940	OH9N Buitenzorg, Netherl. India, (B)
1.530	SCJ Karlskrona, Sweden (B)	1.622	VKJ Lithgow, Australia	1.940	YDN3 Hango, Finland
1.532	CFC Cub Lake, Sask., Can.	1.622	VJG Murrumburrh, Australia	1.960	---
1.532	CGV Emma Lake, Sask., Can.	1.622	VKB Yass, Australia	2.000	OXK Tveraa, Denmark
1.532	CZJ Ile-a-la-Crosse, Sask., Can.	1.622	---	2.000	TFG Grimsey, Iceland
1.532	CGQ Lac la Ronge, Sask., Can.	1.622	---	2.020	RIAD Nijni-Chkaft, Russia
1.532	CJC Thunder Mountain, Sask., Can.	1.622	OXB Portable, Burringjuck, Australia	2.020	---
1.538	OSW Antwerp, Belgium	1.629	OUY Vyl Lightship, Denmark	2.050	VJI Cloncurry, Australia
1.538	OYM Christianso, Denmark	1.630	ESS Osmussaar, Estonia	2.090	DAS Rugen, Germany
1.538	OXJ Thorshavn, Denmark	1.640	YDD2 Bandoeng, Netherland India	2.098	---
1.538	OZK Thorshavn, Denmark	1.648	YDA3 Buitenzorg, Netherl. India, B	2.110	---
1.538	TFO Malmey, Iceland	1.648	TFA Reykjavik, Iceland	2.110	YD12 Soekaboemi, Netherl. India, (B)
1.538	TFS Stykkisholmur, Iceland	1.648	TFX Siglufjordur, Iceland	2.126	---
1.540	VBY Lunenburg, N.S., Can.	1.648	TFV Vestmannaeyjar, Iceland	2.140	DAC Elbe-Weser, Germany
1.540	VK3EJ Melbourne, Australia (Fire)	1.660	YDB3 Djokjakarta Netherl. Ind., (B)	2.140	VHO Melbourne, Australia
1.540	CJD Campbell River, B.C., Can.	<b>180 TO 160 METERS</b>			
1.540	CJD Thurston Bay, B.C., Can.	1.690	---	2.198	---
1.550	W6XAI Bakersfield, Calif. (BX)	1.712	---	2.206	VVY Port Menier, P. Q., Canada
1.550	W2XR Long Island City, N.Y., USA (BX)	1.712	CZG Prince Rupert, B. C., Canada	2.212	VYZ High Falls, P. Q., Canada
1.550	YDA4 Soekaboemi, Neth. India (B)	1.712	CZF Vancouver, B. C., Canada	2.230	RT7 Azov-on-le-Don, Russia
1.550	---	1.712	CZE Victoria, B. C., Canada	2.252	KIUG Portable, USA
1.560	CZA Drummondville, P.Q., Can.	1.714	ESG Tallinn-Ulemiste, Estonia	2.252	KIUF Portable, USA
1.560	VBQ Halifax, N.S., Can.	1.715	---	2.252	KIUE Portable, USA
1.570	YDB6 Malang, Netherland India	1.715	---	2.252	KIUD Portable, USA
1.579	VLA Cape Bruny, Australia	1.715	---	2.252	KIUC Portable, USA
1.579	VLB Maatsuyker Isl., Australia	1.715	---	2.252	KIUB Portable, USA
1.579	VLC Tasman Isl., Australia	1.716	---	2.255	DAC Elbe-Weser, Germany
1.579	DCA Adlergrund Lightship, Germany	2.000	---	2.284	CKO Crane Island, P. Q., Canada
1.579	DCV Bremen Lightship, Germany	1.720	DAL Bremerhaven Lloydhalle, Ger.	2.284	CFI Flagg's Cove, N. B., Canada
1.579	DCK Elbe Lightship No. 2, Germany	1.730	YLY Liepaja, Latvia, (X)	2.284	CFT Leamington, Ont., Canada
1.579	DCG Elbe Lightship No. 3, Germany	1.735	RFAU Bykovo (Moscow Obl.) Russia	2.284	CKP Montmagny, P. Q., Canada
1.579	DCI Elbe Lightship No. 4, Germany	1.754	OYE Ronne, Denmark	2.284	CFX Pelee Island, Ont., Canada
1.579	DCU Robbenplate Lighthouse, Germ.	1.760	GMH Main Head, Irish Free State	2.284	CKB Pictou, N. S., Canada
1.579	---	1.760	GCK Valentia Irish Free State	2.284	CKU Pictou Island, P. Q., Canada
1.579	OYQ Jakobshavn, Greenland	1.760	---	2.290	CFZ Welchpool, N. B., Canada
1.580	CJM Borden, P.E.I., Canada	1.760	---	2.290	CFW Bones Bay, B. C., Canada
1.582	YDD3 Batavia, Netherland India (B)	1.760	---	2.290	CJE Ceepceee, B. C., Canada
1.585	PCC Noordhinder Lightship, Neth.	1.760	---	2.290	VFJ Homalko, B. C., Canada
1.585	PID Vlissingen Canal Watch, Neth.	1.760	---	2.290	CZL Humbuck Bay, B. C., Canada
1.595	OZP Lyngby, Denmark (B)	1.760	---	2.290	CJY Jackson Bay, B. C., Canada
1.595	YDB5 Solo, Netherland India (B)	1.760	---	2.290	CFV Namu, B. C., Canada
1.596	---	1.760	---	2.290	CJL Selwyn Inlet, B. C., Canada
1.596	CFC Cub Lake, Sask., Canada	1.760	---	2.300	CJR Wakeman Sound, B. C., Canada
1.596	CGV Emma Lake, Sask., Canada	1.760	---	2.300	RHMA Armavir, Russia
1.596	CZJ Ile-la-Cross, Sask., Canada	1.764	EAI Teneriffe, Canary Islands	2.300	RKPU Loubny, Russia
1.596	CGQ Lac la Ronge, Sask., Canada	1.764	DCS Toning, Germany	2.343	RBCQ Moscow, Russia
1.596	CJC Thunder Mountain, Sask., Can.	1.765	TFF Flatey a Skjalfanda, Iceland	2.350	VFJ Halifax, N. S., Canada
1.596	TFZ Isafjordur, Iceland	1.775	RHBD Leningrad, Russia	2.355	---
1.596	TFA Reykjavik, Iceland	1.775	ESR Ruhnri, Estonia	2.355	---
1.596	TFX Siglufjordur, Iceland	1.775	---	2.355	---
1.596	TFV Vestmannaeyjar, Iceland	1.818	OUY Vyl Lightship, Denmark	2.355	---
1.600	PIE Hoek van Holland, Netherlands	1.818	PDN Scheveningen, Netherlands	2.355	---
1.600	PCB Maas Lightship, Netherlands	1.818	RHBD Leningrad, Russia	2.355	---

-Broadcasting; X=Experimental.

freq. Mc.	CALL and LOCATION	freq. Mc.	CALL and LOCATION	freq. Mc.	CALL and LOCATION
2.355	Portpatrick, United Kingdom	2.910	YDE3 Semarang, Netherl. India, (B)	3.333	OFU Vatskar, Finland
2.355	Seathorth, United Kingdom	2.920	REKQ Alma-Ata, Russia	3.333	OHP Viipuri, Finland
2.355	Valentia, United Kingdom	2.930	YD05 Soerabaja, Netherl. India, (B)	3.340	CGD Drummondville, P. Q., Canada
2.357	Wick, United Kingdom	2.950	YDQ5 Malang, Netherland India, (B)	3.340	CGM Montreal, P. Q., Canada
2.357	EDP Palma de Mallorca, Spain	2.980	CZA Drummondville, P. Q., Canada	3.345	W7XA Portable, USA
2.366	EDR4 Palma de Mallorca, Spain			3.350	Naval Stations, Germany
2.385	YDA2 Naval Stations, United King.			3.350	YDQ3 Malang, Netherland India, (B)
2.398	Experimental, USA	2.990	RHBB Novorjev, Russia	3.370	YDU2 Medan, Netherland India, (B)
2.400	EST Tallinn-Sadam, Estonia	3.000	SQB Bialystok, Poland	3.370	RIAY Tchernoretchenskoe, Russia
2.400	DAF Norddeich, Germany	3.000	SGA Lwow, Poland	3.380	RGJV Iochkar-Ola, Russia
2.400	OYR Egedesminde, Greenland	3.000	SWZ Warsaw, Poland	3.380	RENJ Karsakpai, Russia
2.415	YDE4 Soerabaja, Netherl. India, (B)	3.040	YDA Tandjongpriok, Neth. Ind. (B)	3.385	KIUU Marshall, Alaska
2.416	CZG Prince Rupert, B. C., Canada	3.040	CGE Calgary, Alta., Canada	3.385	W7XAP Portable, USA
2.416	CJW St. John, N. B., Canada	3.040	CKS Calgary, Alta., Canada	3.390	RENG Atchi-Sai, Russia
2.416	CZF Vancouver, B. C., Canada	3.040	RKDM Medvefija Gora, Russia	3.390	YDQ2 Djember, Netherland India, (B)
2.416	CZE Victoria, B. C., Canada	3.040	RKOO Odessa, Russia	3.410	WWG Cheboygan Range Light Station, Mich., USA
2.416	YVW Winnipeg, Man., Canada	3.048	RKDO Parandovo, Russia	3.410	WWEC Delaware Breakwater Light, Del., USA
2.450	YDB2 Semarang, Netherl. India, (B)	3.048	KIOG Portable, USA	3.410	WWR Detroit, L.H. Depot, Mich., USA
2.452	CQZ Vancouver, B. C., Canada	3.048	KIUF Portable, USA	3.410	WWN Detroit River Light Station, Mich., USA
2.452	CJZ Verdun, P. Q., Canada	3.048	KIUE Portable, USA	3.410	WST Dry Tortugas Lgt. Sta., USA
		3.048	KIUD Portable, USA	3.410	WWDI Edgemoor Depot, Del.
		3.048	KIUC Portable, USA	3.410	WWDW Fourteen Foot Bank Light, Del., USA
		3.048	KIUB Portable, USA	3.410	WWZ Key West L.H. Dep. Fla., USA
		3.050	RUF Moscow, Russia	3.410	WWAJ Manitow Lgt. Sta., Mich., USA
		3.050	Portable, Wyndham Meatsworks, Australia	3.410	WWM Marquette Lgt. Sta., Wis., USA
		3.058	VVY Masson, P. Q., Canada	3.410	WWAL Passage Isl. Lgt. Sta., USA
		3.060	RKNN Kharkov, Russia	3.410	WRL Poe Reef Lgt. Sta., Mich., USA
		3.060	RUF Moscow, Russia	3.410	WWAM Rock of Ages Lgt., Mich., USA
		3.080	PVV5 Tarauaca, Brazil	3.410	WWH Standard Rock Lgt., Mich., USA
		3.080	RHIK Rostov on Don, Russia	3.410	YDL4 Djokjakarta, Nethrl. India, (B)
		3.080	REBB Vladimir, Russia	3.410	RGAZ Kotelnitch, Russia
		3.088	--- Airplanes, USA	3.410	RJBD Soerdlovsk, Russia
		3.090	RBX Moscow, Russia	3.420	RFAU Bykovo, Russia
		3.095	W7XA Portable, USA	3.435	OEH1 Vienna, Austria
		3.105	W7XAG Portable, USA	3.430	YD02 Soerabaja, Netherl. India, (B)
		3.125	--- Airplanes, USA	3.440	RFX Moscow, Russia
		3.130	YDH6 Bandoeng, Netherl. India, (B)	3.440	RKF Moscow, Russia
		3.135	RKOP Kiev, Russia	3.445	W7XAG Portable, USA
		3.140	RMDU Ourounga, Russia	3.450	YDL2 Solo, Netherland India, (B)
		3.150	YDG3 Batavia, Netherl. India, (B)	3.450	RKNZ Kharkov, Russia
		3.150	REIX Akmolinsk, Russia	3.450	RFAF Moscow, Russia
		3.150	RLEE Bouchoulei, Russia	3.450	RFBL Moscow, Russia
		3.150	RMDK Ksenievskaja, Russia	3.460	CFD Kenora, Ont., Canada
		3.152	CGM Montreal, P. Q., Canada	3.460	CZG Prince Rupert, B. C., Canada
		3.152	CGY Yamachichi P. Q., Canada	3.460	CZF Vancouver, B. C., Canada
		3.155	W7XAG Portable station, USA	3.460	CFE Victoria, B. C., Canada
		3.158	OYN Upernivik, Greenland	3.470	RFAJ Moscow, Russia
		3.160	CGM Montreal, P. Q., Canada	3.480	VLT Bulolo, New Guinea
		3.160	RGY Yamachichi P. Q., Canada	3.485	SGB Bialystok, Poland
		3.160	RLEZ Zilovo, Russia	3.490	YDH3 Bandoeng, Java, (B)
		3.170	YD01 Soerabaja, Netherl. India, (B)	3.490	HAP Budapest, Hungary
		3.170	RLEC Tehita, Russia	3.490	SGZ Warsaw, Poland
		3.180	RMDG Bolchoi Never, Russia		
		3.180	RHJD Chakhty, Russia		
		3.180	RLED Chulka, Russia		
		3.180	RMWA Tashkent, Russia		
		3.180	RMDF Zola, Russia		
		3.190	YDK2 Semarang, Netherl. India, (B)	3.495	SGA Lwow, Poland
		3.190	RMDQ Amzar, Russia	3.495	--- Airway Stations Russia
		3.190	RENI Tchimkent, Russia	3.495	RLXS Saratov, Russia
		3.190	W7XAG Portable, USA	3.500	to
		3.195	RMDM Mogotcha, Russia	4.000	Amateurs,
		3.200	YDL5 Djokjakarta, Nethrl. India, (B)	3.505	RHCU Leningrad, Russia
		3.210	YDQ4 Malang, Netherland India, (B)	3.510	RKNX Dehalsveo, Russia
		3.235	W7XAG Portable, USA	3.510	RKLA Kramatorsk, Russia
		3.240	RMAY Troitse Zarubino, Russia	3.515	RTU Dolgoprudnaia, Russia
		3.240	EDP Palma de Mallorca, Spain	3.520	RFAO Moscow, Russia
		3.240	ED0 Madrid, Spain	3.520	SGZ Warsaw, Poland
		3.240	EDR2 Madrid, Spain	3.530	TFR Flatey a Bredafirdi, Iceland
		3.250	YDH5 Garoet, Netherland India, (B)	3.530	TFP Papey, Iceland
		3.256	--- Experimental, Canada	3.540	--- Airways Stations, Russia
		3.265	W7XAG Portable, USA	3.543	CR7AA Lourenco Marques, Mozambique, (B)
		3.270	YDK4 Mageland, Netherl. India, (B)	3.550	REIB Alma-Ata, Russia
		3.275	RMAS Tafouin, Russia	3.550	RFAW Moscow, Russia
		3.295	W7XAG Portable, USA	3.550	REJB Sergiopol, Russia
		3.310	YDH4 Bandoeng, Netherl. India, (B)	3.550	REJA Taldy-Kourgon, Russia
		3.310	RIAC Penza, Russia	3.555	RRV Vitebsk, Russia
		3.330	LPG General Pacheco, Argentina	3.560	RPOK Korosten, Russia
		3.330	YDV2 Bandjermasin, Neth. India, (B)	3.565	RRV Vitebsk, Russia
		3.332	RRRR Tashkent, Russia	3.570	RGAP Gorki, Russia
		3.332	CFD Kenora, Ont., Canada	3.570	RGLG Mezen, Russia
		3.333	OGH Elmholm, Finland	3.570	RCRI Nakhitchevan, Russia
		3.333	OGF Pagarholm, Finland	3.570	RRV Vitebsk, Russia
		3.333	OFL Haapasaaari, Finland	3.580	RLW Artemovsk, Russia
		3.333	OHN Hango, Finland	3.580	RMPB Madrouckent, Russia
		3.333	OGH Helsingfors, Finland	3.580	RIU Verkhoiansk, Russia
		3.333	OHH Helsingfors, Finland	3.585	RHCC Khibinogorsk, Russia
		3.333	OHH Koivisto, Finland	3.590	REX Indigo-Boukhta, Russia
		3.333	OFM Kotka, Finland	3.600	RUY Pervomaisk, Russia
		3.333	OFQ Lavansaari, Finland	3.600	RPG2 Groumont Siti, Russia
		3.333	OFY Mariabanin, Finland	3.600	RKNE Kharkov, Russia
		3.333	OFW Pirtisaari, Finland	3.600	RCND Neval, Russia
		3.333	OFX Porkkala, Kallbada, Finland	3.600	RJCC Soerdlovsk, Russia
		3.333	OFV Porkkala, Ronnskar, Finland	3.610	RJRV Kozlov, Russia
		3.333	OGI Saggo, Finland	3.610	RKLW Kramatorsk, Russia
		3.333	OFS Soiskari, Finland	3.620	DOA Doerberitz, Germany
		3.333	OFN Suursaari, Finland	3.620	RCAD Minsk, Russia
		3.333	OFI Tanimo, Finland	3.620	RGX Minsk, Russia
		3.333	OFO Tytarsaari, Finland	3.620	RIAU Samara, Russia
		3.333	OHT Uto, Finland		
		3.333	OGJ Vaasa, Finland		

B=Broadcasting; X=Experimental.

