

All About Shortwave Listening

By JACK GOULD *Radio-TV Critic, New York Times*



DO YOU want an exciting and fascinating adventure in your own home? That is what short wave radio offers. With the flick of a switch and the twist of a dial you can roam the world. Night and day hundreds of programs are carried across oceans and continents and brought into your own living room.

On short wave radio there is something for almost everybody; it depends on what you want to hear. There's entertainment — symphony orchestras from the capitals of the world. There's knowledge and information — news and commentary that provide an absorbingly varied insight into international affairs.

There's a hobby — the game of trying to hear every country in the world or eavesdropping on the amateur radio operators who chatter back and forth over thousands of miles. There's the fun of being a parlor detective or the "supervisor" of a control tower — listening to police alarms or overhearing airplane pilots report their positions over the Atlantic and Pacific.

Short wave radio, in a word, opens new vistas for the inquiring listener. Merely to hear familiar local radio stations is to miss out on a major treat of the broadcasting art. For little expense and trouble there is the whole world to choose from.

Getting started in short wave radio depends on the state of one's pocketbook and the extent of one's interest; there are receivers for every purse and taste.

The Superheterodyne (short-wave) receiver affords vastly increased volume, greater ease of tuning and more ability to pick up distant stations. The simplest superhets come in the \$50 to \$60 bracket. For the prospective short wave listener who wants maximum service with the least fuss for reasonable cost these sets make a good starting point.

For every additional dollar spent, however, further advantages may be enjoyed. More extensive circuitry can aid in keeping short wave stations separated one from another, amplifying those tantalizing small voices coming from parts unknown, and minimizing spurious signals which often have a habit of turning up rather inconveniently.

The addition of a second stage of intermediate frequency amplification may bring the cost of a receiver up to \$80 or so. Moving up to the category of \$100 to \$200 makes it possible to obtain receivers with a stage of radio frequency amplification, which aids sensitivity and selectivity very substantially.

For \$200 or more there is a wide choice of super



Radio Japan broadcasts schedules in English, in addition to programs of traditional Kabuki music, above.

receivers, though some are designed solely to cover the bands of interest to amateur radio operators rather than the channels assigned for general international broadcasting. A super-duper short wave set that not only does just about everything electronically but practically cleans up the house and puts out the cat can be ordered for \$1,500.

In weighing the cost of short wave sets it is well to remember that in a popular sense they represent two receivers in one. Virtually all SW sets cover regular broadcast stations with their familiar output of rock 'n' roll, soap operas, disk jockeys and commercials; short wave radio is something added.

One of the major differences between regular radio and short wave is that stations on the international airwaves are badly crowded together. This means that some form of bandspreading is virtually indispensable. The bandspread tuning dial, as the name suggests, spaces the stations out so that an Englishman in London can discuss the joys of gardening without interruption by the young lady in Moscow who reads the Soviet manifestos.

Once a set has been bought, there is the matter of an aerial. In many locations fifteen feet of wire draped around the room will bring the voices and melodies of many lands into the house. An antenna out in the open, particularly if a listener lives in an apartment house with steel girders, generally proves most satisfactory. In addition, a set of earphones will be helpful to hear weak stations.

Even though the art and technique of short wave radio goes back many years, it is still an awing and exciting experience to turn on a short wave receiver for the first time, tinker with the dial and suddenly hear the chimes of "Big Ben" striking the hour in the tower of the House of Parliament in London. It makes the world seem uncannily tiny.

But to obtain maximum pleasure from a short wave receiver — and to understand the language commonly used over the air — familiarity with a few words and phrases can be helpful.

It may be asked, "What is a short wave?" A radio wave can be likened to an ocean wave. At the beach you have seen a wave go up and down, up and down. Each time it completes an up-and-down motion it is said to have gone through one cycle. If ten waves come along in a second's time we can say they have a frequency of 10 cycles. If there were a hundred waves, their frequency would be 100.

At the beach you have seen waves come in very slowly; the distance between one wave and the next is long. But if hundreds of waves hit the beach you will see that they arrive one after another very quickly; the distance between waves is short. The distance between the top of one wave and the top of next is the length of the wave. In other words, the higher the frequency of the waves, the shorter their length.

What a broadcasting station does is push radio waves out into space. And each series of radio waves can be identified either by its frequency or by its length; one determines the other.

In radio a cycle is not too handy a word. Radio waves move so quickly that the words "kilocycle" (a

thousand cycles) and "megacycle" (a million cycles) are used. The length of waves could be measured in inches or feet but since most of the world follows the metric system the wave lengths of short wave stations are expressed in meters (1 meter equals 39.37 inches).

The regular radio set that picks up local broadcast stations covers the range from 540 to 1,600 kilocycles, or 555 to 187 meters. Short wave sets run from 1.6 megacycles to at least 30 megacycles, or 187 to 10 meters. Many short waves go even higher in frequency, adding to the number of stations that can be picked up.

But the intriguing aspect of the short waves — and the heart of their usefulness — is their delightfully crazy behavior. Depending on whether it's day or night, winter or summer, this year or next, short waves travel different distances. On short wave radio it may take only 40 watts of power to send the human voice from Chicago to Wellington, New