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
3.630	RFF Kharkov, Russia	4.110	HCJB Quito, Ecuador, (B)	4.490	RLBY Kirensk, Russia
3.630	RENC Temir, Russia	4.110	RELO Boukhta, Bertys, Russia	4.490	RKOR Krasnyi Loutch, Russia
3.640	RGFW Viatka, Russia	4.110	RENA Bourondal, Russia	4.490	RENC Temir, Russia
3.640	RKOV Grichino, Russia	4.110	RKNX Debal'tsevo, Russia	4.500	RELB Boukhta Bertys, Russia
3.640	RKME Kharkov, Russia	4.110	RISQ Novosibirsk, Russia	4.500	RELO Boukhta Bertys, Russia
3.640	RCTS Mamadych, Russia	4.130	RTU Dolgoproudnaia, Russia	4.500	---- Naval Stations, Germany
3.640	RIBC Penza, Russia	4.130	DAF Norddeich, Germany	4.505	CZP Claydon Bay, B. C., Canada
3.650	RENT Gouriev, Russia	4.135	W7XAQ Portable, USA	4.505	CGO Ocean Falls, B. C., Canada
3.650	RKPA Nikolaev, Russia	4.140	RELW Karalinsk, Russia	4.505	CZO Prince George, B. C., Canada
3.650	RMWA Tashkent, Russia	4.140	RELX Djarkent, Russia	4.510	VPN Nassau, Bahamas
3.658	RFAJ Moscow, Russia	4.140	RJCU Magnetigorsk, Russia	4.510	RKOA Berditchev, Russia
3.660	RKOB Bobrinskaia, Russia	4.150	SGZ Warsaw, Poland	4.512	ZFS Nassau, Bahamas
3.660	---- Konigs Wusterhausen, Ger.	4.150	REIB Alma Ata, Russia	4.520	RCNO Briansk, Russia
3.670	RKKN Kharkov, Russia	4.150	RLEN Nijne Oudinsk, Russia	4.535	WDG Rocky Point, N. Y., USA
3.670	RHIY Tatsinskaia, Russia	4.150	RMCC Koukhlovo, Russia	4.540	WIR Rocky Point, N. Y., USA
3.680	RJAJ Moscow, Russia	4.150	REJB Sergiopol, Russia	4.540	RMXB Kokand, Russia
3.685	RAJ Sovgavan, Russia	4.150	REJA Tandy-Kourgan, Russia	4.545	RFAJ Moscow, Russia
3.690	REAS Chouia, Russia	4.150	RLEV Tchita, Russia	4.545	WDW New Brunswick, N. J., USA
3.690	RKNC Kharkov, Russia	4.150	RLEK Verkhneoudinsk, Russia	4.550	KIKC Bolinas, Calif., USA
3.690	RCRJ Lenkoran, Russia	4.160	SOB Bialystok, Poland	4.550	WAD Rocky Point, N. Y., USA
3.700	VK3LR Lyndhurst, Victoria, Australia, (B)	4.165	LOB Puerto Aguirre, Argentine	4.555	WDN Rocky Point, N. Y., USA
3.700	VK3XX Lyndhurst, Victoria, Australia, (B)	4.165	SGZ Warsaw, Poland	4.570	RIBJ Kachirinsk, Russia
3.700	JPY Tobata, Japan	4.170	SGA Lwow, Poland	4.570	RKQZ Kadrevka, Russia
3.710	RIBB Abdoulinskoe, Russia	4.174	---- British ships	4.600	HC2ET Apartado 249, Guayaquil, Ecuador, (B)
3.710	RIAZ Andreoskoe, Russia	4.177	---- Ship telephone	4.600	RKON Gorlovka, Russia
3.710	RGAQ Ijevsk, Russia	4.190	RJXC Makhatch-Kala, Russia	4.615	RLXI Stalingrad, Russia
3.710	RFCJ Kachira, Russia	4.190	RMAT Vladivostok, Russia	4.615	RJRS Voronei, Russia
3.710	RKND Kharkov, Russia	4.272	WOY Lawrenceville, N. J., USA	4.625	ZGF Kuantan, Federtd, Malay States
3.720	RCNQ Novosokolniki, Russia	4.272	WOO Ocean Gate, N. J., USA	4.670	RIBK Rouzaevka, Russia
3.720	RHJS Orist Labinskaia, Russia	4.273	RV15 Khabarovsk, Russia, (B)	4.687	RFCO Moscow, Russia
3.720	RIBE Samara, Russia	4.280	RFAK Koutchino, Russia	4.700	RCRB Erivan, Russia
3.730	RKNN Kharkov, Russia			4.710	RIAL Syzran, Russia
3.730	RCGA Koutais, Russia			4.710	RENI Tchmekent, Russia
3.740	RKOU Kharkov, Russia			4.710	RKLM Zaporozje, Russia
3.740	RJEJ Sverdloosk, Russia			4.715	EDP Palma de Mallorca, Spain
	<b>80 TO 70 METERS</b>			4.720	RFAJ Moscow, Russia
3.750	F8KR Constantine, Algeria, (B)	4.283	---- Ship telephone	4.730	RKMD Cheptovka, Russia
3.750	VK3LR Lyndhurst, Victoria, Australia, (B)	4.286	RKMF Jitomir, Russia	4.740	RCNP Smolensk, Russia
3.750	VK3XX Lyndhurst, Victoria, Australia, (B)	4.286	RKPL Jitomir, Russia	4.740	RIBF Syzran, Russia
3.750	I2RO Rome, Italy, (B)	4.286	RCNF Smolensk, Russia	4.750	RLGL Kabansk, Russia
3.750	RENY Dozorr, Russia	4.295	WTDW St. Croix, Virgin Islands	4.753	WOY Lawrenceville, N. J., USA
3.750	REJQ Ganiouchikino, Russia	4.295	WTDV St. John, Virgin Islands	4.753	WOO Ocean Gate, N. J., USA
3.750	REBO Iavnovo, Russia	4.300	WTDV St. Thomas, Virgin Islands	4.761	RMFN Grodekovo, Russia
3.750	RFCV Kalinin, Russia	4.300	---- Aeronautical, Europe	4.775	CFD Kenora, Ont., Canada
3.750	CTICT Lisbon, Portugal, (B)	4.300	RKPE Liman, Russia	4.785	CZA Drummondville, P. Q., Canada
3.760	RENU Aktinbinsk, Russia	4.300	RKDM Medveja Gora, Russia	4.790	RKMI Krivoi Rog, Russia
3.760	---- Konigs Wusterhausen, Germany	4.300	RKDO Parandovo, Russia	4.795	VEBY London, Ont., Canada, (B)
3.760	RMWP Samarkand, Russia	4.300	RHIK Rostov on Don, Russia	4.800	RKMH Khrstinovka, Russia
3.760	RKOH Znamenska, Russia	4.305	RGFK Kanavino, Russia	4.800	RCNQ Novosokolniki, Russia
3.769	ZEZ Broken Hill, Northern Rhodesia	4.305	RKOG Vapniarka, Russia	4.810	CGP Prince Rupert, B. C., Canada
3.769	ZDH Sameson, Northern Rhodesia	4.310	RMDP Erefei Pavlovitch, Russia	4.810	YDEZ Solo, Netherland India, (B)
3.769	ZDA Livingston, Northern Rhodesia	4.310	RMDT Staibo, Russia	4.810	RKMG Vinnitsa, Russia
3.769	ZDI Mongu-Lealui, North. Rhodesia	4.310	RLEC Tshita, Russia	4.820	PRO Olinda, Brazil
3.769	ZFF Mpika, Northern Rhodesia	4.315	RGFK Kanavino, Russia	4.820	REUK Karsakpai, Russia
3.770	RRR Briansk, Russia	4.315	RKOG Vapniarka, Russia	4.820	GDW Rugby, United Kingdom
3.780	RLW Artemovsk, Russia	4.320	G6RX Hillmorton, United King., (X)	4.838	RJRV Kozlov, Russia
3.780	RLX Artemovsk, Russia	4.320	GDB Rugby, United Kingdom, (B)	4.839	RNZ Petropavlovsk, Russia
3.780	RELO Boukhta Bertys, Russia	4.330	RKPL Rovenki, Russia	4.840	GDW Rugby, United Kingdom
3.790	RPNA Kharkov, Russia	4.355	IAC Coltano, Italy, (X)	4.850	RELO Boukhta Bertys, Russia
3.800	RKOL Krementchoug, Russia	4.355	RKOP Kiev, Russia	4.850	RKMF Jitomir, Russia
3.800	RMPP Stalinabad, Russia	4.350	PROF Proskurov, Russia	4.860	CGT Campbell River, B. C., Canada
3.810	RKPP Ouman, Russia	4.360	RIMK Topki, Russia	4.860	RKMM Konstantinovka, Russia
3.820	RMSE Karabougaz, Russia	4.360	RMDV Ekimtchan, Russia	4.860	RKF Moscow, Russia
3.830	---- Bykovo, Russia	4.360	RMDW Moscow, Russia	4.860	RKFC Sverdloosk, Russia
3.830	RHAB Leningrad, Russia	4.375	RUF Moscow, Russia	4.875	RKF Moscow, Russia
3.830	RIAL Syzran, Russia	4.380	RMDW Damboutki, Russia	4.880	RKME Kharkov, Russia
3.830	RCQY Tiflis, Russia	4.385	RUF Moscow, Russia	4.895	CEC La Granja, Chile
3.840	RKOD Kazatin, Russia	4.390	RENG Atehi Sai, Russia	4.900	RKMN Sorokino, Russia
3.850	RKMC Odessa, Russia	4.400	RMDX Komomolsk, Russia	4.910	RENJ Karsakpai, Russia
3.850	RGLC Syktykvar, Russia	4.400	DAF Norddeich, Germany	4.920	LCL Jelo, Norway, (X)
3.860	RKLO Sorokino, Russia	4.400	RFAJ Moscow, Russia	4.930	RFAJ Moscow, Russia
3.860	RKPO Vorochilovsk, Russia	4.410	RFAY Moscow, Russia	4.930	RIBE Samara, Russia
3.870	RW77 Moscow, Russia	4.410	REIK Petropavlovsk, Russia	4.940	RKMK Zouevka, Russia
3.880	RIBA Bouzoulousk, Russia	4.412	ZGC Kuala Lumpur, Federated Malay States	4.950	REIL Koonrad, Russia
3.880	RKLQ Dnepropetrovsk, Russia	4.412	CNR Rabat, Morocco	4.960	RKJM Zaporozje, Russia
3.880	RCBA Jobin, Russia	4.420	RFAJ Moscow, Russia	4.960	RHIE Elizavetopolskaia, Russia
3.880	RENV Karaton, Russia	4.430	RKLS Tchistiakovo, Russia	4.970	RCND Novel, Russia
3.885	RCRH Batoum, Russia	4.430	RLED Chilka, Russia	4.975	RLY Kharkov, Russia
3.890	RLY Kharkov, Russia	4.430	DOA Doberitz, Germany	4.980	GBC Rugby, United Kingdom
3.900	RFAJ Moscow, Russia	4.430	RMDH Ouroucha, Russia	4.988	RMWP Samarkand, Russia
3.910	RLEQ Tchita, Russia	4.440	RMDJ Tynda, Russia	4.988	---- Airplanes, USA
3.910	RLEV Verkhne Oudinsk, Russia	4.440	RLEZ Zilovo, Russia		
3.910	RMCC Koukhlovo, Russia	4.440	GBC Rugby, United Kingdom		
3.920	RKLA Kramatorsk, Russia	4.445	RBX Moscow, Russia		
3.920	RFAO Moscow, Russia	4.445	RMXC Tchinion, Russia		
3.950	RHAX Leningrad, Russia	4.445	WUM Tucson, Ariz., USA		
3.998	HCJB Quito, Ecuador, (B)	4.450	RRY Moscow, Russia		
4.000	ZGE Kuala Lumpur, Federated Malay States, (B)	4.450	RKOS Routhenkovo, Russia		
4.000	REJM Karaganda, Russia	4.455	RRY Moscow, Russia		
4.002	CT2AJ Ponta Delgada, Sao Miguel, Azores, (B)	4.460	RKOT Dnepropetrovsk, Russia		
4.010	RFAU Bykovo, Russia	4.460	RKOW Kharkov, Russia		
4.030	RFAW Moscow, Russia	4.460	RKOI Kiev, Russia		
4.050	DAS Rugen, Germany	4.460	RKOE Odessa, Russia		
4.054	CNW Tangier, Morocco	4.460	RKQJ Stalino, Russia		
4.060	RGKX Archangel, Russia	4.460	RHIZ Taganrog, Russia		
4.080	RFAO Moscow, Russia	4.465	RKQ4 Vinnitsa, Russia		
4.097	WND Hialeah, Fla., USA	4.470	CGA4 Drummondville, P. Q., Canada		
4.100	LCL Jelo, Norway, (X)	4.470	YID Baghdad, Iraq, (B)		
		4.470	YDB Soerabaya, Netherl. India, (B)		
		4.470	RBT Sannarov, Russia		
		4.475	RRKNN Kharkov, Russia		
		4.477	RMGI Khabarovsk, Russia		
		4.480	RKMB Gorlovka, Russia		
		4.490	RMXA Kim, Russia		
				5.000	FY3 Lyon, T.S.F., France
				5.000	FHH3 Pointe-Noire, French Equatorial Africa
				5.000	RCRI Nakhitchevan, Arakse, Russia
				5.000	RLXI Stalingrad, Russia
				5.000	RCNA Viazna, Russia
				5.000	RJRS Voronei, Russia
				5.015	KUF Manila, Philippine Is.
				5.023	ICQ Naples, Italy
				5.025	ZFA Hamilton, Bermuda
				5.030	REJJ Koustanaï, Russia
				5.040	RIR Tiflis, Russia
				5.050	VRT Hamilton, Bermuda
				5.050	RMLD Mouinak, Russia
				5.058	TFI Reykjavik, Iceland
				5.060	EDO Madrid, Spain
				5.060	EDR2 Madrid, Spain
				5.060	EDS Madrid, Spain
				5.070	RMLC Tourtkoul, Russia

B=Broadcasting; X=Experimental.

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
5.077	WCN Lawrenceville, N. J., USA	5.660	HJ5ABC Cali, Colombia, (B)	5.990	XEBT Mexico City, Mex., P. O. Box 79-44, (B)
5.085	RIO Pakou, Russia	5.660	2RO Rome, Italy	<b>50 TO 45 METERS</b>	
5.085	RMBK Oust Bolchoretzk, Russia	5.660	VQR Nairobi, Kenya	5.995	WXE Anchorage, Alaska
5.090	REJV Semipalatinsk, Russia	5.660	RKLP Kovenki, Russia	5.995	WXH Ketchikan, Alaska
5.100	RCTQ Kazan, Russia	5.670	RKON Gorlovka, Russia	5.995	RPT Tashkent, Russia
5.105	KEC Bolinas, Calif., USA	5.680	RKOF Proskourov, Russia	6.000	OSF Pannu, Belgian Congo
5.120	REIQ Pribalkhaelstroi, Russia	5.692	FIQA Tananarive, Madagascar	6.000	XGOX Nanking, China
5.130	ZGD Kuantan, Federatd Malay States	5.700	OSG Luluabourg, Belgian Congo	6.000	VSZAB Kuala Lumpur, Fed. Malay States
5.140	EDR3 El Tablero, Canary Is.	5.700	RKLR Lisitchansk, Russia	6.000	FIQA Tananarive, Madagascar
5.140	PMY Bandoeng, Netherl. India, (B)	5.705	ZC2PC Haifa, Palestine	6.000	ZL3ZC Christchurch, N. Z.
5.140	PJEJ Sverdlovsk, Russia	5.705	ZC3PC Mafrak, Transj., Palestine	6.000	---- St. Denis, Reunion
5.145	OKIMPT Prague, Czechoslovakia, (X)	5.705	ZC4PC Pump Station 114, Transj., Pal.	6.000	---- Bucharest, Rumania
5.200	RKLV Kramatorsk, Russia	5.710	HCJB Quito, Ecuador, (B)	6.000	RPDM Medveja Gora, Russia
5.210	REIP Vozrojdenie Ostroy, Russia	5.710	JDZ Dairen, Manchuria	6.000	RV59 Moscow, Russia
5.215	RCTP Tchistopol, Russia	5.714	ZGA Kuala Lumpur, Fed. Malay States	6.000	RKDO Parandovo, Russia
5.220	ZFC Hamilton, Bermuda	5.715	GIK Dollis Hill, United Kingdom	6.000	RKDN Segja, Russia
5.220	RELO Boukhta Bertys, Russia	5.725	OXR Skamlebak, Denmark	6.000	EAJ25 Barcelona, Spain
5.222	ZEZ Broken Hill, Northern Rhodesia	5.725	I2RO Rome, Italy, (B)	6.005	VE9DN Drummondville, P. Q., Canada
5.222	ZDH Fort Jameson, North. Rhodesia	5.730	JVV Tokyo, Japan	6.005	VE9DR Drummondville, P. Q., Canada
5.222	ZDA Livingstone, Northern Rhodesia	5.740	RKLS Tchistiakovo, Russia	6.005	HJ3ABH Bogota, Colombia
5.222	ZDI Mongu-Lealui, North. Rhodesia	5.750	RGAA Ijevsk, Russia	6.005	CMCI Habana, Cuba
5.222	ZDF Mpika, Northern Rhodesia	5.750	EDR2 Madrid, Spain	6.006	HJ1ABF Santa Marta, Colombia
5.250	RIBC Penza, Russia	5.750	EDS Madrid, Spain	6.010	COJ Habana, Cuba, (B)
5.255	DJB Zeesen, Germany, (B)	5.760	RLX Artemovsk, Russia	6.010	---- Cairo, Egypt, (B)
5.260	WQN Rocky Point, N. Y., USA	5.760	OQG Libenge, Belgian Congo	6.010	XEBT Mexico City, Mexico, (B)
5.263	RMFN Grodekovo, Russia	5.766	CFU Rossland, B. C., Canada	6.012	ZHI Singapore, Straits Settlements, (B)
5.265	CEC La Granja, Chile	5.766	XAM Merida, Yucatan, Mexico	6.020	CGN Macao, China
5.280	PWO Netherov, Armacao, Brazil	5.769	RELB Boukhta Bertys, Russia	6.020	DJC Zeesen, Germany, (B)
5.280	RGAP Gorkyi, Russia	5.769	RELD Boukhta Bertys, Russia	6.020	PGD Kootwijk, Netherlands, (B)
5.290	RUY Pervomaisk, Russia	5.769	RMSX Merv, Russia	6.023	XEW Mexico City, Mexico, (B)
5.300	ZFO Cat Cay, Bahamas	5.769	RELZ Spasskyi Zavod, Russia	6.025	PGD Kootwijk, Netherlands, (B)
5.310	RIAC Penza, Russia	5.780	OAX4D P.O. Box 853, Lima, Peru, (B)	6.030	VE9CA Calgary, Alta., Canada, (B)
5.345	EDR4 Palma de Mallorca, Spain	5.780	RKOS Routhenkovo, Russia	6.030	OQT Buta, Belgian Congo, (B)
5.350	RELT Bouli-Tube, Russia	5.780	H11J San Pedro de Macoris, Dom. Rep. (B)	6.030	PGD Kootwijk, Netherlands, (B)
5.350	RKOK Korosten, Russia	5.790	RV50 Moscow, Russia, (B)	6.030	HJ5AB Panama, Panama
5.357	ZGF Kuantan, Federatd Malay States	5.790	JVU Tokyo, Japan	6.035	HJ4ABI Medellin, Colombia, (X)
5.357	RMPB Madrouckent, Russia	5.800	VK3XX Lyndhurst, Vic., Australia	6.035	YNA Managua, Nicaragua, (B)
5.370	RLW Artemovsk, Russia	5.800	VK3LR Lyndhurst, Vic., Australia, (B)	6.040	W1XAL Boston, Mass., USA, (B)
5.375	RSB Stalinsk, Russia	5.800	RKMK Zouevka, Russia	6.040	W4XB Miami Beach, Fla., USA, (B)
5.380	LPG2 General Pacheco, Argentina	5.805	OSE Kanda Kanda, Belgian Congo	6.040	CMCI Habana, Cuba, (B)
5.390	RKOU Kharkov, Russia	5.805	CSN Rossland, B. C., Canada	6.040	RILD Omsk, Russia
5.400	HAT Szekesfehervar, Hungary	5.810	RKOR Krasnyi-Loutch, Russia	6.040	RLEC Tchita, Russia
5.400	RFAG Moscow, Russia	5.810	CGI Isle Maligne, P. Q., Canada	6.042	HJ1ABG Barranquilla, Colombia, (B)
5.405	CGT Campbell River, B. C., Canada	5.810	RFAN Moscow, Russia	6.045	HJ3ABI Bogota, Colo., (B)
5.410	---- Coast Stations, Japan	5.810	CGR Quebec, P. Q., Canada	6.045	EAQ Aranjuez, Spain, (B)
5.410	RKLO Sorokino, Russia	5.813	FZN6 Noumea, New Caledonia	6.050	VE9CF Halifax, N. S., Canada, (B)
5.415	IAF Piumicino, Ital.	5.820	CEC La Granja, Chile	6.050	RIMK Topki, Russia
5.420	CGE Calgary, Alta., Canada	5.820	RKML Krinditchovka, Russia	6.050	GSA Daventry, United Kingdom, (B)
5.420	JFY Tobata, Japan	5.825	TIGPH San Jose, Costa Rica, (B)	6.060	W8XAL Mason, Ohio, USA, (B)
5.440	RSN Sverdlovsk, Russia	5.830	JMP Shinkyu, Japan	6.060	W3XAU Newton Sq., Pa., USA, (B)
5.450	ZGC Kuala Lumpur Federatd Malay States	5.830	RPB Borensburg, Russia	6.060	OSC Boende, Belgian Congo
5.450	RKLG Dnepropetrovsk, Russia	5.830	CWD Cerrito, Uruguay	6.060	CMCI Habana, Cuba, (B)
5.454	RHJD Chakhty, Russia	5.840	REKD Alma-Ata, Russia	6.060	OXY Skamlebak, Denmark, (B)
5.455	VQR Nairobi, Kenya	5.840	RKMM Konstantinovka, Russia	6.060	HIX Santo Domingo, Dom. Rep., (B)
5.455	RLXI Stalingrad, Russia	5.840	RHIF Grozni, Russia	6.065	I2RO Rome, Italy, (B)
5.460	VIX Wyndham Meazworks, Australia	5.840	RHII Novo Krositanovskoe, Russia	6.060	VQ7LO Nairobi, Kenya, (B)
5.460	RKPL Jitomir, Russia	5.842	RHIF Sterkitchehka, Russia	6.060	RLEE Bouchele, Russia
5.460	RCNF Smolensk, Russia	5.845	FZP4 Papete, Tahiti	6.065	HJ4ABL Manizales, Colombia, (B)
5.460	ZFU Arua, Uganda	5.850	KRO Kahuku, Hawaii	6.070	VE9CS Vancouver, B. C., Canada, (B)
5.470	RKOV Griehino, Russia	5.850	VK3LR Lyndhurst, Vic., Australia, (B)	6.070	OXY Skamlebak, Denmark, (B)
5.490	RPOB Bobrinskia, Russia	5.850	RKQF Kadievka, Russia	6.070	RGFN Chania, Russia
5.490	ROI Sverdlovsk, Russia	5.850	RFAL Moscow, Koutchino, Russia	6.070	EAQ Aranjuez, Spain, (B)
5.495	ZGD Kuantan, Fed. Malay States	5.853	YV5FB Maracaibo, Venezuela	6.072	ZHJ Penang, Malaya, (B)
5.505	RKNN Kharkov, Russia	5.855	WOB Lawrenceville, N. J.	6.072	OER2 Vienna, Austria, (B)
5.510	---- Airplanes, USA	5.855	OQZ Kamina, Belgian Congo	6.072	HJ1ABF Barranquilla, Colombia, (X)
5.515	SPV Warsaw, Poland	5.855	EDR3 El Tablero, Tenerife, Canary Island	6.079	DIM Zees. Germany, (B)
5.520	PRP Olinda, Brazil	5.857	XDA Chapultepec, Mexico	6.080	W9XAA Chicago, Ill., USA
5.520	RMAT Vladivostok, Russia	5.860	XDA Chapultepec, Mexico	6.080	CP5 LaPaz, Bolivia, (B)
5.530	RINA Novosibirsk, Russia	5.860	RPMM Sorokini, Russia	6.080	TIRA Cartago, Costa Rica, (B)
5.540	CFD Kenora, Ont., Canada	5.870	RKMB Gorlovka, Russia	6.080	VE9EH Charlottetown, P.E.I., (B)
5.542	RUU Detskoe Selo, Russia	5.870	RRRR Tashkent, Russia	6.080	RFCK Moscow, Russia
5.547	RUU Detskoe Selo, Russia	5.880	REKD Alma-Ata, Russia	6.085	I2RO Rome, Italy, (B)
5.552	RUU Detskoe Selo, Russia	5.880	RKNY Kharkov, Russia	6.090	VE9BJ St. John, N.B., Canada, (B)
5.555	RUU Detskoe Selo, Russia	5.880	RKMO Verkhne. Oudinsk, Russia	6.090	HJ4ARC Pereira, Colombia, (B)
5.555	LPD General Pacheco, Argentina	5.890	JIC Taihoku, Taiwan, Japan	6.095	VE9GW Bowmanville, Ont., Canada, (B)
5.555	LPG3 General Pacheco, Argentina	5.890	RKW Osmk, Russia	6.097	JB Johannesburg, Un. of S. A., (B)
5.555	I2RO Rome, Italy, (B)	5.892	RRRZ Sverdlovsk, Russia	6.098	HJ1ABD Cartagena, Colombia, (B)
5.556	OXM Scoresbysund, Greenland	5.895	OQX Kabinda, Belgian Congo	6.100	W3XAL Bound Brook, N. J., USA, (B)
5.556	OYI Scoresbysund, Greenland	5.900	CMBI Habana, Cuba, (B)	6.100	W9XF Downers Grove, Ill., USA, (B)
5.560	RKOH Znamenka, Russia	5.900	RMWA Tashkent, Russia	6.100	RMDQ Amazar, Russia
5.570	---- Airplanes, USA	5.900	VRR Stony Hill, Jamaica	6.100	RMDK Ksenievskia, Russia
5.570	OQP Astrida, Belgian Congo	5.915	HJ4ABE Medellin, Colombia	6.100	RFCl Riazan, Russia
5.580	RKOL Kremenchoug, Russia	5.930	---- Airplanes, USA	6.105	HJ4ABB Manizales, Colombia, (B)
5.600	---- Airplanes, Europe	5.940	HJ1ABJ Santa Marta, Colo., (B)	6.110	VE9CG Calgary, Alta., Canada
5.603	---- Airplanes, USA	5.950	OSI Gule, Belgian Congo	6.110	GSL Daventry, England, B. B. C., Broadcast. Hse., Lon., E., (B)
5.610	FFK St. Nazaire, France	5.950	TGX Guatemala City, Guat., (B)	6.110	VE9HX Halifax, N. S., Canada, (B)
5.610	I2RO Rome, Italy	5.952	FZF6 Fort de France Martinique	6.110	HJ4ABB Medellin, Colombia, (X)
5.610	RELO Boukhta Bertys, Russia	5.953	HIX Santo Domingo, Dom. Rep., (B)	6.110	VUC Calcutta, India, (B)
5.615	OQY Niagara, Belgian Congo	5.955	RRRZ Sverdlovsk, Russia	6.110	EAQ Aranjuez, Spain, (B)
5.620	RKOD Kazatin, Russia	5.969	HVJ Vatican City, (B)	6.112	YV2RC Caracas, Venezuela
5.630	RGFW Viatka, Russia	5.970	HJ3ABH Bogota, Colo., AparTado 565, (B)	6.115	---- Warsaw, Poland, (B)
5.635	DAS Rungen, Germany	5.975	HJ2ABC Cucuta, Colombia, (B)	6.116	HJ1ABE Cartagena, Colombia, (B)
5.640	RGFK Kanavino, Russia	5.980	HIX Santo Domingo, Dominican Rep. (B)	6.120	NAA Washington, D. C., USA, (B)
5.640	RKOG Vapniarka, Russia	5.980	XECW Calle del Bajio 120, Mexico City, Mex., (B)	6.120	W2XE Wayne, N. J., USA, (B)
5.650	OQM Lusambo, Belgian Congo	5.990	FZK6 Dakar, Senegal	6.120	OQU Basankusu, Belgian Congo, (B)
5.653	WNEY Baltimore, Md., USA				
5.660	---- Airplanes, USA				
5.660	CFD Kenora, Ont., Canada				
5.660	XCAJ Shanghai, China				
5.660	OZZ Thule, Greenland				

B=Broadcasting; X=Experimental.

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
6.120	<b>YDA</b> Bandoeng, Netherl. India, (B)	6.593	<b>ZEB</b> Bulawayo, Southern Rhodesia	6.910	<b>RJBD</b> Sverdlovsk, Russia
6.120	<b>RKOM</b> Dnepropetrovsk, Russia	6.593	<b>ZEA</b> Salisbury, Southern Rhodesia	6.915	<b>ZCI</b> Cape D'Aguilar, Hong Kong
6.128	<b>HJ1ABH</b> Cienega, Colombia, (X)	6.593	<b>ZTG</b> Germiston, Union of S. A.	6.920	<b>RFAX</b> Moscow, Russia
6.128	<b>YV11RMO</b> Maracaibo, Venezuela	6.600	<b>RJTL</b> Dmitriev-Igovsky, Russia	6.930	<b>RENU</b> Aktubinsk, Russia
6.128	<b>LKJ1</b> Jeloj, Norway, (B)	6.600	<b>RKXLX</b> Odessa, Russia	6.930	<b>RGKX</b> Archangel, Russia
6.130	<b>VE9BA</b> Montreal, P. Q., Canada, (B)	6.600	<b>OQW</b> Banningville, Belian Congo	6.930	<b>RLEV</b> Verkhne-Udinsk, Russia
6.130	<b>XETE</b> Mexico City, Mexico, (B)	6.615	<b>HI4D</b> Santo Domingo, Dominican Rep., (B)	6.940	<b>RFAY</b> Bykovo, Russia
6.135	<b>HJ1ABC</b> Quidbo, Colombia, (X)	6.610	<b>RV72</b> Moscow, Russia, (B)	6.950	<b>RLXS</b> Saratov, Russia
6.135	<b>ZGE</b> Kuala Lumpur, Fed. Malay Sts., (B)	6.610	<b>CWE</b> Cerrito, Montevideo, Uruguay	6.958	<b>WEO</b> New Brunswick, N. J., USA
6.135	<b>YID</b> Baghdad, Iraq, (B)	6.620	<b>PRADO</b> Riobamba, Ecuador, (B)	6.960	<b>OTS</b> Stanleyville, Belgian Congo
6.135	<b>RKK</b> Moscow, Russia	6.630	----	6.965	<b>KZGG</b> Cebu, Philippine Islands
6.140	<b>W8XK</b> Saxonburg, Pa., USA, (B)	6.635	<b>OTC</b> Coquilhatville, Belgian Congo	6.966	<b>EDO</b> Madrid, Spain
6.140	<b>VK3LR</b> Lyndhurst, Vic., Australia, (B)	6.650	<b>IAC</b> Coltano, Italy, (X)	6.970	<b>EDR2</b> Madrid, Spain
6.140	<b>KZRM</b> Manila, P. I., (B)	6.650	----	6.976	<b>EA4AQ</b> Madrid, Spain, (B)
6.145	----	6.650	<b>XFCD</b> Mexico City, Mexico, (B)	6.977	----
6.150	<b>CJRO</b> Winnipeg, Manitoba, Can., (B)	6.650	<b>HC2RL</b> P.O. Box 759, Guayaquil, Ecuador, S.A., (B)	6.977	<b>RNZ</b> Petropavlovsk, Russia
6.150	<b>HJ5ABC</b> Cali, Colombia, (B)	6.660	<b>TGW</b> Guatemala City, Guatemala, (B)	6.980	<b>I2RO</b> Rome, Italy
6.150	<b>HJ2ABA</b> Tunja, Colombia, (B)	6.660	<b>TIEP</b> La-Voz Del Tropico, San Jose, Costa Rica, (B)	6.980	<b>VQR</b> Nairobi, Kenya
6.150	<b>RKOO</b> Odessa, Russia			6.980	<b>KZGH</b> Iloilo, Philippine Islands
6.150	<b>CSL</b> Lisbon, Portugal, (B)			6.980	<b>RKNZ</b> Kharkov, Russia
6.150	<b>YV3RC</b> Caracas, Venezuela			6.980	<b>RFNO</b> Moscow, Russia
6.155	<b>CO9GC</b> Grau & Cameneros Labs., Box 137, Santiago, Cuba, (B)	6.664	<b>YNCRG</b> Granada, Nicaragua, (B)	6.980	<b>EAR110</b> Madrid, Spain, (B)
6.160	<b>I2RO</b> Rome, Italy	6.665	<b>LPG4</b> General Pacheco, Argentina	6.990	<b>JVS</b> Tokyo, Japan
6.170	<b>CFD</b> Kenora, Ont., Canada	6.665	<b>YVQ</b> Maracay, Venezuela	6.990	<b>LCL</b> Jeloj, Norway
6.170	<b>CFG</b> Pickle Lake, Ont., Canada	6.672	<b>IRT</b> Rome, Italy	7.000	<b>HJ5ABE</b> Cali, Colombia, (B)
6.170	<b>CFJ</b> Red Lake, Ont., Canada	6.674	<b>HBQ</b> Prangins, Switzerland		
6.170	<b>CFB</b> Sioux Lookout, Ont., Canada	6.675	<b>FZ14</b> Brazzaville, Fr. Equa., Africa	7.300	Amateurs,
6.175	<b>OND</b> Banana, Belgian Congo	6.677	<b>DGP</b> Nauen, Germany, (X)	7.010	<b>RHCU</b> Leningrad, Russia
6.175	<b>FTX</b> St. Assise, France	6.680	<b>OZS</b> Skanlebak, Denmark	7.020	<b>RFBL</b> Moscow, Russia
6.180	<b>HJ3ABF</b> Bogota, Colombia, (B)	6.685	<b>ZGA</b> Kuala Lumpur, Fed. Malay States	7.020	<b>EAR125</b> Madrid, Spain, (B)
6.180	<b>TGW</b> Guatemala City, Guatemala, (B)	6.685	<b>YNLF</b> Managua, Nicaragua, (B)	7.030	<b>HRP1</b> San Pedro Sula, Honduras, (B)
6.180	<b>RKOP</b> Kiev, Russia	6.685	<b>CFA</b> Drummondville, P. Q., Canada	7.050	----
6.180	<b>REIK</b> Petropavlovsk, Russia	6.690	<b>VQR</b> Nairobi, Kenya	7.050	<b>RGFO</b> Arzamas, Russia
6.185	<b>HI1A</b> P.O. Box 423, Santiago, Dominican Rep., (B)	6.690	<b>ZDB</b> Broken Hill, Northern Rhodesia	7.060	<b>RFBO</b> Mojaisk, Russia
6.190	<b>RIPV</b> Barnaoul, Russia	6.690	<b>ZDG</b> Mpika, Northern Rhodesia	7.060	<b>RENB</b> Boukhta Bertys, Russia
6.190	<b>RRRR</b> Tashkent, Russia	6.690	<b>ZEB</b> Bulawayo, Southern Rhodesia	7.060	<b>RENA</b> Bouroundal, Russia
6.198	<b>CT1GO</b> Portuguese Radio Club, Parede, Portugal, (B)	6.690	<b>ZEA</b> Salisbury, Southern Rhodesia	7.070	<b>RHAX</b> Leningrad, Russia
6.200	<b>RMDP</b> Erofei Pavlovitch, Russia	6.690	<b>ZTG</b> Germiston, Union of S. Africa	7.080	<b>LSUCZ</b> Buenos Aires, Argentina, (B)
6.200	<b>RMDM</b> Mogotcha, Russia	6.690	<b>ZTF</b> Maitland Cape, Un. of S. Africa	7.080	<b>RTU</b> Dolgoprudnaia, Russia
6.200	<b>RMWW</b> Tashkent, Russia	6.695	<b>OQI</b> Lisala, Belgian Congo	7.100	<b>HKE</b> Bogota, Colombia, (B)
6.210	<b>HJN</b> Bogota, Colombia, (B)	6.700	<b>RIBF</b> Syzran, Russia	7.100	----
6.230	<b>OAX4B</b> Apartado 1242, Lima, Peru, (B)	6.703	<b>TIK</b> Cartago, Costa Rica	7.160	<b>OA4B</b> Lima, Peru, (B)
6.235	<b>OCN</b> Lima, Peru, (B)	6.707	<b>YNCRG</b> Granada, Nicaragua, (B)	7.170	<b>RELD</b> Boukhta Bertys, Russia
6.240	<b>RMAS</b> Tafounin, Russia	6.718	<b>WDB</b> Rocky Point, N. Y., USA	7.170	<b>RELO</b> Boukhta Bertys, Russia
6.240	<b>RMAY</b> Troitse Zaroubino, Russia	6.718	<b>KBK</b> Manila, P. I.	7.177	<b>CGAA</b> Lobito, Angola, (B)
6.245	<b>OQE</b> Costermansville Belgian Congo	6.733	<b>WDA</b> Rocky Point, N. Y., USA	7.211	<b>EA8AB</b> Tenerife, Canary Islands, (B)
6.250	----	6.738	<b>TIGP</b> San Jose, Costa Rica, (B)	7.220	----
6.250	<b>OCI</b> Lima, Peru	6.745	<b>OQB</b> Bumba, Belgian Congo	7.225	<b>RPK</b> Moscow, Russia
6.250	<b>REIX</b> Akmolinsk, Russia	6.750	<b>JVT</b> Tokyo, Japan	7.230	<b>DOA</b> Doberitz, Germany
6.250	<b>RGAZ</b> Kotelnich, Russia	6.750	<b>RMSE</b> Karabougaz, Russia	7.250	<b>FFF</b> Rome, Italy
6.250	<b>RFAG</b> Moscow, Russia	6.755	<b>WOA</b> Lawrenceville, N. J., USA	7.260	<b>VS1AB</b> Singapore, S. S., (B)
6.250	<b>REIA</b> Ouzialy, Russia	6.755	<b>KZGF</b> Manila, Philippine Islands	7.275	<b>RTZ</b> Irkutsk, Russia
6.250	<b>REIM</b> Ouzounkair, Russia	6.760	<b>CFA2</b> Drummondville, P. Q., Canada	7.300	----
6.250	<b>HJ4ABC</b> Pereira, Col., (B)	6.760	<b>RENJ</b> Karsakpai, Russia	7.310	<b>RFBY</b> Moscow, Russia
6.260	<b>PBB</b> Den Helder, Netherlands	6.770	<b>KZGF</b> Manila, Philippine Islands	7.310	<b>RMWP</b> Samarkand, Russia
6.280	<b>HI1A</b> Santo Domingo, Dom. Rep., (B)	6.775	<b>OQK</b> Aketi, Belgian Congo	7.310	<b>HJ1ABD</b> Cartagena, Colo., (B)
6.285	<b>CZA</b> Drummondville, P. Q., Canada	6.780	<b>RENT</b> Gouriev, Russia	7.320	<b>HJ5ABD</b> Cali, Colombia, (B)
6.300	<b>RCE</b> Leningrad, Russia	6.780	<b>EAH</b> Madrid, Spain	7.320	<b>ZTJ</b> Johannesburg, Un. of S. Africa
6.300	<b>RMBA</b> Preobrajenia, Russia	6.785	<b>OQD</b> Kindu, Belgian Congo	7.330	<b>RKMI</b> Krivoi Rog, Russia (B)
6.320	<b>CFD</b> Kenora, Ont., Canada	6.790	<b>SQB</b> Bialystok, Poland	7.333	<b>DFH</b> Nauen, Germany
6.320	<b>HIZ</b> Santo Domingo, Dominican Rep., (B)	6.790	<b>RIBO</b> Kvarkepo, Russia	7.340	<b>RGLC</b> Syktyvkar, Russia
6.320	<b>OQA</b> Kigoma, Tanganyika	6.792	<b>HAP3</b> Budapest, Hungary	7.345	<b>GDL</b> Rugby, United Kingdom
6.330	----	6.795	<b>SQZ</b> Warsaw, Poland	7.360	<b>ZEZ</b> Broken Hill, Northern Rhodesia
6.335	<b>VE9AP</b> Drummondville, P. Q., Canada, (B)	6.800	----	7.360	<b>ZDH</b> Ft. Jameson, Northern Rhodesia
6.345	<b>OSD</b> Kigali, Belgian Congo, (B)	6.800	<b>EDR3</b> Tablero, Canary Islands	7.360	<b>ZDA</b> Livingstone, Northern Rhodesia
6.375	<b>YV4RC</b> Caracas, Venezuela	6.800	<b>SQA</b> Lwow, Poland	7.360	<b>ZFF</b> Mpika, Northern Rhodesia
6.375	<b>OQR</b> Usumbura, Belgian Congo	6.800	<b>HIH</b> San Pedro de Macoris, Dominican Rep., (B)	7.360	<b>ZDI</b> Mongu-Lealui, North. Rhodesia
6.380	<b>HC1DR</b> Quito, Ecuador, (B)	6.810	<b>OSK</b> Kitega, Belgian Congo	7.370	<b>RFBX</b> Moscow, Russia
6.383	<b>RNZ</b> Petropavlovsk, Russia	6.810	<b>RENG</b> Ateh-Sai, Russia	7.370	<b>RKIX</b> Odessa, Russia
6.405	<b>OQJ</b> Inongo, Belgian Congo	6.818	<b>RELZ</b> Spassky Zavod, Russia	7.380	<b>XECR</b> Foreign Office, Mexico City, Mex., (B)
6.420	<b>RGX</b> Minsk, Russia	6.840	<b>OQG</b> Kongolo, Belgian Congo	7.390	<b>JVR</b> Tokyo, Japan
6.425	<b>VE9AS</b> Fredericton, N. B., Canada, (X)	6.840	<b>CFA</b> Drummondville, P. Q., Canada	7.390	<b>ZLT</b> Wellington, N. Z.
6.425	<b>W3XL</b> Bound Brook, N. J., USA, (B)	6.840	<b>HAS</b> Szekesvehervar, Hungary	7.390	<b>RKNE</b> Kharkov, Russia
6.425	<b>CZE</b> Victoria, B. C., Canada	6.840	<b>HAT2</b> Szekesvehervar, Hungary	7.400	<b>WEM</b> Rocky Point, N. Y., USA
6.425	<b>CZF</b> Vancouver, B. C., Canada	6.850	<b>RKNP</b> Kharkov, Russia	7.400	<b>HJ3ABD</b> Bogota, Colombia, (B)
6.425	<b>CZG</b> Prince Rupert, B. C., Canada	6.850	<b>LPG5</b> General Pacheco, Argentina	7.400	<b>RRRH</b> Khabarovsk, Russia
6.425	<b>VE9BY</b> London, Ont., Canada, (B)	6.850	<b>VPE</b> Labasa, Fiji Islands, (X)	7.407	<b>WEN</b> New Brunswick, N. J., USA
6.430	<b>OQF</b> Port Franqui, Belgian Congo	6.850	<b>VQL</b> Savu-Savu, Fiji Islands, (X)	7.408	<b>RFAG</b> Moscow, Russia
6.440	<b>RTA</b> Novosibirsk, Russia	6.850	<b>VRO</b> Suva, Fiji Islands, (X)	7.410	<b>XGV</b> Shanghai, China
6.450	<b>OTO</b> Leopoldville, Belgian Congo	6.850	<b>VPF</b> Taveuni, Fiji Islands, (X)	7.410	<b>VQR</b> Nairobi, Kenya
6.450	<b>HJ1ABB</b> Barranquilla, Colombia, (B)	6.850	<b>RKF</b> Moscow, Russia	7.415	<b>WEG</b> Rocky Point, N. Y., USA
6.460	<b>RHCC</b> Khibinogorsk, Russia	6.860	<b>KEL</b> Bolinas, Calif., (X)	7.430	<b>RKM1</b> Zaporozje, Russia
6.465	<b>OQO</b> Basoko, Belgian Congo	6.860	<b>OTL</b> Leopoldville, Belgian Congo	7.440	<b>RKMH</b> Khristinovka, Russia
6.470	<b>RCAD</b> Minsk, Russia	6.870	<b>EAK</b> San Lorenzo, Canary Islands	7.444	<b>HBQ</b> Prangins, Switzerland, (B)
6.480	<b>EDR4</b> Palma de Mallorca	6.870	<b>RFK</b> Moscow, Russia	7.450	<b>RUK</b> Stalinabad, Russia
6.495	<b>OTH</b> Elizabethville, Belgian Congo	6.880	<b>OQN</b> Irumu, Belgian Congo	7.460	<b>CZG</b> Prince Rupert, B. C., Canada
6.500	<b>HJ5ABD</b> Manizales, Col., (B)	6.880	<b>CFA4</b> Drummondville, P. Q., Canada	7.460	<b>CZF</b> Vancouver, B. C., Canada
6.520	<b>RELT</b> Bourli-Tiube, Russia	6.880	<b>RKF</b> Moscow, Russia	7.460	<b>CZE</b> Victoria, B. C., Canada
6.520	<b>YV6RV</b> Valencia, Venezuela, (B)	6.880	<b>RINY</b> Oirat-Toura, Russia	7.460	<b>RKMF</b> Jitomir, Russia
6.528	<b>HIL</b> Santo Domingo, D.R., (B)	6.890	<b>RLGL</b> Kabansk, Russia	7.470	<b>JVG</b> Tokyo, Japan
6.535	<b>OSB</b> Kikwit, Belgian Congo	6.895	<b>EDK</b> San Lorenzo, Canary Islands	7.470	<b>RKME</b> Kharkov, Russia
6.550	<b>T12PG</b> San Jose, Costa Rica, (B)	6.895	<b>EDT</b> San Lorenzo, Canary Islands		
6.550	<b>RKLM</b> Zaporozje, Russia	6.900	<b>RKF</b> Moscow, Russia	7.500	<b>LPG6</b> General Pacheco, Argentina
6.570	<b>OQV</b> Albertville, Belgian Congo	6.905	<b>GDS</b> Rugby, United Kingdom	7.500	<b>ZGB</b> Kuala Lumpur, Fed. Malay States
6.580	<b>HJ1ABB</b> Barranquilla, Colombia, (B)	6.910	<b>ZEZ</b> Broken Hill, Northern Rhodesia	7.500	<b>JVP</b> Tokyo, Japan
6.590	<b>VQR</b> Nairobi, Kenya	6.910	<b>ZDH</b> Fort Jameson, Northern Rhodesia	7.500	<b>RKI</b> Moscow, Russia
6.593	<b>ZDG</b> Mpika, Northern Rhodesia	6.910	<b>ZDA</b> Livingstone, Northern Rhodesia	7.510	<b>JVP</b> Nazaki, Japan
		6.910	<b>ZDI</b> Mongu-Lealui, North. Rhodesia		
		6.910	<b>ZFF</b> Mpika, Northern Rhodesia		

B=Broadcasting; X=Experimental.

freq. Mc.	CALL and LOCATION	freq. Mc.	CALL and LOCATION	freq. Mc.	CALL and LOCATION
7.510	REJK Karsapkaï, Russia	8.195	OQL Leopoldville, Belgian Congo	8.890	WYG Kelly Field, Tex., USA
7.510	RKND Kharkov, Russia	8.200	LPG7 General Pacheco, Argentina	8.890	WYR Kingley Field, Philippine Is.
7.518	IRV Rome, Italy	8.205	EDR2 Madrid, Spain	8.890	WYZ Lordsburg, New Mexico, USA
7.520	KKH Kahuku, Hawaii	8.205	EDS Madrid, Spain	8.890	WUG Marfa, Texas, USA
7.520	RKI Moscow, Russia	8.214	HJCJB Quito, Ecuador, (B)	8.890	WYT Nichols Field, Philippine Is.
7.545	RKY Moscow, Russia	8.215	HJ5ABF Popayan, Colombia, (X)	8.890	WUM Tucson, Ariz., USA
7.565	KWY Dixon, Calif., USA	8.220	--- Aeronautical, Europe	8.900	ZLS Wellington, New Zealand
7.580	RKNC Kharkov, Russia	8.220	ZSV Walvis Bay, Un. of So. Africa	8.900	ZLT Wellington, New Zealand
7.610	KWX Dixon, Calif., USA	8.225	RRD Moscow, Russia	8.902	RKN Moscow, Russia
7.610	--- Konigs Wusterhausen, Germany	8.230	EAP S. Lorenzo, Canary Islands	8.920	GCX Rugby, United Kingdom
7.620	RKPO Vorochilovsk, Russia	8.235	OCQ Coquilhatville, Belgian Congo	8.925	OQH Elisabethville, Belgian Congo
7.626	RIM Irkutsk, Russia	8.250	RKNC Kharkov, Russia	8.935	CNR Rabat, Morocco, (B)
7.626	RIM Tashkent, Russia	8.270	OQDI Kindu, Belgian Congo	8.940	KZGG Cebu, Philippine Islands
7.632	OEJ Vienna, Austria	8.290	RIKW Omsk, Russia	8.950	TGX Guatemala City, Guatemala, (B)
7.650	REAJ Moscow, Russia	8.305	OQEI Costermansville, Belgian Congo	8.955	ZGB Kuala Lumpur, Fed. Malay St.
7.660	FTL Ste. Assise, France	8.328	--- Ship telephone	8.960	--- Algiers-Eucalyptus, Algeria
7.660	--- Taihoku, Japan	8.333	YQI Constanta, Rumania	8.965	OQC Coquilhatville, Belgian Congo
7.685	TIO Cartago, Costa Rica	8.333	LPD General Pacheco, Argentina	8.975	VWY Kirkee, India
7.688	TYC3 Paris, France	8.333	LOB Puerto Aguirre, Argentina	9.005	OQN1 Trumu, Belgian Congo
7.700	ONE Banana, Belgian Congo	8.333	OMX Scoresbysund, Greenland	9.010	KEJ Bolinas, Calif., USA
7.700	TYC2 Paris, France	8.333	RMAT Vladivostok, U.S.S.R.	9.020	GCS Rugby, United Kingdom
7.700	RKNCB Kharkov, Russia	8.340	OQF1 Port-Francois, Belgian Congo	9.037	TYA2 Paris, T.S.F., France
7.715	KEE Bolinas, Calif., (X)	8.345	FFK St. Nazaire, France	9.050	OQR1 Usumbura, Belgian Congo
7.725	--- Radom, Poland	8.380	IAC Coltano, Italy, (X)	9.060	TFK Reykjavik, Iceland
7.730	WEV New Brunswick, N. J., USA	8.380	RJXC Makhatch Kala, Russia	9.091	XDA Chapultepec, Mexico
7.730	PDL Kootwijk, Netherlands	8.396	HXJ Bangkok, Siam	9.091	XFD Mexico City, Mexico, (B)
7.735	---	8.400	--- Aeronautical, Europe	9.104	LST Olivos, Argentina
7.740	CEC La Granja, Chile	8.420	EAK San Lorenzo, Canary Islands	9.110	KUW Manila, Philippine Islands
7.755	OQA1 Kigoma, Tanganyika	8.430	EAK San Lorenzo, Canary Islands	9.110	EAH Madrid, Spain
7.760	PCK Kootwijk, Netherlands	8.440	SPU Warsaw, Poland	9.120	CP5 La Paz, Bolivia, (B)
7.760	PDM Kootwijk, Netherlands	8.445	OSB1 Kikwit, Belgian Congo	9.125	OSI1 Gule, Belgian Congo
7.765	PDM Kootwijk, Netherlands	8.450	PRAG Porto Alere, Brazil, (B)	9.125	HAT4 Szekesfehervar, Hungary
7.770	FTF Ste. Assise, France	8.455	CAF Cerrito, Montevideo, Uruguay	9.150	YVR Maracaibo, Venezuela
7.770	PDM Kootwijk, Netherlands	8.460	FFK St. Nazaire, France	9.170	WNA Lawrenceville, N. J., USA
7.780	PSZ Sepetiba, Brazil	8.470	DAF Norddreh, Germany	9.170	KZGF Manila, Philippine Islands
7.785	TIR Cartago, Costa Rica	8.485	OQ11 Lissala, Belgian Congo	9.180	ZSR Khiphweul, Un. of So. Africa
7.790	HBP Prangins, Switzer-land, (B)	8.510	RILD Omsk, Russia	9.195	OQZ1 Kamina, Belgian Congo
7.795	LPZ Buenos Aires, Argentina, (P)	8.515	CZA Drummondville, P. Q., Canada	9.200	GBS Rugby, United Kingdom
7.800	RKNA Kharkov, Russia	8.515	IAC Coltano, Italy, (X)	9.230	FLJ Paris, France
7.805	KZGF Manila, Philippine Islands	8.525	OQJ1 Inongo, Belgian Congo	9.235	PDP Kootwijk, Netherlands
7.810	VRR Stony Hill, Jamaica	8.540	EAK San Lorenzo, Canary Islands	9.240	PDP Kootwijk, Netherlands
7.813	DFT Nauen, Germany	8.540	DAS Rugen, Germany	9.250	GBK Bodmin, United Kingdom
7.815	LPZ Buenos Aires, Argentina, (P)	8.540	RLEC Tchita, Russia	9.275	GCS Ongar, United Kingdom
7.820	OCO Lima, Peru	8.550	HSG Bangkok, Siam	9.280	GCB Rugby, United Kingdom
7.830	PGA Kootwijk, Netherlands	8.555	OQK1 Aketi, Belgian Congo	9.300	CNR Rabat, Morocco, (B)
7.830	PZGV Cebu, Philippine Islands	8.560	WOY Lawrenceville, N. J., USA	9.310	GBG Rugby, United Kingdom
7.835	PDV Kootwijk, Netherlands	8.560	WOO Ocean Gate, N. J., USA	9.315	OQT1 Buta, Belgian Congo
7.835	LCN Jeloy, Norway, (B)	8.565	HAT3 Szekesfehervar, Hungary	9.330	VLJ4 Sydney, Australia
7.840	PGA Kootwijk, Netherlands	8.566	--- Ship Telephone	9.332	CJA2 Drummondville, P. Q., Canada
7.851	SUX Abou Zabal, Egypt	8.570	RRRQ Novosibirsk, Russia	9.350	CEC La Granja, Chile
7.853	---	---	---	9.355	OQU1 Basankusu, Belgian Congo
7.855	PZGH Iloilo, Philippine Islands	8.580	RKOM Dnepropetrovsk, Russia	9.370	VQR Nairobi, Kenya
7.860	HX2JSB Guayaquil, Ecuador, (B)	8.585	OQX1 Kabinda, Belgian Congo	9.370	PGC Kootwijk, Netherlands
7.860	SUX Abou Zabal, Egypt	8.595	OXU Skamlebak, Denmark	9.375	XDA Chapultepec, Mexico
7.867	---	8.600	--- Aeronautical, Europe	9.375	PGC Kootwijk, Netherlands
7.869	---	8.600	RIPV Barnaul, Russia	9.375	RFCQ Moscow, Russia
7.870	RXC Panama City, Panama	8.610	TYD2 Paris, T.S.F., France	9.380	--- Aeronautical, Japan
7.877	SUX Abou Zabal, Egypt	8.630	VJI Cloncurry, Australia	9.400	XDC Mexico City, Mexico, (X)
7.880	JYR Chiba, Japan, (X)	8.630	PBB Den Helder, Netherlands	9.415	PLV Bandoeng, Java
7.890	VPD Suva, Fiji Islands	8.635	OXC1 Poenda, Belgian Congo	9.415	COH Habana, Cuba, (B)
7.895	RMGI Khabarovsk, Russia	8.650	VE9B London, Ontario, Canada, (X)	9.428	LPZ Buenos Aires, Argentina, (P)
7.901	LSL Hurlingham, Argentina, (X)	8.650	HAS Szekesfehervar, Hungary, (B)	9.435	OQV1 Albertville, Belgian Congo
7.905	OSKI Kitega, Belgian Congo	8.680	GBC Rugby, United Kingdom	9.445	WES Rocky Point, N. Y., USA
7.910	REJV Semipalatinsk, Russia	8.691	VWZ Kirkee, India	9.450	WET Rocky Point, N. Y., USA
7.920	RCKJ Lenkoran, Russia	8.693	VWZ Kirkee, India	9.470	RRRN Irkutsk, Russia
7.920	GCP Rugby, United Kingdom	8.700	RKLX Odessa, Russia	9.480	KET Kirkee, India
7.930	DOA Doberitz, Germany	8.700	VWZ Kirkee, India	9.480	LPR5 General Pacheco, Argentina
7.935	PSL Marapitu, Brazil	8.707	---	9.480	FAH Madrid-Vallecas, Spain
7.935	KZGF Manila, Philippine Islands	8.707	---	9.490	KEI Bolinas, Calif., USA
7.945	VK2ME Sydney, Australia	8.709	---	9.490	KZGH Iloilo, Philippine Islands
7.960	VLZ Sydney, Australia	8.710	CEC La Granja, Chile	9.493	SRI Posen, Poland, (B)
7.965	OQP1 Astrida, Belgian Congo	8.715	OSD1 Kigali, Belgian Congo	9.495	OXY Skamlebak, Denmark, (B)
7.968	HSP Bangkok, Siam	8.730	GCI Rugby, United Kingdom	9.500	PRBA Rio de Janeiro, Brazil, (B)
7.980	VLJ Sydney, Australia	8.750	ZEK Hongkong, China, (B)	9.500	PRF5 Rio de Janeiro, Brazil, (B)
7.980	VLZ4 Sydney, Australia	8.760	GQC Rugby, United Kingdom	9.500	YCOX Nanking, China, (B)
7.980	HSJ Bangkok, Siam	8.765	--- Naval Stations, Germany	9.500	RFAJ Moscow, Russia
7.990	OQM1 Lusambo, Belgian Congo	8.770	RSZ Irkutsk, Russia	9.500	HSP2 Bangkok, Siam, (B)
7.995	HX2JSB Guayaquil, Ecuador, (B)	8.775	PNI Makassar, Netherland Indies	9.500	YV3RC Caracas, Venezuela, (B)
8.020	HSJ Bangkok, Siam	8.790	OQQ1 Libonge, Belgian Congo	9.510	VK3ME Melbourne, Australia, (B)
8.035	OQB1 Bumba, Belgian Congo	8.790	TIN Cartago, Costa Rica	9.510	CSB Daventry, United Kingdom, (B)
8.035	CNR Rabat, Morocco, (B)	8.790	TIR Cartago, Costa Rica	9.510	YV3RC Caracas, Venezuela
8.050	RKCV Smolensk, Russia	8.793	CNP Casablanca, Morocco	9.520	OXY Skamlebak, Denmark, (B)
8.055	OQW1 Banningville, Belgian Congo	8.795	HKV Bogota, Colombia, (X)	9.525	OSG1 Luluabourg, Belgian Congo
8.065	LPZ Buenos Aires, Argentina, (P)	8.830	--- Portable-Interior Commission, Australia	9.530	W2XAF Schenectady, N. Y., USA, (B)
8.068	---	8.830	--- Ship Telephone	9.530	YNA Managua, Nicaragua
8.075	WEZ Rocky Point, N. Y., USA	8.830	OQO1 Basoko, Belgian Congo	9.540	DJN Zeesen, Germany, (B)
8.075	TYB2 Paris, T.S.F., France	8.850	NFO Cavite, P. I., (Time)	9.540	--- Batavia, Netherland India, (B)
8.085	OQS Stanleyville, Belgian Congo	8.870	CWK Cerrito, Montevideo, Uruguay	9.545	EAQ Aranjuez, Spain, (B)
8.095	VLK3 Sydney, Australia, (B)	8.875	--- Naval Stations, Japan	9.550	NAA Washington, D. C., USA (B)
8.100	EATH Vienna, Austria	8.880	WYL Barksdale Field, La., USA	9.560	DJA Zeesen, Germany, (B)
8.100	J1AA Tokyo, Japan	8.890	WUK Chapman Field, Fla., USA	9.560	--- Japan, (B)
8.103	HCBJ Quito, Ecuador, (B)	8.890	WYS Clark Field, Philippine Isl.	9.565	VUB Bombay, India, (B)
8.110	PELR Boukhta Bertys, Russia	8.890	WYU Dryden, Tex., USA	9.570	W1XK Westinghouse Elec. & Mfg. Co., Springfield, Mass., (B)
8.110	RELO Boukhta Bertys, Russia	8.890	WYU Dryden, Tex., USA	9.570	W8XK Saxonburg, Pa., USA
8.120	KAZ Manila Philippine Islands	8.890	WZO Ft. Bliss, Tex., USA	9.570	SUV Abou Zabal, Egypt, (B)
8.120	KTP Manila Philippine Islands	8.890	WZG Ft. Bragg, N. C., USA	9.570	KZRM Manila, Philippine Islands, (B)
8.130	OSF1 Panau, Belgian Congo	8.890	WZB Ft. Clark, Tex., USA	9.572	LKJ1 Jeloy, Norway, (B)
8.135	VIG Baghdad, Iraq	8.890	WVR Ft. McPherson, Ga., USA	9.575	VLJ Calcutta, India, (B)
8.140	FRS9 Saigon, Indo China	8.890	WZI Ft. Ringgold, Tex., USA	9.575	XGBD Shanghai, China, (B)
8.155	PGB Kootwijk, Netherlands	8.890	WVB Ft. Sam Houston, Tex., USA	9.579	VK3LR Lindhurst, Vic., Australia, (B)
8.160	OSE1 Kanda-Kanda, Belgian Congo	8.890	WYN Hathox Field, Okla., USA	9.580	VE9DR Drummondville, P.Q., Can., (B)
8.170	RV5O Moscow, Russia, (B)	8.890	WYO Hensley Field, Tex., USA	9.580	HBL Prangins, Switzer-land, (B)
8.185	PSK Rio de Janeiro, Brazil, (B)	8.890	WXA Juneau, Alaska	9.580	---

B=Broadcasting; X=Experimental.

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
9.580	GSC Daventry, Uited Kingdom, (B)	10.440	DGH Nauen, Germany	11.835	VE9HX Halifax, N. S., Canada, (B)
9.585	---- Pontoise, France, (B)	10.515	FZT2 Tananarive, Madagascar	11.840	KZRM Manila, Philippine Islands
9.590	W3XAU Newton Square, Pa., USA, (B)	10.520	CJA4 Drummondville, P. Q., Canada	11.845	---- Pontoise, France, (B)
9.590	VK2ME Sydney, Australia, (B)	10.525	VLK Sydney, Australia, (B)	11.855	DJP Zeesen, Germany
9.590	HP5J J St., Panama City, Panama, (B)	10.526	FZT2 Tananarive, Madagascar	11.860	VE9CA Calgary, Alta., Canada, (B)
9.590	TIRA Cartago, Costa Rica, (B)	10.530	GBX Rugby, United Kingdom	11.860	GSE Daventry, United Kingdom, (B)
9.590	PCJ Bindhoven, Netherlands, (B)	10.535	JIB Taihoku, Taiwan, Japan	11.870	WBXK Saxonburg, Pa., USA, (B)
9.595	HBL Prangins, Switzerland, (B)	10.550	WOK Lawrenceville, N. J., USA	11.870	VUC Calcutta, India, (B)
9.600	I2RO Rome, Italy, (B)	10.578	FYB Paris, France, (B)	11.875	---- "Radio Colonial," Paris, France, (B)
9.600	XETE Mexico City, Mexico, (B)	10.610	WEA Rocky Point, N. Y., USA	11.880	VK3LR Lyndhurst, Vic., Australia
9.600	LGN Bergen, Norway	10.620	WEF Rocky Point, N. Y., USA	11.880	---- Pontoise, France, (B)
9.600	CT1AA Lisbon, Portugal, (B)	10.620	EDN Madrid, Spain	11.880	RSN Everdlovsk, Russia
9.616	VQ7LO Nairobi, Kenya, (B)	10.620	EDS Madrid, Spain	11.885	---- Pontoise, France, (B)
9.620	FZR2 Saigon, French Indo-China	10.620	EDR2 Madrid, Spain	11.890	YNA Managua, Nicaragua, (B)
9.620	DGU Nauen, Germany, (X)	10.630	EHX Madrid, Spain	11.895	OSL Leopoldville, Belgian Congo
9.635	I2RO Rome, Italy, (B)	10.640	WED Rocky Point, N. Y., USA	11.900	XGOX Nanking, China, (B)
9.640	HSP2 Bangkok, Siam	10.640	WGW Rocky Point, N. Y., USA	11.910	RRRZ Sverdlvsk, Russia
9.655	OQY1 Niangara, Belgian Congo	10.660	OZT Skamlebak, Denmark	11.920	RRRQ Novosibirsk, Russia
9.660	PSJ Marapicu, Brazil	10.670	JVN Tokyo, Japan	11.940	FTA St. Assise, France
9.680	T14NRH Heredia, Costa Rica	10.675	CEC La Granja, Chile	11.950	FTT St. Assise, France
9.700	LQA Buenos Aires, Argentina	10.714	WNB Lawrenceville, N. J., USA	11.950	KKQ Bolinas, Calif., (X)
9.710	GCA Rugby, United Kingdom	10.740	RNZ Petropavlovsk, Russia	11.960	OQU2 Basankusu, Belgian Congo
9.750	WOF Lawrenceville, N. J., USA	10.760	JVM Tokyo, Japan	11.970	HSJ Bangkok, Siam
9.750	RKF Moscow, Russia	10.770	PSG Marapicu, Brazil	11.980	FZS Saigon, French Indo-China
9.760	VK2ME Sydney, Australia, (B)	10.840	GBP Rugby, United Kingdom	11.985	OQO2 Basoko, Belgian Congo
9.760	VIJ Sydney, Australia	10.850	KWV Dixon, Calif., USA	11.991	FZS2 Saigon, French Indo-China
9.760	VLZ2 Sydney, Australia	10.860	DFL Nauen, Germany		
9.772	EAM Madrid, Spain, (B)	10.860	ROT Irkutsk, Russia		
9.780	I2RO Rome, Italy	10.870	GIQ Dollis Hill, United Kingdom		
9.790	GBW Rugby, United Kingdom	10.910	KTR Manila, Philippine Islands	12.000	FZG Saigon, French Indo-China
9.800	LSE Monte Grande, Argentina	10.940	FTH St. Assise, France	12.000	VQR Nairobi, Kenya
9.800	GCW Rugby, United Kingdom	10.950	VLK4 Sydney, Australia	12.000	RNE Moscow, Russia, (B)
9.820	EAK San Lorenzo, Canary Islands	10.975	OCI Lima, Peru	12.015	OSC2 Boende, Belgian Congo
9.824	LSI Buenos Aires, Argentina	10.975	GCL Rugby, United Kingdom	12.028	CT1CT Lisbon, Portugal, (B)
9.830	IRF Rome, Italy	10.990	ZLT Wellington, N. Z.	12.030	HBO Prangins, Switzerland, (B)
9.830	IRM Rome, Italy, (B)	11.000	ZLT Wellington, N. Z.	12.035	DJK Nauen, Germany
9.830	IRU Rome, Italy	11.110	RUU Detskoe Selo, Russia	12.050	VRR Stony Hill, Jamaica
9.840	FTI St. Assise, France	11.110	LPD General Pacheco, Argentina	12.050	PDV Kootwijk, Netherlands
9.840	FYC2 Paris, France	11.110	---- Aeronautical, Japan	12.055	
9.840	JYS Chiba, Japan, (B)	11.111	XFD Mexico City, Mexico, (B)	12.060	PDV Kootwijk, Netherlands
9.860	EAQ Aranjuez, Spain, (B)	11.140	XGB Shanghai, China	12.082	CT1CT Lisbon, Portugal, (B)
9.863	FZT5 Tananarive, Madagascar	11.140	---- Naval Stations, Germany	12.085	OQB2 Bumba, Belgian Congo
9.870	WON Lawrenceville, N. J., USA	11.187	XAM Merida, Yuc., Mexico	12.100	CJA6 Drummondville, P. Q., Canada
9.875	LPZ Buenos Aires, Argentina, (P)	11.200	---- Aeronautical, Europe	12.100	TIR6 Cartago, Costa Rica
9.890	LSA Buenos Aires, Argentina	11.210	SPT Warsaw, Poland	12.120	---- Algiers, Algeria
9.890	LSN Hurlingham, Argentina	11.260	---- Aeronautical, Europe	12.145	OQN2 Urumu, Belgian Congo
9.895	FZV2 Tananarive, Madagascar	11.340	DAN Norden, Germany		
9.900	LSN Buenos Aires, Argentina, (B)	11.370	CWG Cerrito, Montevideo, Uruguay	12.150	FQE St. Assise, France
9.905	CGA5 Drummondville, P. Q., Canada	11.425	OQK2 Aketi, Belgian Congo	12.150	GBS Rugby, United Kingdom
9.925	JDY Dairen, Manchuria	11.435	DHC Nauen, Germany	12.180	OQT2 Buta, Belgian Congo
9.928	RRLY Moscow, Russia	11.465	OQV2 Albertville, Belgian Congo	12.185	FRSS Saigon, French Indo-China
9.950	GCU Rugby, United Kingdom	11.470	IBDK S. S. Elettra (G. Marconi's Yacht) (X)	12.185	---- Radom, Poland
9.964	LSL Buenos Aires, Argentina	11.490	EAH Madrid, Spain	12.215	TYA Paris, T.S.F., France
9.966	IRS Rome, Italy	11.490	GBK Bodmin, United Kingdom	12.229	CT1CT Lisbon, Portugal, (B)
9.990	LSN Buenos Aires, Argentina, (B)	11.500	VQR Nairobi, Kenya	12.240	OQE2 Costermansville, Belgian Congo
9.990	KAZ Manila, Philippine Islands	11.500	RPT Tashkent, Russia	12.244	LPD General Pacheco, Argentina
		11.505	OSH Elisabethville, Belgian Congo	12.250	FTN Ste. Assise, France
		11.530	LSN Buenos Aires, Argentina, (B)	12.250	TYB Paris, France
		11.530	CGA Drummondville, P. Q.	12.250	RFBY Moscow, Russia
		11.538	---- Rome, Italy	12.260	GBS Rugby, United Kingdom
		11.540	XGR Shanghai, China	12.270	FTN Ste. Assise, France
10.000	FHH4 Pointe-Noire, French Equatorial Africa	11.565	OQP2 Astrida, Belgian Congo	12.275	RKK Moscow, Russia
10.000	EAQ Aranjuez, Spain	11.570	GNS Ongar, United Kingdom	12.280	FZT3 Tananarive, Madagascar
10.000	---- Belgrade, Yugoslavia, (B)	11.620	EAH Madrid, Spain	12.280	KUV Manila, Philippine Islands
10.055	ZFB Hamilton, Bermuda	11.660	PPQ Sepetiba, Brazil, (X)	12.290	GBU Rugby, United Kingdom
10.055	SUV Abou Zaabal, Egypt, (B)	11.660	---- Aeronautical, Europe	12.295	ZLT Wellington, New Zealand
10.065	JMP2 Shinkyo, Japan	11.660	JVL Tokyo, Japan	12.295	ZLU Wellington, New Zealand
10.070	EDM Madrid, Spain	11.670	RPG Barentsburg, Russia	12.300	ONC Coquilhatville, Belgian Congo
10.070	EDR2 Madrid, Spain	11.675	---- Rome, Italy	12.300	ZLW Wellington, New Zealand
10.070	EDS Madrid, Spain	11.680	OQM2 Lusambo, Belgian Congo	12.325	DAF Norddeich, Germany
10.070	EHY Madrid, Spain	11.680	LPG8 General Pacheco, Argentina	12.360	OSF2 Panu, Belgian Congo
10.090	EDR3 Tablero, Teneriffe, Canary Is.	11.680	KIO Kahuku, Hawaii	12.394	DAF Norddeich, Germany
10.100	EHY Madrid, Spain	11.685	YV2RC Caracas, Venezuela	12.396	CT1GO Paredo, Portugal, (B)
10.105	REX Indigo Boukhita, Russia	11.695	HJ4ABA P.O. Box 50, Medellin, Colombia, (B)	12.425	OSI2 Gule, Belgian Congo
10.120	PSI Marapicu, Brazil	11.710	OGW2 Banningville, Belgian Congo	12.450	RLGL Kabansk, Russia
10.140	OPM Leopoldville, Belgian Congo	11.700	---- Pontoise, France, (B)	12.470	OQJ2 Inongo, Belgian Congo
10.163	---- Ship telephone	11.700	CJRX Winnipeg, Man., Canada, (B)	12.485	CNP Casablanca, Morocco
10.169	HSJ Bangkok, Siam	11.720	PHI Huizen, Netherlands, (B)	12.500	PBB Den Helder, Netherlands
10.220	PSH Marapicu, Brazil	11.730	NAA Washington, D. C., USA, (B)	12.500	SPN Warsaw, Poland
10.230	CEC Santiago, Chile	11.740	RKF Moscow, Russia	12.500	YQI Constanta, Rumania
10.250	LSK3 Hurlingham, Argentina	11.740	RRRZ Tashkent, Russia, (B)	12.500	RKF Moscow, Russia
10.260	PMN Bandoeng, Netherland Indies	11.750	GSD Daventry, United King., (B)	12.550	ZSV Walvis Bay, Un. of So. Africa
10.260	RRRO Irkutsk, Russia	11.760	XDA Chapultepec, Mexico, (B)	12.550	---- Aeronautical, Europe
10.290	DIQ Nauen, Germany	11.770	D ID Zeesen, Germany, (B)	12.565	OQX2 Kabinda, Belgian Congo
10.290	HPC Panama City, Panama	11.780	VE9DN Drummondville, P. Q., Can., (B)	12.570	FFK St. Nazaire, France
10.300	LSL2 Hurlingham, Argentina	11.780	VE9DR Drummondville, P. Q., Can., (B)	12.640	OQZ2 Kanua, Belgian Congo
10.330	ORK Ruysselede, Belgium, (B)	11.780	---- Cairo, Egypt	12.660	CZA Drummondville, P. Q., Canada
10.335	ZFD Hamilton, Bermuda	11.790	W1XAL Boston, Mass., USA, (B)	12.705	FFK St. Nazaire, France
10.350	LSX Monte Grande, Argentina, (B)	11.790	TITR San Jose, Costa Rica, (B)	12.740	OSE2 Kanda-Kanda, Belgian Congo
10.370	EDR3 El Tablero, Canary Islands	11.795	DJO Zeesen, Germany, (B)	12.745	DAF Norddeich, Germany
10.370	EHZ El Tablero, Canary Islands	11.800	---- Japan, (B)	12.750	---- Aeronautical, Europe
10.375	JVO Tokyo, Japan	11.800	CO9WR P.O. Box 85, Sancti Spiritus, Cuba, (X)	12.790	GBG Rugby, United Kingdom
10.380	WCG Rocky Point, N. Y., USA	11.801	OER3 Vienna, Austria, (B)	12.800	IAC Coltano, Italy, (X)
10.390	KER Bolinas, Calif., USA	11.801	SGPC Shanghai, China, (B)	12.800	OSD2 Kigali, Belgian Congo
10.390	GBX Rugby, United Kingdom	11.810	VE9GW Bowmanville, Ont., Can., (B)	12.825	CNR Rabat, Morocco, (B)
10.400	KEZ Bolinas, Calif., USA	11.810	I2RO Rome, Italy, (B)	12.840	WOY Lawrenceville, N. J., USA
10.410	KES Bolinas, Calif., USA	11.810	EAG Aranjuez, Spain, (B)	12.840	WOY Ocean Gate, N. J., USA
10.410	PKD Kootwijk, Netherlands	11.810	W9XAA Chicago, Ill., USA	12.860	OQD2 Kindu, Belgian Congo
10.410	LSY Monte Grande, Argentina	11.810	W2XE Wayne, N. J., USA, (B)	12.865	IAC Coltano, Italy, (X)
10.415	PKD Kootwijk, Netherlands	11.810		12.910	OSK2 Kitega, Belgian Congo
10.420	XGW Shanghai, China	11.830		12.910	OXR Skamlebak, Denmark
10.420	PKD Kootwijk, Netherlands	11.830		12.980	OQG2 Kongolo, Belgian Congo
10.430	YBG Medan, Sumatra				

B=Broadcasting; X=Experimental.

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
13.000	<b>TYC</b> Paris, T.S.F., France	14.560	<b>RTZ</b> Irkutsk, Russia	15.970	<b>RRRI</b> Khabarovsk, Russia
13.025	<b>OQQ2</b> Libenge, Belgian Congo	14.570	<b>RTZ</b> Irkutsk, Russia	15.985	<b>WAZ</b> New Brunswick, N. J., USA
13.040	--- Ship Telephone	14.590	<b>WMN</b> Lawrenceville, N. J., USA	16.000	<b>WKQ</b> Rocky Point N. Y., USA
13.074	<b>JYK</b> Tokyo, Japan	14.600	<b>JVH</b> Tokyo, Japan	16.000	<b>RFAJ</b> Moscow, Russia
13.075	<b>VPD</b> Suva, Fiji Islands, (X)	14.605	<b>DGZ</b> Nauen, Germany	16.015	<b>WQR</b> New Brunswick, N. J., USA
13.085	<b>OQ12</b> Lisala, Belgian Congo	14.620	<b>XDA</b> Chapultepec, Mexico	16.030	<b>KKP</b> Kahuku, Hawaii
13.100	--- Naval Stations, Germany	14.620	<b>EDM</b> Madrid, Spain	16.050	<b>JVC</b> Tokyo, Japan
13.105	<b>IRJ</b> Rome, Italy	14.620	<b>EDN</b> Madrid, Spain	16.070	<b>RRRI</b> Khabarovsk, Russia
13.140	<b>CWH</b> Carrito, Montevideo, Uruguay	14.620	<b>EDR2</b> Madrid, Spain	16.090	<b>EDR2</b> Madrid, Spain
13.150	<b>OSG2</b> Luluabourg, Belgian Congo	14.620	<b>EDS</b> Madrid, Spain	16.090	<b>EDS</b> Madrid, Spain
13.180	<b>DGG</b> Nauen, Germany	14.620	<b>EHY</b> Madrid, Spain	16.120	<b>IRY</b> Rome, Italy
13.200	--- Ship Telephone	14.635	<b>RELB</b> Boukhta Bertys, Russia	16.140	--- Rugby, United Kingdom
13.205	<b>ONF</b> Banana, Belgian Congo	14.635	<b>RELO</b> Boukhta Bertys, Russia	16.150	<b>GBX</b> Rugby, United Kingdom
13.215	--- Ship Telephone	14.635	<b>GBL</b> Rugby, United Kingdom	16.162	<b>PSA</b> Maripicu, Brazil
13.220	--- Ship Telephone	14.665	<b>DFD</b> Nauen, Germany	16.200	<b>FZR</b> Saigon, French Indo-China
13.240	<b>KEJ</b> Manila, Philippine Islands	14.690	<b>PSS</b> Rio de Janeiro, Brazil	16.214	<b>FZR3</b> Saigon, French Indo-China
13.245	<b>OSV</b> Stanleyville, Belgian Congo	14.705	<b>OZW</b> Skamlebak, Denmark	16.233	<b>FZR3</b> Saigon, French Indo-China
13.260	<b>IRR</b> Rome, Italy	14.710	<b>VLZ5</b> Sydney, Australia	16.240	<b>KTO</b> Manila, Philippine Islands
13.285	<b>CJA7</b> Drummondville, P. Q., Canada	14.750	<b>FZV</b> Tananarive, Madagascar	16.270	<b>WLK</b> Lawrenceville, N. J., USA
13.300	--- Aeronautical, Europe	14.770	<b>WEB</b> Rocky Point, N. Y., USA	16.270	<b>WOG</b> Ocean Gate, N. J., USA
13.300	--- Naval Stations, Japan	14.800	<b>WQV</b> Rocky Point, N. Y., USA	16.300	<b>EDR3</b> El Tablero, Canary Islands
13.315	<b>OQY2</b> Niangara, Belgian Congo	14.815	<b>WQL</b> New Brunswick, N. J., USA	16.305	<b>PCL</b> Kootwijk, Netherlands
13.335	<b>WYS</b> Clark Field, Philippine Isl.	14.820	<b>EAK</b> San Lorenzo, Canary Islands	16.330	<b>VLJ3</b> Sydney, Australia
13.335	<b>WYY</b> Orydon, Texas, USA	14.830	<b>WKU</b> Rocky Point, N. Y., USA	16.330	<b>VLK</b> Sydney, Australia, (B)
13.335	<b>WYM</b> Ft. Leavenworth, Kans., USA	14.830	<b>RRRW</b> Moscow, Russia	16.330	<b>VLZ</b> Sydney, Australia
13.335	<b>WYN</b> Hathbox Field, Okla., USA	14.840	<b>RRRW</b> Moscow, Russia	16.400	--- Naval Stations, Germany
13.335	<b>WYO</b> Hensley Field, Texas, USA	14.910	<b>JVG</b> Tokyo, Japan	16.440	--- Aeronautical, Europe
13.335	<b>WYG</b> Kelly Field, Texas, USA	14.920	<b>KQH</b> Kahuku, Hawaii	16.665	<b>LPD</b> General Pacheco, Argentina
13.335	<b>WYR</b> Kindley Field, Philippine Isl.	14.935	<b>PSE</b> Marapicu, Brazil	16.665	<b>DAN</b> Norden, Germany
13.335	<b>WUG</b> Marfa, Texas, USA	14.940	<b>EAK</b> San Lorenzo, Canary Islands	16.666	<b>LOB</b> Puerto Aguirre, Argentina
13.335	<b>WYT</b> Nichols Field, Philippine Isl.	14.950	<b>HJB</b> Bogota, Col.	16.800	--- Aeronautical, Europe
13.335	<b>WUM</b> Tucson, Ariz., USA	14.965	<b>EAK</b> San Lorenzo, Canary Islands	16.854	<b>ZSV</b> Walvis Bay, Un. of So. Africa
13.340	<b>VLJ2</b> Sydney, Australia	14.980	<b>KAY</b> Manila, Philippine Islands	16.870	<b>FFK</b> St. Nazaire, France
13.340	<b>VLZ3</b> Sydney, Australia	14.985	<b>EFR2</b> Madrid, Spain	17.080	<b>GBC</b> Rugby, United Kingdom
13.340	<b>CGA</b> Drummondville, P. Q., Canada	14.985	<b>EDS</b> Madrid, Spain	17.120	<b>WOY</b> Lawrenceville, N. J., USA
13.345	<b>YVG</b> Maracay, Venezuela			17.120	<b>WOO</b> Ocean Gate, N. J., USA
13.360	<b>OQF2</b> Port-Francois, Belgian Congo			17.130	<b>HAS5</b> Szekesfehervar, Hungary, (B)
13.390	<b>WMA</b> Lawrenceville, N. J., USA	15.000	<b>CM6XJ</b> Central Tainicu, Cuba	17.143	--- Shanghai, China
13.405	<b>GBJ</b> Bodmin, United Kingdom	15.040	<b>WQG</b> Rocky Point, N. Y., USA	17.150	<b>OPC</b> Coquilhatville, Belgian Congo
13.410	<b>YID</b> Baghdad, Iraq, (B)	15.040	<b>RKI</b> Moscow, Russia	17.190	<b>OXV</b> Skamlebak, Denmark
13.415	<b>OQR2</b> Usumbura, Belgian Congo	15.055	<b>WNC</b> Hiialeah, Fla., USA	17.200	--- Aeronautical, Europe
13.415	<b>GCJ</b> Rugby, United Kingdom	15.065	<b>EAK</b> San Lorenzo, Canary Islands	17.200	<b>CWI</b> Carrito, Montevideo, Uruguay
13.460	<b>LPR6</b> General Pacheco, Argentina	15.070	<b>PSD</b> Marapicu, Brazil	17.260	<b>DAF</b> Norddeitch, Germany
13.510	<b>OSB2</b> Kikwit, Belgian Congo	15.075	<b>TI4NRH</b> Heredia, Costa Rica, (B)	17.260	<b>PBB</b> Den Helder, Netherlands
13.540	<b>GMS</b> Ongar, United Kingdom	15.090	<b>RKI</b> Moscow, Russia	17.300	<b>VE9BY</b> London, Ont., Canada, (B)
13.560	<b>JVI</b> Tokyo, Japan	15.104	<b>RAU</b> Tashkent, Russia, (B)	17.310	<b>W3XL</b> Bound Brook, N. J., USA, (B)
13.585	<b>GBB</b> Rugby, United Kingdom	15.110	<b>DJL</b> Zeesen, Germany, (B)	17.310	<b>CZA</b> Drummondville, P. Q., Canada
13.591	<b>GPC</b> Rugby, United Kingdom	15.120	<b>J1AA</b> Tokyo, Japan, (B)	17.341	<b>DIM</b> Nauen, Germany
13.605	<b>OQA2</b> Kigoma, Belgian Congo	15.120	<b>HVJ</b> Vatican City, (B)	17.400	<b>J1AA</b> Tokyo, Japan, (B)
13.610	<b>JYK</b> Tokyo, Japan, (XB)	15.123	<b>HVJ</b> Vatican City, (B)	17.430	<b>CWM</b> Carrito, Montevideo, Uruguay
13.635	<b>SPW</b> Warsaw, Poland	15.130	<b>NAA</b> Washington, D. C., USA, (B)	17.470	<b>TYD</b> Paris, T.S.F., France
13.685	<b>HAT</b> Szekesfehervar, Hungary	15.130	<b>VE9DN</b> Drummondville, P. Q., Can., (B)	17.480	<b>VWY</b> Kirkee, India
13.740	<b>CGA</b> Drummondville, P. Q., Canada	15.140	<b>GSF</b> Daventry, United Kingdom, (B)	17.510	<b>VWY2</b> Kirkee, India
13.790	<b>EAK</b> San Lorenzo, Canary Islands	15.190	<b>VE9BA</b> Montreal, P. Q., Canada, (X)	17.512	<b>DFB</b> Nauen, Germany
13.800	<b>VLK5</b> Sydney, Australia	15.200	<b>DJB</b> Zeesen, Germany, (B)	17.520	<b>DEB</b> Nauen, Germany
13.811	<b>SUZ</b> Abou Zaabal, Egypt	15.210	<b>W8XK</b> Saxonburg, Pa., USA	17.600	--- Ship Telephone
13.813		15.220	<b>PCJ</b> Eindhoven, Netherlands, (B)	17.600	<b>GBC</b> Rugby, United Kingdom
13.820		15.230	<b>VK3LR</b> Lyndhurst, Vic., Aus., (B)	17.620	--- Ship Telephone
13.827	<b>SUZ</b> Abou Zaabal, Egypt	15.243	<b>P5.233</b> Pontoise, France (B)	17.630	<b>VLJ5</b> Sydney, Australia
13.829		15.250	<b>W1XAL</b> Boston, Mass., USA, (B)	17.630	<b>RRRU</b> Khabarovsk, Russia
13.880	<b>RELO</b> Boukhta Bertys, Russia	15.252	<b>RIM</b> Rakhkent, Russia	17.640	<b>RRRU</b> Khabarovsk, Russia
13.885	<b>WQT</b> Rocky Point, N. Y., USA	15.265	<b>ESI</b> Daventry, United Kingdom, (B)	17.640	--- Ship Telephone
13.890	<b>LPG9</b> General Pacheco, Argentina	15.265	<b>EAQ</b> Aranjuez, Spain, (B)		
13.950	--- Aeronautical, Europe	15.270	<b>W2XE</b> Wayne, N. J., USA, (B)	17.650	<b>XGM</b> Shanghai, China
13.950	<b>YO1</b> Bucharest, Rumania, (B)	15.275	--- Warsaw, Poland, (B)	17.650	<b>RRRU</b> Khabarovsk, Russia
13.965	<b>TFL</b> Reykjavik, Iceland	15.280	<b>DJQ</b> Zeesen, Germany, (B)	17.660	<b>RRRV</b> Khabarovsk, Russia
13.980	<b>LCO</b> Jeloy, Norway, (B)	15.295	<b>CP5</b> La Paz, Bolivia, (B)	17.670	<b>RRRV</b> Khabarovsk, Russia
13.990	<b>GBA</b> Rugby, England	15.295	<b>P5.295</b> Pontoise, France, (B)	17.680	<b>RRRV</b> Khabarovsk, Russia
14.000	<b>RFB2</b> Mojaisk, Russia	15.300	<b>OXY</b> Skamlebak, Denmark, (B)	17.690	<b>LQB2</b> Monte Grande, Argentina
14.005	to Amateurs,)	15.320	--- Taihoku, Japan	17.699	<b>IAC</b> Coltano, Italy, (X)
14.395		15.330	<b>W2XAD</b> Schenectady N. Y., USA, (B)	17.700	--- Naval Stations, Japan
14.100	<b>HJ5ABE</b> Cali, Colombia, (X)	15.340	<b>DJR</b> Zeesen, Germany, (B)	17.710	<b>CJA9</b> Drummondville, P. Q., Canada
14.151	<b>HSJ</b> Bangkok, Siam	15.350	<b>CT1AA</b> Lisbon, Portugal, (BX)	17.710	<b>RRRV</b> Khabarovsk, Russia
14.250	<b>RPK</b> Moscow, Russia	15.355	<b>KWU</b> Dixon, Calif., USA	17.719	<b>HSP</b> Bangkok, Siam
14.285	<b>LPR2</b> General Pacheco, Argentina	15.370	<b>TIR</b> Cartago, Costa Rica	17.720	<b>RRRV</b> Khabarovsk, Russia
14.286	<b>RMNK</b> Kharkov, Russia	15.370	<b>HAS3</b> Szekesfehervar, Hungary, (B)	17.725	<b>CNP</b> Casablanca, Morocco
14.286	<b>RKV</b> Moscow, Russia	15.410	<b>PRADO</b> Riobamba, Ecuador, (B)	17.730	<b>RRRV</b> Khabarovsk, Russia
14.410	<b>DIP</b> Zeesen, Germany	15.415	<b>KWO</b> Dixon, Calif., USA	17.740	<b>HSP</b> Bangkok, Siam
14.420	<b>VPD</b> Suva, Fiji	15.430	<b>KWE</b> Bolinas, Calif., USA	17.750	<b>IAC</b> Coltano, Italy, (X)
14.435	<b>LSJ2</b> Hurlingham, Argentina	15.445	<b>WQZ</b> San Juan, Puerto Rico	17.760	<b>DJE</b> Zeesen, Germany, (B)
14.440	<b>GBW</b> Rugby, United Kingdom	15.460	<b>KRR</b> Bolinas, Calif., USA	17.765	<b>P5.275</b> Pontoise, France, (B)
14.450	<b>RPK</b> Moscow, Russia	15.475	<b>KKL</b> Bolinas, Calif., USA	17.775	<b>PHI</b> Huizen, Netherland, (B)
14.470	<b>WMF</b> Lawrenceville, N. J., USA	15.490	<b>KEM</b> Bolinas, Calif., USA	17.780	<b>W3XAL</b> Bound Br., N. J., USA, (B)
14.479	<b>HSJ</b> Bangkok, Siam	15.510	<b>JDX</b> Dairen, Manchuria	17.780	<b>W9YAA</b> Chicago, Ill., USA, (B)
14.480	<b>LSN</b> Buenos Aires, Argentina, (B)	15.530	<b>HSG</b> Bangkok, Siam	17.780	<b>W9XF</b> Downer's Grove, Ill., USA, (B)
14.480	<b>GBW</b> Rugby, United Kingdom	15.560	<b>PYR</b> Sepetiba, Brazil	17.780	<b>W8XK</b> Saxonburg, Pa., (B)
14.485	<b>TGF</b> Guatemala City, Guat.	15.620	<b>JVF</b> Tokyo, Japan	17.780	--- Warsaw, Poland, (B)
14.485	<b>HPF</b> Panama, Panama	15.625	<b>OCJ</b> Lima, Peru	17.790	<b>RRRV</b> Khabarovsk, Russia
14.485	<b>YNA</b> Managua, Nicaragua	15.660	<b>JVE</b> Tokyo, Japan	17.790	<b>CSC</b> Daventry, United Kingdom (B)
14.485	<b>TIR</b> Cartago, Costa Rica	15.670	<b>LCQ</b> Jeloy, Norway	17.794	<b>XGEB</b> Shanghai, China
14.500	<b>LSM2</b> Hurlingham, Argentina	15.680	<b>JZA</b> Shinkyo, Japan	17.795	<b>PCV</b> Kootwijk, Netherlands
14.500	<b>RRRF</b> Moscow, Russia	15.740	<b>TFM</b> Reykjavik Iceland	17.800	<b>XGXX</b> Nanking, China, (B)
14.510	<b>RRRF</b> Moscow, Russia	15.740	<b>JIA</b> Taihoku, Taiwan, Japan	17.800	<b>PCV</b> Kootwijk, Netherlands
14.515	<b>XDA</b> Chapultepec, Mexico	15.760	<b>JYT</b> Tokyo (Kemikawa) Jap., (BX)	17.800	<b>RRRV</b> Khabarovsk, Russia
14.530	<b>LSA</b> Buenos Aires, Argentina	15.810	<b>LSL</b> Hurlingham, Argentina	17.800	<b>HSC</b> Bangkok, Siam
14.530	<b>LSN</b> Buenos Aires, Argentina, (B)	15.860	<b>FTK</b> St. Assise, France	17.805	<b>PCV</b> Kootwijk, Netherlands
14.535	<b>HBJ</b> Prangins, Switzerland	15.860	<b>JVD</b> Tokyo, Japan	17.810	<b>PCV</b> Kootwijk, Netherlands
14.540	--- Tokyo, Japan	15.865	<b>CEC</b> La Granja, Chile	17.810	<b>RRRV</b> Khabarovsk, Russia
14.545	<b>RTZ</b> Irkutsk, Russia	15.880	<b>FTK</b> St. Assise, France	17.820	<b>RRRV</b> Khabarovsk, Russia
14.550	<b>RTZ</b> Irkutsk, Russia	15.930	<b>FCY</b> Paris, France	17.830	<b>PCV</b> Kootwijk, Netherlands
14.550	<b>HBJ</b> Prangins, Switzerland	15.935		17.830	<b>RRRV</b> Khabarovsk, Russia

B=Broadcasting; X=Experimental.

Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION	Freq. Mc.	CALL and LOCATION
17.850	LSN Buenos Aires, Argentina, (B)	18.830	PLE Bandoeng, Java, (C)	20.730	LSY Monte Grande, Argentina
17.850	RRRV Khabarovsk, Russia	18.860	WKM Rocky Point, N. Y., USA	20.740	DGP Nauen, Germany
17.860	WQC Rocky Point, N. Y., USA	18.890	ZSS Klipheuevel, Un. of So. Africa	20.780	KMM Bolinas, Calif., USA
17.860	RRRV Khabarovsk, Russia	18.910	JVA Tokyo, Japan	20.820	KSS Bolinas, Calif., USA
17.870	RRRV Khabarovsk, Russia	18.950	HBF Prangins, Switzerland	20.825	PFF Kootwijk, Netherlands
17.880	WQI New Brunswick, N. J., USA	18.960	LSR Buenos Aires, Argentina	20.830	PFF Kootwijk, Netherlands
17.890	TFN Reykjavik, Iceland	18.960	EAH Madrid, Spain	20.835	
17.890	FZT Tananarive, Madagascar	18.970	GAG Rugby, United Kingdom	20.860	EDM Madrid, Spain
17.900	WLL Rocky Point, N. Y., USA	18.980	WFX Rocky Point, N. Y. USA	20.860	EDR2 Madrid, Spain
17.900	FZT Tananarive, Madagascar	19.000	HSJ Bangkok, Siam	20.860	EDS Madrid, Spain
17.910	CWO Cerrito, Montevideo, Uruguay	19.010	PSB Marapicu, Brazil	20.860	EHY Madrid, Spain
17.910	RRRV Khabarovsk, Russia	19.030	EDM Madrid, Spain	20.860	EAH Madrid, Spain
17.920	WQF Rocky Point, N. Y., USA	19.030	EDR2 Madrid, Spain	20.960	OKI Podebrady, Czechoslovakia
17.920	RRRV Khabarovsk, Russia	19.030	EDS Madrid, Spain	21.020	LSN Buenos Aires, Argentina, (B)
17.930	RRH Tashkent, Russia	19.030	EHY Madrid, Spain	21.060	KWN Dixon, Calif., USA
17.940	WQB Rocky Point, N. Y., USA	19.160	GAP Rugby, United Kingdom	21.060	WKA Lawrenceville, N. J., USA
17.980	KQZ Bolinas, Calif., USA	19.200	ORG Ryssedele, Belgium	21.080	PSA Marapicu, Brazil
18.030	RRI Novosibirsk, Russia	19.220	WKF Lawrenceville, N. J. USA	21.110	CEC La Granja, Chile
18.040	GAB Rugby, United Kingdom	19.240	DFA Nauen, Germany	21.130	LSM Buenos Aires, Argentina (B)
18.050	RRRX Khabarovsk, Russia	19.250	FZV3 Tananarive, Madagascar	21.140	KBI Manila, Philippine Islands
18.060	KUN Bolinas, Calif., USA	19.260	PPU Sepetiba, Brazil	21.150	HAS4 Szekesfehervar, Hungary (B)
18.060	RRRX Khabarovsk, Russia	19.300	VLK2 Sydney, Australia	21.160	LSL Buenos Aires, Argentina
18.070	RRRX Khabarovsk, Russia	19.355	FTM St. Assise, France	21.180	DGN Nauen, Germany
18.080	---- Camaguey, Cuba	19.380	WOP Ocean Gate, N. J., USA	21.220	WQA Rocky Point, N. Y., USA
18.080	RRRX Khabarovsk, Russia	19.400	LGD Monte Grande, Argentina	21.240	WQJ Rocky Point, N. Y., USA
18.100	RRRX Khabarovsk, Russia	19.400	FRE St. Assise France	21.260	WBU Rocky Point, N. Y., USA
18.110	RRRX Khabarovsk, Russia	19.430	ORH Elisabethville, Belgian Congo	21.340	DGM Nauen, Germany
18.115	LSY3 Monte Grande, Argentina	19.435	EDR2 Madrid, Spain	21.420	WKK Lawrenceville, N. J. USA
18.120	RRRX Khabarovsk, Russia	19.435	EDS Madrid, Spain	21.460	W1XAL Boston, Mass., USA, (B)
18.135	PMC Bandoeng, Java	19.460	DFM Nauen, Germany	21.470	GSH Daventry, United Kingdom, (B)
18.150	---- Camaguey, Cuba	19.500	LSQ Buenos Aires, Argentina, (B)	21.480	---- Warsaw, Poland, (B)
18.150	RRRX Khabarovsk, Russia	19.520	IRW Rome, Italy	21.490	Pontoise, France, (B)
18.160	RRRX Khabarovsk, Russia	19.530	EDR2 Madrid, Spain	21.500	NAA Washington, D. C. USA
18.170	CGA Drummondville, P. Q., Canada	19.530	EDS Madrid, Spain	21.530	GSJ Daventry, United Kingdom, (B)
18.170	RRRX Khabarovsk, Russia	19.600	LSF Monte Grande, Argentina	21.540	W8XK Pittsburgh, Pa., USA
18.190	JVB Tokyo, Japan	19.650	LSN5 Hurlingham, Argentina	21.540	VK3LR Lyndhurst, Vic., Aus., (B)
18.200	GAW Tokyo, United Kingdom	19.656	IRL Rome, Italy	21.550	XGBA Shanghai, China, (B)
18.220	KUS Manila, Philippine Islands	19.680	CEC La Granja, Chile	21.600	CGG Drummondville, P. Q., Canada
18.230	EAH Madrid, Spain	19.700	DFJ Nauen, Germany	22.300	GBU Rugby, United Kingdom
18.240	FRE St. Assise, France	19.720	EAQ Aranjuez, Spain, (B)	22.460	EDS Madrid, Spain
18.240	JVB Tokyo, Japan	19.800	---- Tokyo, Japan	22.520	DGE Nauen, Germany
18.250	FTO St. Assise, France	19.820	WKN Lawrenceville, N. J., USA	22.600	DGF Nauen, Germany
18.295	VVR Maracay, Venezuela	19.840	FTD St. Assise, France	22.760	EDR2 Madrid Spain
18.310	FZS Saigon, Indo China	19.900	LSG Monte Grande, Argentina	22.820	CEC La Granja, Chile
18.310	GBS Rugby, United Kingdom	19.920	HSJ Bangkok, Siam	23.240	HSJ Bangkok, Siam
18.340	WLA Lawrenceville, N. J., USA	19.947	DIH Nauen, Germany	26.100	GSK Daventry, United Kingdom (B)
18.340	ZLW Wellington, N. Z.	19.980	KAX Manila, Philippine Islands	28.000	Amateurs,
18.345	FZS3 Saigon, French Indo-China				
18.390	---- Warsaw, Poland				
18.400	PCK Kootwijk, Netherlands	20.020	DHO Nauen, Germany	30.000	
18.405		20.040	OPL Leopoldville, Belgian Congo	29.817	IAF Fiumicino, Italy
18.410	PCK Kootwijk, Netherlands	20.140	DGW Nauen, Germany	30.604	IAG Golfo Aranci, Italy
18.411	VWZ Kirkee, India	20.140	DWG Nauen, Germany	36.144	TYZ Calenzana, France
18.413		20.165	---- Warsaw, Poland	36.300	KGXM Waikiki, Hawaii
18.420	VWZ Kirkee, India	20.180	WQX Rocky Point, N. Y., USA	36.800	---- Amateur and Experimental, Japan, (X)
18.427		20.260	WQQ Rocky Point, N. Y., USA	37.400	KGXC Manawahua, Hawaii
18.429		20.310	RFAJ Moscow, Russia	39.473	TY4 La Turbie, France
18.480	HBH Prangins, Switzerland	20.360	EAH Madrid, Spain	39.600	KGXA Manawahua, Hawaii
18.535	PCM Kootwijk, Netherlands	20.380	GAA Rugby, United Kingdom	40.700	KGXJ Ulupalakua, Hawaii
18.535	---- Warsaw, Poland	20.400	VLK7 Sydney, Australia	41.040	LQL Monte Grande, Argentina
18.540	PCM Kootwijk, Netherlands	20.430	IRK Rome, Italy	41.400	LQK Monte Grande, Argentina
18.545	PCM Kootwijk, Netherlands	20.500	DGG Nauen, Germany	46.200	KGXO Kalepa, Hawaii
18.595	GLS Ongar, United Kingdom	20.570	EDR2 Madrid, Spain	47.300	KGXB Manawahua, Hawaii
18.600	PDM Kootwijk, Netherlands	20.570	EDS Madrid, Spain	48.400	KGXH Ulupalakua, Hawaii
18.610	RRK Tiflis, Russia	20.570	ETHX Madrid, Spain	49.500	KGXK Waikiki, Hawaii
18.620	GBJ Bodmin, United Kingdom	20.585	ORS Stanleyville, Belgian Congo	56.000	Amateurs, USA
18.620	GAU Rugby, United Kingdom	20.595	ORL Leopoldville, Belgian Congo	to	
18.630	IRZ Rome, Italy	20.610	EAH Madrid, Spain	60.000	
18.640	PSC Marapicu, Brazil	20.620	CEC La Granja, Chile	400.000	Amateurs, USA
18.680	OCI Lima, Peru	20.640	FSR Paris France	to	
18.680	GAX Rugby, United Kingdom	20.670	EHX Madrid, Spain	401.000	
18.700	DFG Nauen, Germany	20.680	LSN Buenos Aires, Argentina, (B)		
18.770	TYD3 Paris, T.S.F., France	20.680	LSX Monte Grande, Argentina, (B)		

15 TO 6 METERS

B=Broadcasting; X=Experimental.



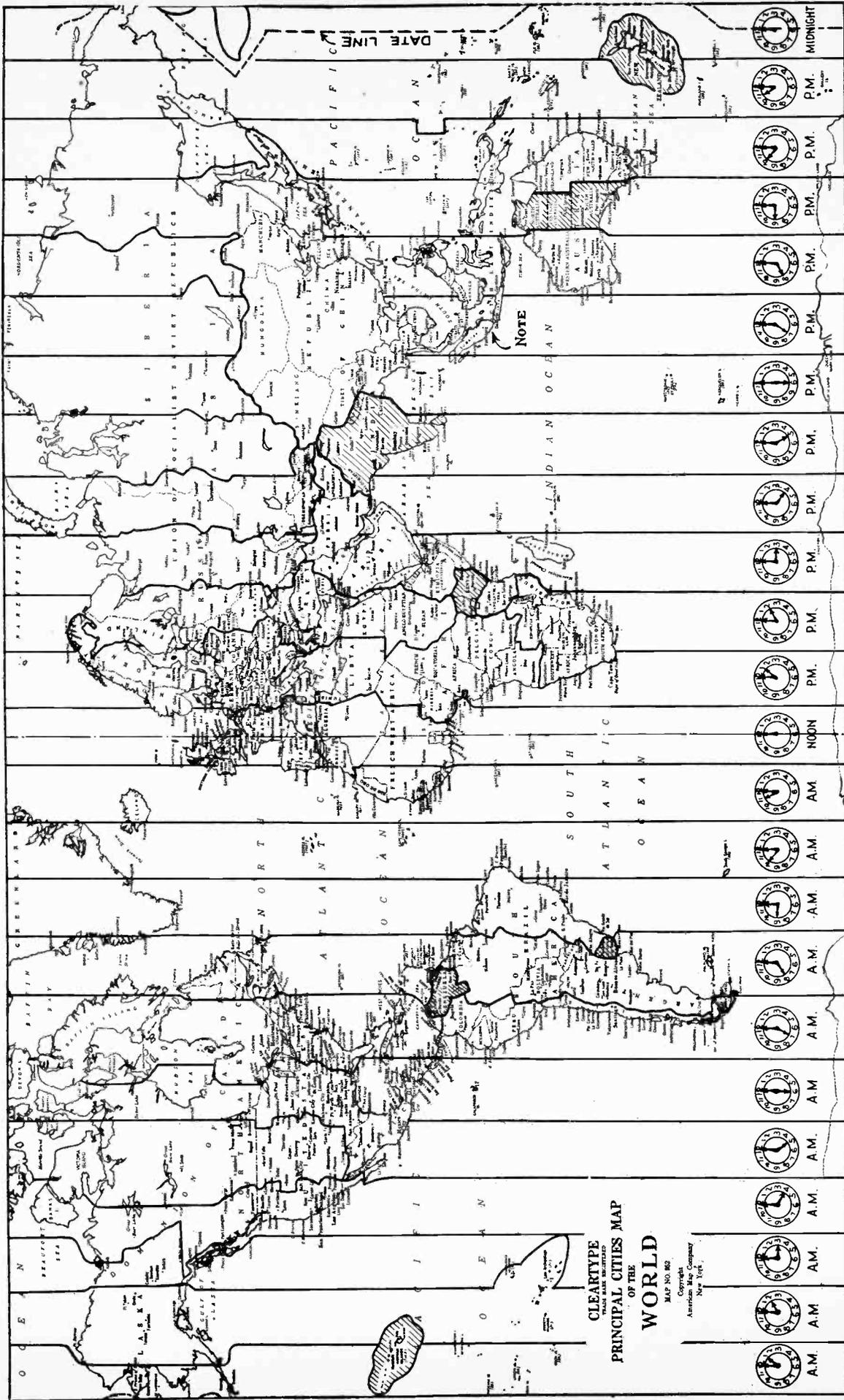
# Kilocycle Meter Conversion Table

WITH this simplified chart, meters can be converted into kilocycles 10 is meters, 29.982 will be kilocycles; or if 10 were kilocycles, the or vice versa, very simply. For instance, in the first column if other would be 29.982 meters.

kc or m	m or kc																				
10	29.982	1,010	296.9	2,020	149.2	3,030	99.61	4,040	74.77	5,050	59.84	6,060	49.89	7,070	42.77	8,080	37.43	9,090	33.28	10,100	33.28
20	14.991	1,020	293.9	2,040	148.4	3,060	99.28	4,080	74.58	5,100	59.73	6,120	49.80	7,140	42.71	8,160	37.38	9,180	33.24	10,200	33.24
30	9.994	1,030	291.1	2,060	147.7	3,080	98.95	4,100	74.40	5,120	59.61	6,140	49.72	7,160	42.65	8,180	37.34	9,200	33.20	10,220	33.20
40	7.496	1,040	288.3	2,080	147.0	3,100	98.62	4,120	74.21	5,140	59.49	6,160	49.64	7,180	42.59	8,200	37.29	9,220	33.17	10,240	33.17
50	5.996	1,050	285.5	2,100	146.3	3,120	98.30	4,140	74.03	5,160	59.37	6,180	49.56	7,200	42.53	8,220	37.24	9,240	33.13	10,260	33.13
60	4.997	1,060	282.8	2,120	145.5	3,140	97.98	4,160	73.85	5,180	59.25	6,200	49.48	7,220	42.47	8,240	37.20	9,260	33.09	10,280	33.09
70	4.283	1,070	280.2	2,140	144.8	3,160	97.66	4,180	73.67	5,200	59.13	6,220	49.39	7,240	42.41	8,260	37.15	9,280	33.06	10,300	33.06
80	3.748	1,080	277.6	2,160	144.1	3,180	97.34	4,200	73.49	5,220	59.02	6,240	49.31	7,260	42.35	8,280	37.11	9,300	33.02	10,320	33.02
90	3.331	1,090	275.1	2,180	143.5	3,190	97.03	4,210	73.31	5,230	58.90	6,250	49.23	7,270	42.29	8,300	37.06	9,320	32.98	10,340	32.98
100	2.998	1,100	272.6	2,200	142.8	3,200	96.72	4,220	73.13	5,240	58.79	6,260	49.15	7,280	42.23	8,320	37.01	9,340	32.95	10,360	32.95
110	2.726	1,110	270.1	2,220	142.1	3,220	96.41	4,240	72.95	5,260	58.67	6,280	49.07	7,300	42.17	8,340	36.97	9,360	32.91	10,380	32.91
120	2.499	1,120	267.7	2,240	141.4	3,240	96.10	4,260	72.77	5,280	58.56	6,300	48.99	7,320	42.11	8,360	36.92	9,380	32.88	10,400	32.88
130	2.306	1,130	265.3	2,260	140.8	3,260	95.79	4,280	72.60	5,300	58.44	6,320	48.91	7,340	42.05	8,380	36.88	9,400	32.84	10,420	32.84
140	2.142	1,140	263.0	2,280	140.1	3,280	95.48	4,300	72.42	5,320	58.33	6,340	48.83	7,360	41.99	8,400	36.83	9,420	32.82	10,440	32.82
150	1.999	1,150	260.7	2,300	139.5	3,300	95.18	4,320	72.25	5,340	58.22	6,360	48.75	7,380	41.93	8,420	36.79	9,440	32.77	10,460	32.77
160	1.874	1,160	258.5	2,320	138.8	3,320	94.88	4,340	72.07	5,360	58.10	6,380	48.67	7,400	41.87	8,440	36.74	9,460	32.73	10,480	32.73
170	1.764	1,170	256.3	2,340	138.1	3,340	94.58	4,360	71.90	5,380	57.99	6,400	48.59	7,420	41.82	8,460	36.70	9,480	32.70	10,500	32.70
180	1.666	1,180	254.1	2,360	137.5	3,360	94.28	4,380	71.73	5,400	57.88	6,420	48.51	7,440	41.76	8,480	36.65	9,500	32.66	10,520	32.66
190	1.578	1,190	252.0	2,380	136.9	3,380	93.99	4,400	71.57	5,420	57.77	6,440	48.44	7,460	41.70	8,500	36.61	9,520	32.62	10,540	32.62
200	1.499	1,200	249.9	2,400	136.3	3,400	93.69	4,420	71.39	5,440	57.66	6,460	48.36	7,480	41.64	8,520	36.56	9,540	32.59	10,560	32.59
210	1.428	1,210	247.8	2,420	135.7	3,420	93.40	4,440	71.22	5,460	57.55	6,480	48.28	7,500	41.58	8,540	36.52	9,560	32.55	10,580	32.55
220	1.363	1,220	245.8	2,440	135.1	3,440	93.11	4,460	71.05	5,480	57.44	6,500	48.20	7,520	41.53	8,560	36.47	9,580	32.52	10,600	32.52
230	1.304	1,230	243.8	2,460	134.4	3,460	92.82	4,480	70.88	5,500	57.33	6,520	48.13	7,540	41.47	8,580	36.43	9,600	32.48	10,620	32.48
240	1.249	1,240	241.8	2,480	133.8	3,480	92.54	4,500	70.71	5,520	57.22	6,540	48.05	7,560	41.41	8,600	36.39	9,620	32.45	10,640	32.45
250	1.199	1,250	239.9	2,500	133.3	3,500	92.25	4,520	70.55	5,540	57.11	6,560	47.97	7,580	41.35	8,620	36.34	9,640	32.41	10,660	32.41
260	1.153	1,260	238.0	2,520	132.7	3,520	91.97	4,540	70.38	5,560	57.00	6,580	47.89	7,600	41.30	8,640	36.30	9,660	32.38	10,680	32.38
270	1.110	1,270	236.1	2,540	132.1	3,540	91.69	4,560	70.22	5,580	56.89	6,600	47.82	7,620	41.24	8,660	36.25	9,680	32.34	10,700	32.34
280	1.071	1,280	234.2	2,560	131.5	3,560	91.41	4,580	70.05	5,600	56.78	6,620	47.74	7,640	41.18	8,680	36.21	9,700	32.31	10,720	32.31
290	1.034	1,290	232.3	2,580	130.9	3,580	91.13	4,600	69.89	5,620	56.68	6,640	47.67	7,660	41.13	8,700	36.17	9,720	32.27	10,740	32.27
300	999.4	1,300	230.6	2,600	130.4	3,600	90.86	4,620	69.73	5,640	56.57	6,660	47.59	7,680	41.07	8,720	36.12	9,740	32.24	10,760	32.24
310	967.2	1,310	228.9	2,620	129.8	3,620	90.58	4,640	69.56	5,660	56.46	6,680	47.52	7,700	41.02	8,740	36.08	9,760	32.20	10,780	32.20
320	936.9	1,320	227.1	2,640	129.2	3,640	90.31	4,660	69.40	5,680	56.36	6,700	47.44	7,720	40.96	8,760	36.04	9,780	32.17	10,800	32.17
330	908.6	1,330	225.4	2,660	128.7	3,660	90.04	4,680	69.24	5,700	56.25	6,720	47.36	7,740	40.90	8,780	36.00	9,800	32.14	10,820	32.14
340	881.8	1,340	223.7	2,680	128.1	3,680	89.77	4,700	69.08	5,720	56.15	6,740	47.29	7,760	40.85	8,800	35.95	9,820	32.10	10,840	32.10
350	856.6	1,350	222.1	2,700	127.6	3,700	89.50	4,720	68.92	5,740	56.04	6,760	47.22	7,780	40.79	8,820	35.91	9,840	32.07	10,860	32.07
360	832.8	1,360	220.4	2,720	127.0	3,720	89.23	4,740	68.77	5,760	55.94	6,780	47.14	7,800	40.74	8,840	35.86	9,860	32.03	10,880	32.03
370	810.3	1,370	218.8	2,740	126.5	3,740	88.97	4,760	68.61	5,780	55.83	6,800	47.07	7,820	40.68	8,860	35.82	9,880	32.00	10,900	32.00
380	789.0	1,380	217.3	2,760	126.0	3,760	88.70	4,780	68.45	5,800	55.73	6,820	46.99	7,840	40.63	8,880	35.78	9,900	31.96	10,920	31.96
390	768.8	1,390	215.7	2,780	125.4	3,780	88.44	4,800	68.30	5,820	55.63	6,840	46.92	7,860	40.57	8,900	35.74	9,920	31.93	10,940	31.93
400	749.6	1,400	214.2	2,800	124.9	3,800	88.18	4,820	68.14	5,840	55.53	6,860	46.85	7,900	40.52	8,920	35.69	9,940	31.90	10,960	31.90
410	731.3	1,410	212.6	2,820	124.4	3,820	87.92	4,840	67.99	5,860	55.42	6,880	46.77	7,920	40.46	8,940	35.65	9,960	31.86	10,980	31.86
420	713.9	1,420	211.1	2,840	123.9	3,840	87.67	4,860	67.83	5,880	55.32	6,900	46.70	7,940	40.41	8,960	35.61	9,980	31.83	11,000	31.83
430	697.3	1,430	209.7	2,860	123.4	3,860	87.41	4,880	67.68	5,900	55.22	6,920	46.63	7,960	40.35	8,980	35.57	9,990	31.79	11,020	31.79
440	681.4	1,440	208.2	2,880	122.9	3,880	87.16	4,900	67.53	5,920	55.11	6,940	46.56	7,980	40.30	9,000	35.52	9,990	31.76	11,040	31.76
450	666.3	1,450	206.7	2,900	122.4	3,900	86.90	4,920	67.38	5,940	55.01	6,960	46.48	8,000	40.24	9,000	35.48	9,990	31.73	11,060	31.73
460	651.8	1,460	205.4	2,920	121.9	3,920	86.65	4,940	67.22	5,960	54.91	6,980	46.41	8,020	40.19	9,020	35.44	9,990	31.69	11,080	31.69
470	637.9	1,470	204.0	2,940	121.4	3,940	86.40	4,960	67.07	5,980	54.81	7,000	46.34	8,040	40.14	9,040	35.40	9,990	31.66	11,100	31.66
480	624.6	1,480	202.6	2,960	120.9	3,960	86.16	4,980	66.92	6,000	54.71	7,020	46.27	8,060	40.08	9,060	35.36	9,990	31.63	11,120	31.63
490	611.9	1,490	201.2	2,980	120.4	3,980	85.91	5,000	66.78	6,020	54.61	7,040	46.20	8,080	40.03	9,080	35.31	9,990	31.59	11,140	31.59
500	599.6	1,500	199.9	3,000	119.9	4,000	85.66	5,000	66.63	6,000	54.51	7,000	46.13	8,000	39.98	9,000	35.27	9,990	31.56	11,160	31.56
510	587.9	1,510	198.6	3,020	119.5	4,020	85.42	5,020	66.48	6,020	54.41	7,020	46.06	8,020	39.92	9,020	35.23	9,990	31.53	11,180	31.53
520	576.6	1,520	197.2	3,040	119.0	4,040	85.18	5,040	66.33	6,040	54.32	7,040	45.99	8,040	39.87	9,040	35.19	9,990	31.49	11,200	31.49
530	565.7	1,530	196.0	3,060	118.5	4,060	84.94	5,060	66.19	6,060	54.22	7,060	45.91	8,060	39.82	9,060	35.15	9,990	31.46	11,220	31.46
540	555.2	1,540	194.7	3																	

# STANDARD TIME ZONES OF THE WORLD AND OUTLINE CHART OF THE WORLD'S COUNTRIES

NOTE: USE MAGNIFYING GLASS TO READ CITIES



Note: Since Holland keeps Amsterdam time, which is 20 minutes faster than standard, the Dutch East Indies are 1 hour 20 minutes faster than Greenwich time. New Zealand, Central Australia, Kenya, Uruguay, Venezuela, and the Hawaiian Islands are on half-hour standards, intermediate between the zones whose boundaries they cross; and China, Persia, Arabia, Abyssinia, etc., have no standard time. India is on a half-hour schedule, in the west; and Ceylon is 7 minutes slower than standard.

Time, at any moment, is reckoned one hour later, or faster, for each zone we cross toward the east, or right side of the page; and one hour earlier, or slower, for each one going west. The clocks show the time, at each place in the world, when the day is ending at the Date Line at the right of the page. Add the difference in time (as shown between the zone clocks) between your position and any station east of you, to your own time, to determine the time at that station; but subtract the difference in time from your own time, if the station is west of you; or consult the Time Conversion Table on another page.

**Vote For Subjects You Like**

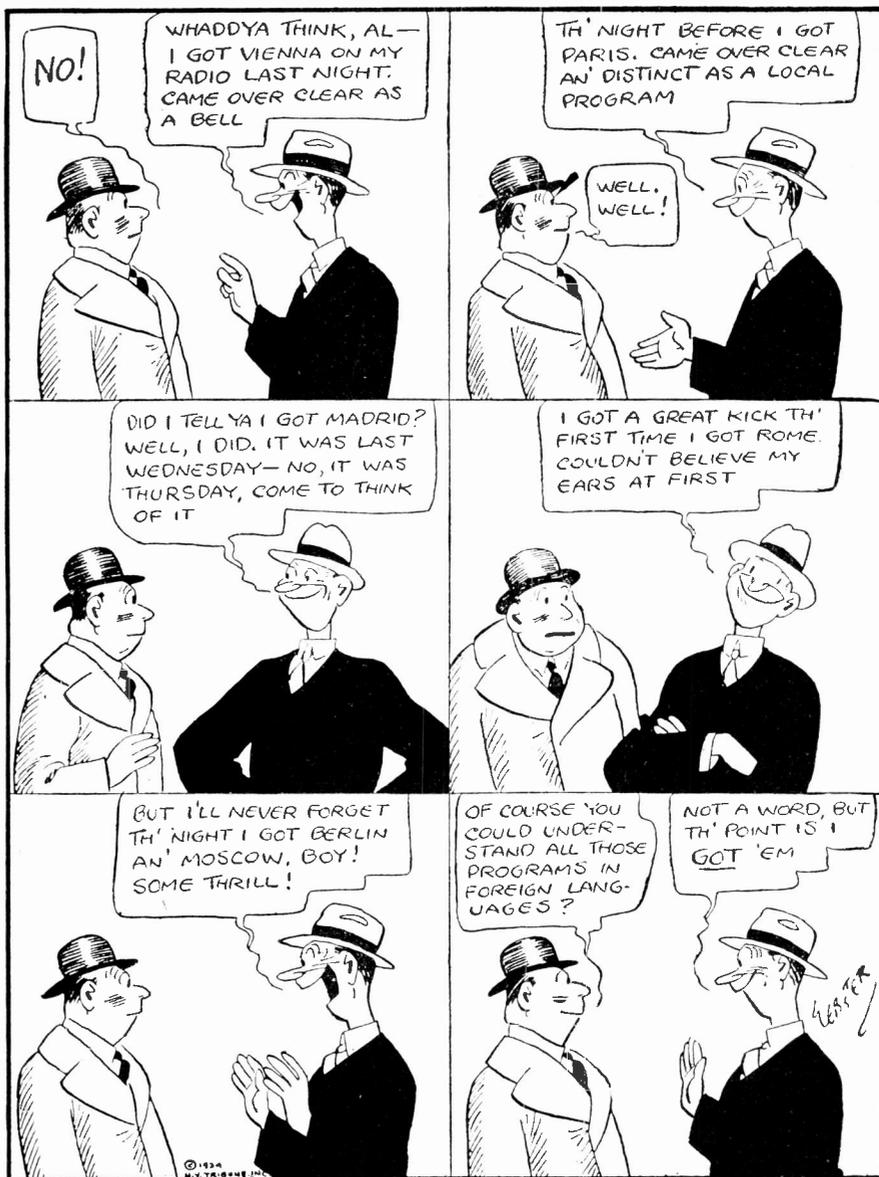
• THE editors are particularly anxious to make the OFFICIAL SHORT WAVE LISTENER just the kind of publication you would like it to be; therefore, will you please be good enough to take a few minutes time and glance down the accompanying list of subjects and either cut out the marked ballot, or send a copy of it to the editor, OFFICIAL SHORT WAVE LISTENER, 99-101 Hudson Street, New York City.

SUBJECTS	More	Less
Description and Photos of S-W Broadcasting Stations		
Photos and Stories About Short-Wave Artists		
General Short-Wave Articles by Leaders of the Industry		
Hints on Using Headphones with Large Sets		
More Information on "Veri" Cards		
How to Tune in Short Waves		
Theory Articles on Short-Wave Transmission		
How to "Log" Stations		
How to "Calibrate" S-W Receivers		
The Listener Asks		
"Best Time to Listen In" Department		
Photos and Descriptions of "Fan" Listening Stations		
Short-Wave Fiction (Stories)		
Musical Signatures—What they Mean		
Short-Wave Time Charts		
Meaning of Spanish, French, and German Words		
Use of Beat Oscillator for DX Hunting		
Kilocycle Versus Meters Conversion Chart		
Antenna Construction		
List of S-W Stations of the World		
"Star" Station List		
Police and Airport Stations		
Short-Wave "Map" of the World		
"Time Zone" Charts		
"Listening Post" Reports from Individual Stations		
Table of "Airline" Distances Between Various Cities		
Television Articles—News, Etc.		
Where S-W Stations "Come in" On YOUR Dial		

**The Nairobi, Africa S-W Station**

• The Nairobi Broadcasting Station was opened in August, 1928, with the object of providing the whole of Kenya Colony (Africa), with programs at reasonable strength for at least three hours daily. In view of the curious geographical formation and the equally unusual distribution of population in this Colony, it was found necessary, after considerable experimental work, to utilize two wave-lengths simultaneously for this service. The considerable population living within 50 miles of Nairobi is served by a transmitter working on 350 metres (858 kc.), while listeners beyond that distance receive a service from another transmitter, radiating the same program on VQ7LC, 49.5 meters (6060 kc.) It will be realized that as the whole of Kenya Colony is situated within a few degrees of the Equator, the static level is so high on the long wave-

**The Boy Who Made Good** : : : BY WEBSTER



Courtesy, N. Y. Herald-Tribune

lengths that reception of the 350 meter transmissions is rarely possible at greater distances than 50 miles!

The whole of the equipment comprising transmitters, control room, studio, etc., is situated at Kabete, about 5 miles from Nairobi, and approximately 6000 feet above sea-level.

Each transmitter consists essentially of five stages, viz.; oscillator, isolator, modulated amplifier, final amplifier, and modulator. Air-cooled valves are used throughout. Modulation is carried out at low power (about 60 watts) and the modulated radio-frequency currents are then amplified by the final stage, which delivers about 500 watts to the aerial.

The aerial used with the 350 meter transmitter is a plain "T," one end being supported from steel mast which also helps to carry the beam aerial used by station V.Q.G., while the other is at-

tached to an 80 ft. wooden mast. This wooden mast also serves to carry the matched-impedance half-wave 49.5 meter aerial, the other end of which is secured to another beam mast.

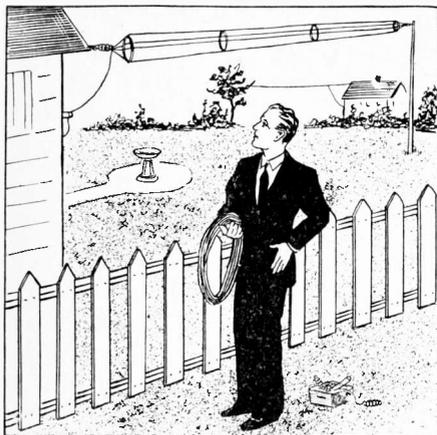
The 49.5 meter aerial is energized by means of parallel-wire feeders. Power is obtained from the local electricity supply, being taken at 10,000 volts 3-phase, 50 cycles, and transformed down to 415 volts 3-phase for distribution.

British equipment is exclusively used throughout the station.

Programs are largely derived from phonograph records, although occasional talks are given from the studio. On occasion of special interest, the short-wave British Empire Station at Daventry (England), is relayed, the reception taking place at the beam receiving station situated some five miles from the

(Continued on page 189)

# THE LISTENER



Choosing the proper antenna is quite a problem for the short-wave "Fan."

## LIGHTNING ARRESTER FOR DOUBLET ANTENNAS

Arthur Blackley, Springfield, Mass.

(Q) I have recently constructed a new doublet antenna, however, I have not seen any printed information regarding the lightning arresters or protection against lightning necessary for this type of antenna. I would like to know whether I need a special switch or lightning arrester and just how it should be connected.

(A) All radio receiver antennas, regardless of the type, require some sort of protection against lightning and probably the most convenient and simplest method of obtaining this protection is through the use of the so-called *lightning arresters*, because if a switch were used, one is liable to forget to throw it in the grounding position and therefore it is not really 100% safe. In the case of doublet antennas two lightning arresters or a special double lightning arrester is necessary. Where two separate arresters are used, they should be connected to each of the two lead-ins and the remaining connection on each lightning arrester should be connected, to the ground.

Lightning does not often strike the radio aerial. Recently, however, we had an experience where the antenna was struck and melted loose from the supporting insulator, even though it was fully protected with lightning arresters, so by all means, use some safety device because you are not only in danger of having the antenna torn down by the lightning, but in some cases the receiving set suffers a great amount of damage, which will amount to considerably more than the price of a few fairly cheap arresters. The fire insurance companies require adequate protection against lightning strokes and should damage be done in your

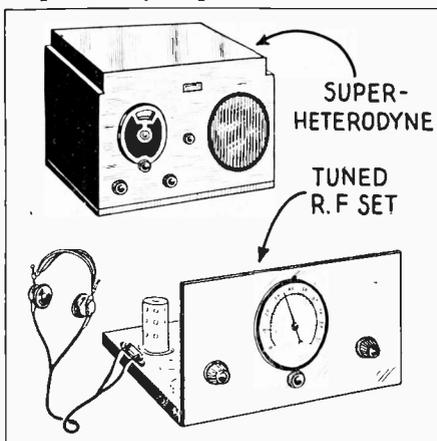
home and it were proven that the aerial was not equipped with the necessary protective devices you would not be able to collect from the insurance company.

## CAGE OR SINGLE WIRE ANTENNA?

Frank Olson, Cincinnati, Ohio.

(Q) A number of my friends have informed me that I would obtain better results if I were to replace my present single wire antenna with a multi-wire cage-type antenna; however, it seems that I have read somewhere that for general reception, the cage antenna offers no appreciable advantage over the single wire type. I would be pleased to have your opinion in this matter.

(A) From our personal experience in the past, we can safely say that it is practically impossible to notice the



The advantages of both the superhet and the T.R.F. receivers are explained in the text.

difference between an antenna consisting of just one single wire and one having several wires built in the form of a cage antenna. We do not believe it would be worthwhile to replace the single wire antenna. It would be much better for you to check your present antenna and make sure that it is of proper length and well insulated. Some worthwhile data on short-wave antennas was given in the last issue of the LISTENER.

## SCRAMBLED SPEECH

Frank Wiley, Providence, R. I.

(Q) I heard a good many short-wave stations transmitting what appears to be voice, but I am not able to bring it in clear enough to understand what they are saying. These stations come in very loud and I can hear them most any time of the day or night. I wish you would be kind enough to let me know whether this is a natural condition or whether there is something

wrong with my receiver or location.

(A) Undoubtedly the stations you referred to are those used by the telephone companies for their long-distance short-wave telephone work. There are a great many of these stations in operation during the day and evening and the speech has been purposely *scrambled* in order that you and other experimenters cannot listen in on the private telephone conversation. There is a machine which is used in the receiving station to *unscramble* the voice and make it sound natural to the parties holding the conversation. Elsewhere in this issue you will find more complete data concerning this subject.

## T.R.F. OR SUPERHETERODYNE RECEIVER?

Oliver Campbell, Atlantic City, N. J.

(Q) I have recently started buying your LISTENER MAGAZINE and find it just what I am looking for as I am becoming interested in short waves. However, I am about to purchase a receiver and do not know whether to buy a superheterodyne or a T.R.F. (tuned radio frequency) receiver. I would appreciate your comments and will undoubtedly follow your advice.

(A) Of course, in purchasing a short-wave receiver, or any radio receiver for that matter, the quality of the set you purchase is in all cases dependent upon the amount of money you pay for it. The higher priced sets, of course, do perform better than the cheaper ones. Regarding the tuned R.F. and superhet receivers, we can only say that a good superheterodyne is always better than a tuned R.F. set; a cheap superheterodyne or one that is poorly designed cannot be compared with a properly designed T.R.F. set. Our advice is that you either purchase a good T.R.F. receiver or a good superheterodyne.



The peculiar sounds that you hear coming over some short-wave stations are usually "scrambled speech."

# ASKS

Only questions of general "Listener" interest will be answered here. No queries can be answered by mail. No diagrams of a technical or

involved nature will be given here—only those which the Editors feel will be of value to the average nontechnical "Short-Wave Listener."

## HOME RECORDING

Frank Wilson, Buffalo, N. Y.

(Q) I am interested in recording programs and would like to know just how to go about the situation. I do not wish to spend a large sum of money, however, I want to do a successful job. Your advice will be appreciated very much.

(A) There are a great many methods by which program may be recorded. The simplest and best arrangement would be to either purchase or build a power amplifier with an output from 3 to 6 watts and procure a turn table and cutting head or recording head, which ever you may prefer. With this equipment the output of the short-wave receiver if it is an earphone set, will be connected to the amplifier and the recording head will connect to the output of the small amplifier. For more powerful receivers special connections can be made so that the recording instrument connects directly to the output amplifier of your radio set.

If you are a reader of SHORT WAVE CRAFT and have saved your back copies, we suggest that you refer to the February 1935 issue on page 586 of which there is a very elaborate article covering all the angles of home recording.

## HOW TO GET "VERIS"

George Miller, Los Angeles, Calif.

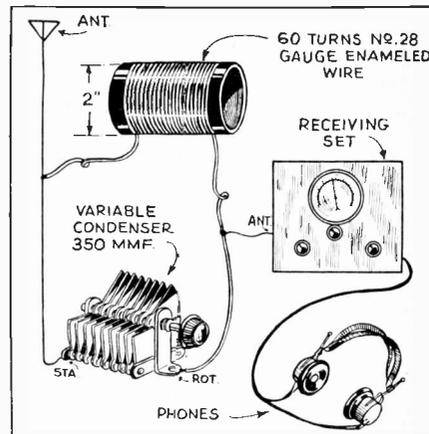
(Q) I have read a great deal about the different contests sponsored by SHORT WAVE CRAFT and the SHORT WAVE LISTENER where prizes are awarded to those submitting a large number of verification cards. Please be kind enough to explain just how to go about obtaining verification cards as I would like to enter one of your contests.

(A) Probably the easiest way to



Keeping a log-book is beneficial when collecting veris.

obtain verification cards from foreign stations is to write them a letter explaining the type of program heard, the date and time, together with whatever comments you feel will be interesting to the station operators. If you give them information regarding the quality, etc., of their program, you will of course be aiding them and stand more of a chance of receiving a card from them. In most cases it is advisable to include in your letter an International Reply Coupon, costing but 9 cents at your local postoffice, in order that the station will not have to bear the cost of answering your letter. As they receive hundreds of letters daily you can appreciate the cost is quite great and many listeners fail to obtain verifications because they do not forward the necessary postage. Do not, of course, send them American stamps.



Eliminating broadcast interference from short-wave receivers.

## BROADCAST INTERFERENCE ON SHORT WAVES

Tom Kerry, Detroit, Mich.

(Q) I have a 4-tube short-wave receiver and experience a great deal of trouble due to interference from a local broadcast station. I have been told that this trouble can be cleared up by inserting a wave-trap in the circuit. Will you please inform me as to just what a wave-trap is and also let me know if such a device as this will eliminate such interference? I can hear this station all over the S-W hands and of course, cannot receive short-wave stations unless the broadcast transmitter has gone off the air.

(A) A wave-trap consists of a coil of wire and a condenser and is a very simple device to construct. The condenser is connected across the coil and the whole circuit is then tuned exactly to the frequency of the broadcast station and is very effective; it will undoubtedly eliminate the trouble you are experiencing. In the drawing we have shown the connections for the wave trap and how to construct the coil.

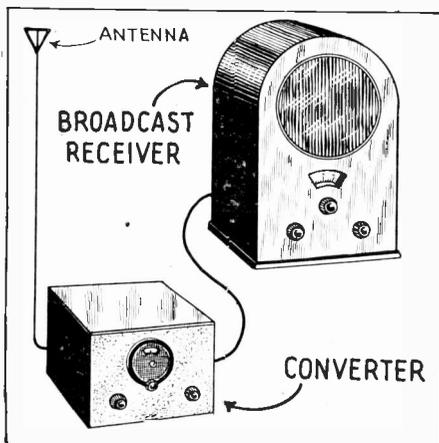
Other short-wave "Fans" experiencing similar trouble will do well to construct this wave trap.

## WHAT KIND OF ANTENNA WIRE?

Paul Ames, Wichita, Kansas.

(Q) I am going to put up a new short-wave antenna, however, the question of the type of wire to use arises and I am consulting you for advice.

(A) In most cases we prefer the enameled wire for short-wave antennas. This can either be solid number 12 or 14, or stranded wire such as the popular type having 7 strands of 22 gauge, with each strand enameled. The stranded wire is much easier to handle, inasmuch as it does not kink, although there is no difference in the efficiency.



The short-wave converter and broadcast receiver, versus a modern "all-wave" receiver.

## CONVERTER OR ALL-WAVE SET?

Walter Sullivan, Allentown, Pa.

(Q) I have heard a great many comments regarding shortwave converters and wonder if you would be kind enough to advise me through your columns which is the best; a regular all-wave receiver or a standard broadcast set operated in conjunction with a short-wave converter?

(A) If you are referring to a good short-wave converter, such as those having 3 or 4 tubes, there is really no difference between a combination of such a converters and a regular broadcast receiver, and a complete all-wave superhet. If you have a good sensitive broadcast receiver we see no reason why you should not use a converter in conjunction with it, however, if your broadcast set is of the old style, we believe you will have much better results with some of the newer up-to-date all-wave receivers.

wouldn't mean anything to you. But I am afraid I am going to have just one more noise to battle. When that shoe repair shop moved out of the building next door to the bank it sure cut my noise, and I have been expecting something to take its place just to make sure I don't get through to GSE or DJC."

Land soldered the final connections on the coil socket leads.

"Well, I guess we're ready for the test," he announced, plugging in an old tube and snapping the switch. "She lights—no shorts!" He replaced it with three good tubes and inserted a coil. "Turn off the big set, will you?"

As Kurt silenced the *all-waver*, Dick pushed the toggle to "On." Whirling the rheostat and moving the dial he let out a whoop. "Hooray, success, she works the first time. Last time I tried to build a set I had to tear it down three times before I could get it going."

"What do you hear?"

"Nothing but noise yet. Listen... there... that new noise is in here." The grinding and crunching and frying vibrated the high-pitched, tiny cone. "Must be close. I tell you what, grab your hat and we'll walk around the block with it and see if we can locate the noise."

Land reached for his coat, hunched into it and picked up the baby set, resting it tenderly on a crooked forearm.

"I hope nobody will hear it," muttered the reporter as the pair descended the stairs to the street level.

"Don't worry, nobody will pay any attention to us," laughed Dick. "This set hasn't enough volume for that."

They paced slowly down the street to the left. At the corner, they swung again to the left. "Getting weaker now," commented Land. At the next corner, they once again turned left. Here it was still fainter. "Going the wrong way, I guess," suggested Karl.

"Yeah." They completed the circuit of the block. "Getting louder now... well, I'll be darned! It's loudest right in front of the house. It would be. But I didn't notice anybody moving into the neighborhood lately."

"Well, you can't watch all the apartments around here."

"No, but I sure as heck can hear 'em!"

"Yes. Where to now?"

"Straight across the street, I guess. We'll go around the other block, it may be over there."

They stepped off the curb and crossed to the bank.

"Say! You can really hear it now. It tops everything else. Come on!" The reporter, catching Land's enthusiasm of the chase, increased his pace to meet that of the radio fan as they hopped the curb and swung off to the right along the sidewalk.

They neared and turned a corner. "Getting a little weaker," muttered Dick.

"When we circle this block we should know which way to go, anyway," put in Rexford.

"Right. Say, that's funny, it gets louder again as we get around near my place. See, the noises just seek me out!"

## Just Another Racket!

(Continued from page 152)

They neared the bank again as they completed the circuit.

"Yes, it's louder here all right."

"Must be coming from the bank. That's funny. Nobody there at this hour."

"Wait a minute, Dick, turn back a bit. It was louder back a bit." The two, engrossed in the man made static which rippled from the little speaker, paced back and forth along the sidewalk.

"You're right, Kurt, it's loudest right here." They looked about. "That's darn funny. This shoe shop has been empty for a week and there shouldn't be anybody or anything in there to make a noise."

"What do you think it is?"

"I don't know. Maybe in pulling out the machines they left a wire hanging or something."

"But," interposed the reporter, "the juice would be off. Anyway, the noise would be continuous, wouldn't it? You said it came on at the same time every night."

"That's right, all right. Well, it's got me. I guess I will have to wait till morning and phone the trouble department of the electric company. Maybe they can find something."

"Well, good luck, noise hunter. I guess I'd better be drifting as tomorrow is Nick's day off and I'll have two beats to cover."

"Yeah, O.K., g'nite, Kurt. I guess I'll fool around a bit as tomorrow's my day off at the theatre."

"G'nite."

Kurt, winding up his lunch hour with a game of poker in the press room of the police station the following morning, was interrupted by the telephone.

"Hullo?"

"Lo, Kurt? Say, listen. This is Dick. Say you know that noise last night? Yeah, well the light company is over there now and they just found some wires attached at the meter—somebody jumped the meter and is tapping the juice. Yeah. The wires run down into the basement of the vacant store. I gotta get back and see what they find. I thought maybe you could run up in case it is a story. Yeah. Goodbye."

Dick hung up the receiver and dashed back across the street. "Find anything else?" he demanded of the trouble-shooters as he appeared on the scene.

"Wires go downstairs along a hall and through the wall," was the reply. "We can't force the door so we don't know what's on the other side. If anybody is using the basement they must come in from the alley and that means they are up to no good, so we are going to notify the cops to bust open the door. Gotta phone around here?"

"Yeah, sure, right across the street," panted Dick.

A prowler car was soon racing to the scene—with Kurt aboard.

The trouble-shooters and the short-wave listener met then in the alley. As the cops examined the door, Kurt remarked, "Looks like somebody might be tunneling into the bank."

"I was thinking of that," answered a policeman. "That's a husky padlock on the door and it's been used recent. Look at the key scratches."

"If that's the case, somebody ought to lay for the guy. It's a cinch, there's nobody in there now, because the door's locked from the outside."

The police debated. "I think we'd better report to central station and see about having someone hide here."

IT WAS dark in the hallway. The sun had long since set and Dick and two burly detectives were becoming impatient with the delay as they crouched, cramped, behind the stairway. Their only diversion was the portable set which brought in a few amateurs, the police calls and Lindbergh Field radio reports.

Snatches of hoarse music spotted the dial.

"What station's that?" the officers asked whenever Dick passed one.

"Just a harmonic," he explained. "KGB has 'em all over the dial. It's funny, you get a lot of KGB harmonics but only a few from KFSB."

"Uh-huh."

At last, after weary hours, a noise was heard in the alley.

"Douse that set," commanded the detective in a loud whisper. "Somebody's comin'."

Footsteps descended the stairs. Boards cracked inches overhead. A flashlight cut through the darkness like a yellow claw. The trio froze, afraid of discovery.

The back of a man, overcoated, felt-hatted, appeared before the door. He flashed his light on the lock, inserted a key...

The door swung open.

"Up with 'em, we got you covered!" roared the detectives. They sprang forward from their hiding place and quickly secured their victim.

"Gonna rob a bank, eh?" snarled one. "Now we'll see what you got in here." Grabbing the man's flashlight, one of the officers swung it around the room. A desk lamp stood on a box. He switched it on. "Oh ho, what's all this?" he exclaimed.

"What's this, you mean," retorted the other, holding up a small black object from which a cord dangled. "Found it in this bird's pocket."

Dick pushed into the room. "Plug it in, plug it in," he cried. The detectives, who had forgotten him, stared blankly for a moment. Dick snatched the instrument and quickly inserted the plug in a receptacle. It vibrated sharply in his hand.

"See, see," he shouted, as he snapped on the radio. "That's the noise I heard, every night at 8:30." A fine buzz was agitating the cone.

"Holy cats! It's an engraving need-  
le!"

A light spread over the second de-  
tective's face. "I thought I recognized  
you," he boomed at the stranger.  
"Greenback Murphoni, the counterfeiter!  
You sure picked a swell spot to work  
in this time. Last time it was a swanky  
bungalow."

Dick spent the reward money—part  
of it—for a battery super. He and  
Kurt are out near Julian somewhere,  
trying high-frequency reception in the  
higher altitudes. But he'll be back soon.  
Land doesn't squawk about a noisy  
neighborhood anymore.

### Musical Artists from Australia

(Continued from page 150)

the interest of every music lover  
throughout Australia, and when in May  
this great musical festival was fur-  
ther advanced by the performances of  
Melbourne and Sydney Symphony or-  
chestras under the baton of the world  
famous English conductor, Sir Hamil-  
ton Harty, a highwater mark was set  
upon broadcasting achievements. Lae-  
lia Finneberg, the Irish prima donna,  
who first appeared under Sir Hamilton  
Harty's baton, continued a broadcasting  
tour of great National interest. Other  
eminent artists who have since been  
touring under the aegis of the Com-  
mission have included the Spivakovsky-  
Kurtz Trio; Stella Power; Yelland Rich-  
ards, the English pianist; Percy Grainger;  
and Lione'lo Cecil. At the present  
moment broadcasting tours are in pro-  
gress in which listeners are hearing  
with obvious appreciation the artistry  
of such distinguished Australian artists  
as Rosa Pinkerton; Margot McGibbon  
and Frederic Jackson. Elise Steele and  
Lorna Trist, two very popular Austral-  
ian instrumentalists concluded their  
tour on April 23rd. The future would  
seem assured of a similar high stand-  
ard of artistry by the engagement of  
that very great Australian singer Flor-  
ence Austral and her husband the  
world's premier flautist, John Amadio,  
Ben Williams tenor and Sydney de  
Vries baritone from the Royal Grand  
Opera Company, and a further broad-  
casting season by Percy Grainger.

A notable feature of the current pro-  
grams of the Broadcasting Commission  
is the manner in which overseas re-  
broadcasts and relays are being pre-  
sented to listeners. Every week and  
almost every day some outstanding  
broadcast from the Empire stations at  
Daventry is relayed to Australian list-  
eners. The broadcast of the Royal  
Wedding gave many listeners an insight  
into the technical achievements of these  
overseas broadcast. In respect to the  
clarity and absolute perfection of trans-  
mission the finest effort to date was  
probably the speech of the New Zealand  
aviatrix, Jean Batten, who spoke from  
her aeroplane at the Croydon aerodrome  
on the completion of her record-break-  
ing solo flight from Australia. The

reception of Miss Batten's speech by  
Australian listeners at 4.20 p.m. E.S.T.  
was almost uncannily clear, and it was  
actually possible to hear Miss Batten  
moisten and open her lips in the nerv-  
ousness of her opening remarks.

### 3LR's Shortwave Voice

(Continued from page 148)

from the output of the high frequency  
transmitter. The aerial that has been  
used continually since March for regu-  
lar broadcasting consists of a horizon-  
tal half-wave doublet, the true bearing  
of which is 95° 30'.

Since March the station has been  
operating on a frequency of 9580 kc  
between the hours of 6.15 p.m. and  
10.30 p.m.—Australian Eastern Stan-  
dard time (G.M.T. 8.15 to 12.30). Pro-  
gram matter is taken from the studios  
of the National System. Until 8 p.m.  
the city program from either 3AR or  
3LO Melbourne is radiated, but after  
that hour the main National program  
is sent out from 3LR. This program  
may originate in the National studios  
of any of the Australian capital cities.

The stations in the National System are as  
follows:

Station	Location	Unmodulated power in Carrier Aerial Frequency	
		kW	kC/s.
2FC	Sydney	3.5	665
2BL	Sydney	3.0	855
2CO	Corowa	7.0	560
2NC	Newcastle	2.0	1245
3LO	Melbourne	3.5	800
3AR	Melbourne	4.5	610
3LR	Lyndhurst	0.6	9580
4QG	Brisbane	2.5	760
4RK	Rockhampton	2.0	910
5CL	Adelaide	2.0	730
5CK	Crystal Brook	7.0	635
6WF	Perth	3.6	690
7ZL	Hobart	1.0	580
Under Construction:			
	Grafton Regional, N.S.W.	7.0	
	Central Regional, N.S.W.	10.0	
	Gippsland Regional, Vic.	7.0	
	West Regional, Vic.	10.0	
	Townsville Regional, Qld.	7.0	
	South-west Regional, W.A.	10.0	
	Northern Regional, Tas.	7.0	

### The Nairobi Station

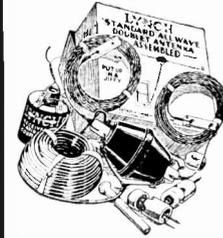
(Continued from page 185)

transmitters. The proceedings at pub-  
lic functions in Nairobi are broadcast  
when it is considered that they will ap-  
peal to up-country listeners, and a  
church service is regularly relayed on  
Sunday evenings.

Two periods, each lasting one-half  
hour weekly, are devoted to Indian pro-  
grammes, there being a fair number of  
Indian residents in Kenya and holding  
receiving licenses. The bulk of the li-  
cense revenue, however, is derived from  
Europeans.

The license fee is at present 50 shil-  
lings (about \$12.50) per annum, which  
includes transmission, if the applicant  
can satisfy the Post Office Authorities  
that he possesses the necessary qualifi-  
cations.

### NOISE-REDUCING TWINS LYNCH HI-FI ASSEMBLED ANTENNA

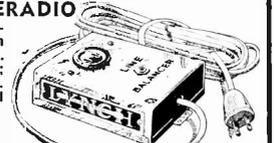


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can install it—quickly,  
easily, correctly. Makes  
every set perform bet-  
ter. Results are amaz-  
ing. LYNCH HI-FI \$6.75  
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purposes.

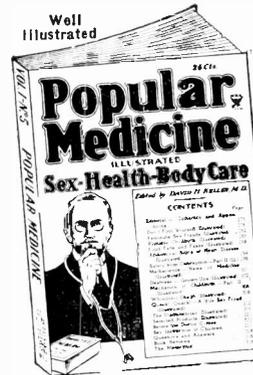


\$5.00

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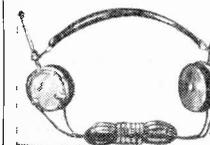
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HEAD SETS  
TO YOUR  
SHORT WAVE

or

ALL WAVE  
RECEIVERS



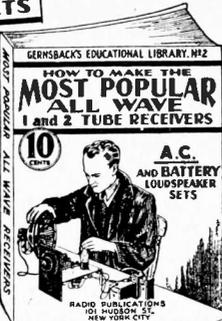
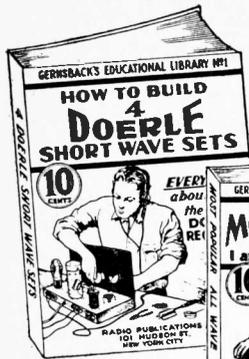
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Contains EVERYTHING that has ever been printed on these famous receivers. These are the famous sets that appeared in the following issues of SHORT WAVE CRAFT: "A 2-Tube Receiver that Reaches the 12,500 Mile Mark," by Walter C. Doerle (Dec., 1931-Jan., 1932). "A 3-Tube 'Signal Gripper,'" by Walter C. Doerle (November 1932). "Doerle '2-Tube' Adapted to A. C. Operation" (July 1933). "The Doerle 3-Tube 'Signal-Gripper' Electrified," (August 1933) and "The Doerle Goes 'Band-Spread'" (May, 1934).

Due to a special arrangement with SHORT WAVE CRAFT, we present a complete 32-page book with stiff covers, printed on an extra heavy grade of paper with numerous illustrations. Nothing has been left out. Not only are all the DOERLE sets in this book, but an excellent power pack if you wish to electrify any of the DOERLE sets, is also described.

### HOW TO MAKE THE MOST POPULAR ALL-WAVE 1- and 2-TUBE RECEIVERS

THERE has been a continuous demand right along for a low-priced book for the radio experimenter, radio fan, radio Service Man, etc., who wishes to build 1- and 2-tube all-wave sets powerful enough to operate a loud-speaker. For the thousands of readers who wish to build such sets, this book has been especially published.

This book contains a number of excellent sets, some of which have appeared in past issues of RADIO-CRAFT. These sets are not toys but have been carefully engineered. They are not experiments. To mention only a few of the sets the following will give you an idea.

- The Megadyne 1-Tube Pentode Loudspeaker Set, by Hugo Gernsback.
- Electrifying The Megadyne.
- How To Make a 1-Tube Loud-speaker Set, by W. P. Chesney.
- How To Make a Simple 1-Tube All-Wave Electric Set, by W. Green.
- How To Build a Four-In-Two All-Wave Electric Set, by J. T. Bernsley, and others.

Not only are all of these sets described in this book, but it contains all of the illustrations, hookups, etc.—the book in fact, contains everything. Nothing at all has been left out.

And believe it or not, each book contains over 15,000 words of new legible type. Each book is thoroughly modern and up-to-date. They are not just a reprint of what was printed before. All the latest improvements have been incorporated into the sets.

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## Our Readers Ideas

(Continued from page 165)

ed any real difficulty due to code interference. You neglect to mention whether or not you meant Amateurs and also whether or not you are using a super-heterodyne receiver. We have found that there is absolutely no trouble caused by Amateurs whatsoever, but due to lack of preselection, it is possible to receive two stations on entirely different wavelengths (several hundred kilocycles apart) at the same time. These are usually commercial code stations which occasionally interfere in this manner and not Amateurs!

We do not believe that it is fair to the radio industry for you to discourage your friends so far as short-wave reception is concerned. We also believe it is very unfair to them, because we know for a positive fact that they would receive many hours of enjoyment with short waves on a GOOD receiver and experience no trouble due to code interference.—Editor.)

## CLIFF FIELD A REGULAR LISTENER

(Continued from page 159)

I am highly pleased with this little receiver, inasmuch as I never find it necessary to use the phones except to copy "code" signals, and I have not used the 45 amplifier in nearly six months, Hi!

I greatly prefer experimenting to logging DX (distant) stations, and at the present time I am experimenting with automatic regeneration control. I have heard 55 short-wave stations, fifteen of which were verified. Besides this I have heard 39 commercial code stations.

I have had all of the U. S. Amateur districts both on phone and C.W., as well as a great part of Canada.

The following are some DX 20 meter phone stations I have heard:—V1G, CN2RA, K4SA, C6SA, H17G, CO2LL, CO2WZ, VO1I, and CT1BY.

Wishing you and THE OFFICIAL SHORT WAVE LISTENER the best of luck, I am,

Very truly yours,  
Clifford O. Field.  
P. O. Box 82  
Fair Haven, N. Y.

## OLIVER AMLIE—A DEMON LISTENER

(Continued from page 159)

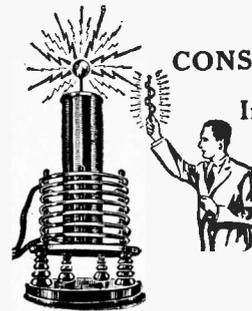
Mr. W. T. Conder of their three stations 2ME, 3ME, 3LR, from October 1934 to March 1935, reports are sent on each test from 1 to 2½ hours, 85 mornings in all. This post was assigned by the Australian Government to report signals to them, due to the poor reports from both American and foreign listeners. I will take their station check-up for one full year, ending September 1935.

# DATAPRINTS

Just the CONSTRUCTION

Information

You Need To Build Electrical Apparatus



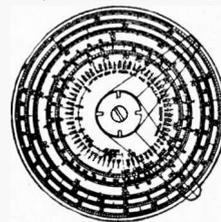
### TESLA OR OUDIN COILS

Dataprint containing data for construction this 3 ft. spark Oudin-Tesla coil. Requires 1 K W 20,000 volt transformer as "exciter"; see list below. Includes condenser data. **\$7.50**

- 8 inch spark, data for building, including condenser data; requires ¼ K. W. 15,000 volt transformer; see list below **\$0.50**
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### TRANSFORMER DATA

- 1 k.w. 20,000-volt transformer data, 110-volt, 60-cycle primary. Suitable for operating 3 ft. Oudin coil **0.50**
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## The DATAPRINT COMPANY

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I hope to bring to America the first *Australian Trophy*, and at least will receive the first verification for one year from them on the three Australian stations 2ME, 3ME, 3LR, with more than 250 hours on the air, or 175 reports. I alone (for March) received the three Australian stations for 26 reports from March 2nd to 19th, holding two stations at the same time, and logging their programs. Try it out just for fun.

Oliver Amlie,  
56th City Line Ave.,  
Overbrook,  
Philadelphia, Pa.

### Scrambled Speech

(Continued from page 153)

they produce the original English. Demonstrations have been made where the operator speaks into an inverter, words which are entirely unintelligible and they come out clear and perfect English. It is very interesting, to say the least, to witness such a demonstration. There would seem to be scarcely a possibility that such a horrible and hideous sound spoken into the microphone could ever emerge as plain everyday English. Inverted speech as used to maintain the secrecy of radio telephone channels, is one of the major advancements in public telephone communication in the past decade. Incidentally, the words "Short Wave Listener" would sound something like this: "Sharp yove ylipumur."

#### CALL LETTERS OF A. T. & T. RADIO STATIONS

Lawrenceville, N. J.	WKA	WNB
	WLA	WOB
	WMA	WKK
	WNA	WLK
	WDA	WOK
	WKN	WOY
	WMN	
	WON	Rocky Point, Me.
	WCN	WNL
	WKF	
	WMF	Hialeah, Fla.
	WOF	WNC
		WND

### Best S-W Stations

(Continued from page 172)

Station	Frequency	Call Letters
6010 kc.	49.92 meters	*COC
-B-	P. O. BOX 98 HAVANA, CUBA	
	Daily 7:30-11 a.m., 4-7 p.m. and 8-10 p.m.	
	Sat. also at 11:30 p.m.	
6000 kc.	50 meters	RV59
-B-	MOSCOW, U. S. S. R.	
5990 kc.	50.08 meters	*XEBT
-B-	MEXICO CITY, MEX. P. O. Box 79-44	
	7 p.m.-1 a.m.	
5980 kc.	50.17 meters	XECW
-B-	CALLE DEL BAJIO 120 MEXICO CITY, MEX.	
	4-4:30 p.m., 10:30 p.m., 12 m.	
5980 kc.	50.17 meters	HIX
-B-	SANFO DOMINGO, DOMINI- CAN REP.	
	Tues. and Fri. at 8:10 p.m. Sun. at 7:40 a.m., irreg. Tues. and Thurs.	

Station	Frequency	Call Letters
5970 kc.	50.25 meters	HJ3ABH
-B-	BOGOTA, COLO. APARTADO 565	
	7-11 p.m.	
5968kc.	50.27 meters	HVJ
-B-	VATICAN CITY (ROME)	
	2-2:15 p.m., daily. (Sun. 5-5:30 a. m.)	
5950 kc.	50.42 meters	HJ1ABJ
-B-	SANTA MARTA, COLO.	
	11 a.m.-1 p.m., 7-9 p.m.	
5950 kc.	50.42 meters	HJ4ABE
-B-	MEDELLIN, COLO.	
	Mon. 7-11 p.m., Tues., Thurs., Sat. 6:30-8 p.m., Wed. and Fri. 7:30-11 p.m.	
5940 kc.	50.5 meters	TGX
-B-	SR. M. NOVALES, GUATEMALA CITY, GUAT.	
	Daily except Sun., 8-10 a.m., 1-2:30 p.m., 8 p.m.-12 m.	

Station	Frequency	Call Letters
5890 kc.	50.97 meters	HJ2ABC
-B-	CUCUTA, COL.	
5850 kc.	51.28 meters	*YV5RMO
-B-	MARACAIBO, VENEZUELA	
	5:15-9 p.m.	
5825 kc.	51.5 meters	TIGPH
-B-	SAN JOSE, COSTA RICA	
	6:15-11 p.m.	
4600 kc.	65.22 meters	HC2ET
-B-	Apartado 249 GUAYAQUIL, ECUADOR	
	Reported Wed., Sat. 9-11:30 p.m.	
4273 kc.	70.20 meters	RV15
-B-	KHABAROVSK, SIBERIA.	
	U. S. S. R. Daily, 3-9 a.m.	



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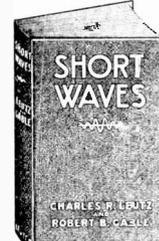
Edited by Hugo Gernsback  
**SHORT WAVE CRAFT, Dept. L**  
99 Hudson Street New York, N. Y.

Dixon, Calif.	KWN	KWY
	KWO	
	KWU	Ocean Gate, N. J.
	KWV	WOG
	KWX	WOO

### Call Letters of Ships Having Radio Telephone Service

GEWV Majestic	DHRL New York
GLSQ Olympic	ICEJ Rex
GDLJ Homeric	DOBX Columbus
GMBJ Empress of Britain	IBLI Conte Di Savoia
VQJM Monarch of Bermuda	VQJP Queen of Bermuda
DJNB Deutschland	GLRZ Aquitania
DOAH Bremen	GBZW Berengaria
DOAI Europa	FNSM Ile De France
DHAO Albert Ballin	DHTY Resolute
DHSZ Hamburg	FNSK Normandie

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In order that fellow members of the LEAGUE may be able to recognize each other when they meet, we have designed this button, which is sold only to members and which will give you a professional appearance. If you are a member of the LEAGUE, you cannot afford to be without this insignia of your membership. It is sold only to those belonging to the LEAGUE and when you see it or another, you can be certain that he is a member.

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"I am now doing the work on the Radio cars of the Police Department of West Seneca township. This is not a full-time job, but averages about \$25.00 a week. Besides this, I am working as assistant manager in a local Radio store and average \$20.00 a week on this job. I say, "Take the N. R. I. Course—it is the best."



**J. M. TICKNOR,**  
Buffalo, N. Y.  
111 Edson Street,

Clip the coupon and mail it. I'm so sure that I can train you at home in your spare time to be a RADIO EXPERT that I'll send you my first lesson free. Examine it, read it, see how clear and easy it is to understand. Then you will know why many men with less than a grammar school education and no technical experience have become Radio Experts and are earning more money than ever before as a result of my training.

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Broadcasting stations use engineers, operators, station managers and pay up to \$5,000 a year. Manufacturers continually employ testers, inspectors, foremen, engineers, servicemen, buyers, for jobs paying up to \$6,000 a year. Radio operators on ships enjoy life, see the world, with board and lodging free, and get good pay besides. Dealers and jobbers employ servicemen, salesmen, buyers, managers, and pay up to \$75 a week. My book tells you about these and many other interesting opportunities to make more money in Radio.

### MANY MAKE \$5, \$10, \$15 A WEEK EXTRA IN SPARE TIME WHILE LEARNING

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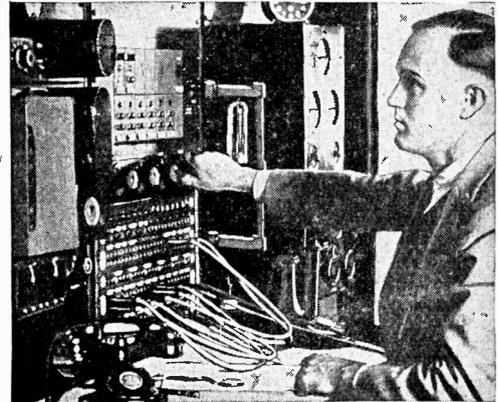
I am so sure that N. R. I. can train you satisfactorily that I will agree in writing to refund every penny of your tuition if you are not satisfied with my Lesson and Instruction Service upon graduation.

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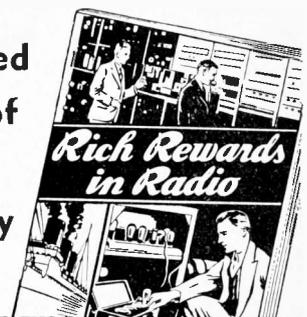
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National Radio Institute, Dept. 5JH1  
Washington, D. C.

I want to take advantage of your offer. Without obligating me, send me your Free Sample Lesson and your book, "Rich Rewards in Radio."

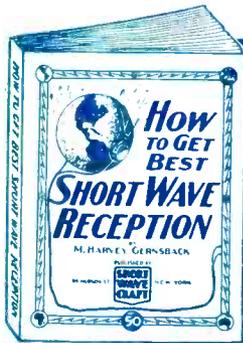
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# Here are the Six BEST SHORT-WAVE RADIO BOOKS!

Without doubt you will have to go along way to buy better books on short waves than you find on this page. Each book is written by a well-known authority on short waves . . . each book has been carefully illustrated with photographs and diagrams to

make the study of this field of radio much simpler. The volumes on this page are the finest books on short-waves which are published anywhere today. Order one or two copies today . . . find out for yourself if they are not educational. Prices are postpaid.



## How to Get Best Short-Wave Reception

By M. HARVEY GERNSBACK

This book tells you everything you ever wanted to know about short-wave reception. The author, a professional radio listener and radio fan for many years, gives you his long experience in radio reception and all that goes with it. Why is one radio listener enabled to pull in stations from all over the globe, even small 100 watters, 10,000 miles away, and why is it that the next fellow, with a much better and more expensive equipment, can only pull in the powerful stations that any child can get without much ado? The reason is intimate knowledge of short waves and how they behave. Here are the chapters of this new book:

1. What are Short Waves and what can the listener hear on a short-wave receiver or converter?
2. How to tune and when to listen in on the short waves.
3. How to identify short-wave stations.
4. Seasonal changes in short-wave reception.
5. Types of receivers for short-wave reception.
6. Aerial systems for short-wave receivers.
7. Verifications from short-wave stations.

The book makes excellent reading matter. There are many tricks in short-wave reception that even some of the "old-timers" do not know. Be sure to get it.

40 Illustrations, 72 Pages. Stiff, flexible covers **50c**

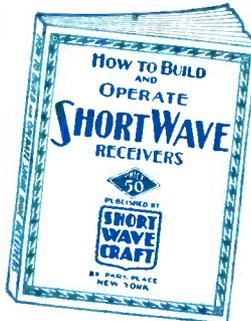
## HOW TO BUILD AND OPERATE SHORT-WAVE RECEIVERS

THIS is the best and most up-to-date book on the subject. It is edited and prepared by the editors of SHORT WAVE CRAFT, and contains a wealth of material on the building and operation, not only of typical short-wave receivers, but short-wave converters as well. Dozens of short-wave sets are found in this book, which contains hundreds of illustrations; actual photographs of sets built, hookups and diagrams galore.

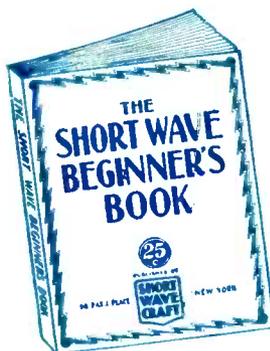
This book is sold only at a ridiculously low price because it is our aim to put this valuable work into the hands of every short-wave enthusiast.

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## THE SHORT-WAVE BEGINNER'S BOOK



HERE is a book that solves your short wave problems—leading you in easy stages from the simplest fundamentals to the present state of the art as it is known today. It is the only low-priced reference book on short waves for the beginner.

The book is profusely illustrated—it is not "technical." It has no mathematics and no technical jargon. It also gives you a tremendous amount of important information, such as time conversion tables, all about aerials, noise elimination, all about radio tubes, data on coil winding and other subjects.

### Partial List of Contents

Getting Started in Short Waves—the fundamentals of electricity. Symbols, the Short Hand of Radio—how to read schematic diagrams. Short Wave Coils—various types and kinds in making them. Short Wave Aerials—the points that determine a good aerial from an inefficient one. The Transposed Lead-in for reducing Static. The Beginner's Short-Wave Receiver—a simple one tube set that anyone can build. How to Tune the Short-Wave Set—telling the important points to get good results. Audio Amplifiers for S-W Receivers. Learning the Code—for greater enjoyment with the S-W set. Wave Length to Kilocycle Chart. Wire Chart—to assist in the construction of coils.

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## 101 SHORT-WAVE HOOKUPS

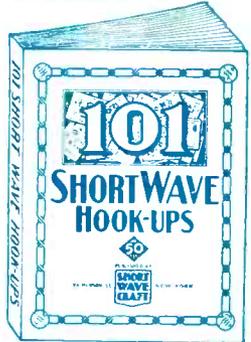
Compiled by the Editors of SHORT WAVE CRAFT

EACH and every hook-up and diagram illustrated is also accompanied by a thorough explanation of what this particular hook-up accomplishes, what parts are required, coil-winding information, values of resistors, etc., in fact, everything you want to know in order to build the set or to look up the data required.

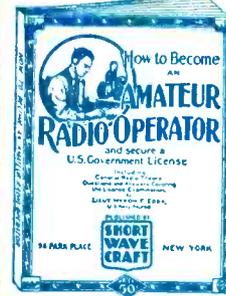
To be sure, all of the important sets which have appeared in print during the past five years are in this valuable book. Sets such as the Doerle, Dinmore, the "10" Twinplex, Oacillodyne, Denton "Stand-By," Megadyne, Triplex 2, "Globe-Trotter," 2-Tube Superlat, Mindyane, "Loop" Receiver, "Doerle" 2-tube Battery, "Doerle" 3-tube Battery, "Doerle" 2-tube A.C., "Doerle" 3-tube A.C., Doerle "Signal Gripper," Duo R.F. 4-tube Receiver, The Sargent, "Regenerative-Oacillodyne" will be found here, with full descriptions. In many cases, we have also included a picture hook-up for those who do not wish to follow the regular symbolic hook-up, but wish to have a regular wiring diagram.

This is a very handy volume, especially for those "fans" who wish to study the best sets in the short-wave art, from one tube up to ten tubes.

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## HOW TO BECOME AN AMATEUR RADIO OPERATOR



50c 150 Illustrations, 72 Pages, Stiff, flexible covers

WE chose Lieut. Myron F. Eddy to write this book because of his experience in the amateur field has made him pre-eminent in this line. For many years he was instructor of radio telegraphy at the R.C.A. Institute. He is a member of the I.R.E. (Institute of Radio Engineers), also the Veteran Wireless Operators' Association.

If you intend to become a licensed code operator, if you wish to take up phone work eventually—this is the book you must get.

### Partial List of Contents

Ways of learning the code. A system of sending and receiving with necessary drill words is explained so that you may work with approved methods. Concise, authoritative definitions of radio terms, units and laws, brief descriptions of commonly used pieces of radio equipment. This chapter gives the working terminology of the radio operator. Graphic symbols are used to indicate the various parts of radio circuits. General radio theory particularly as it applies to the beginner. The electron theory is briefly given, then waves—their creation, propagation and reception. Fundamental laws of electric circuits, particularly those used in radio are explained next and typical basic circuits are analyzed. Descriptions of modern receivers that are being used with success by amateurs. You are told how to build and operate these sets. Amateur transmitters, diagrams with specifications are furnished so construction is made easy. Power equipment that may be used with transmitters and receivers, rectifiers, filters, batteries, etc. Regulations that apply to amateur operators. Appendix which contains the International "Q" signals, conversion tables for reference purposes, etc.

## TEN MOST POPULAR SHORT-WAVE RECEIVERS

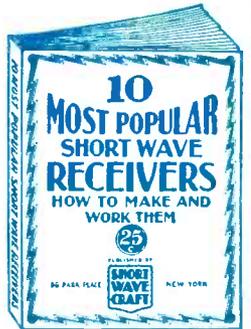
—HOW TO MAKE AND WORK THEM

THE editors of SHORT WAVE CRAFT have selected ten outstanding short-wave receivers and these are described in the new volume. Each receiver is fully illustrated with a complete layout, pictorial representation, photographs of the set complete, hookup and all worth-while specifications. Everything from the simplest one-tube set to a 3-tube T. R. F. receiver is presented. Complete lists of parts are given to make each set complete. You are shown how to operate the receiver to its maximum efficiency.

### CONTENTS

The Doerle 2-Tube Receiver That Reaches the 12,500 Mile Mark, by Walter C. Doerle.  
2-R.F. Pentode S-W Receiver, having two stages of Tuned Radio Frequency, by Clifford E. Denton and H. W. Secor.  
My de Luxe S-W Receiver, by Edward G. Ingram.  
The Binneweg 2-Tube 12,000 Mile DX Receiver, by A. Binneweg, Jr.  
Build a Short-Wave Receiver in your "Brief-Case," by Hugo Gernsback and Clifford E. Denton.  
The Denton 2-Tube All-Wave Receiver, by Clifford E. Denton.  
The Denton "Stand-By" by Clifford E. Denton.  
The "Stand-By" Electrified.  
A COAT-POCKET Short-Wave Receiver, by Hugo Gernsback and Clifford E. Denton.  
The S-W PENYODE-4, by H. G. Cisin, M. E.  
Louis Martin's Idea of a GOOD S-W RECEIVER, by Louis Martin.

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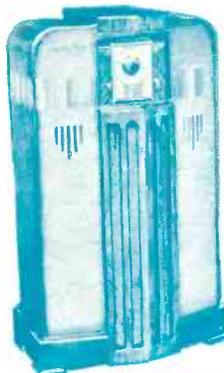
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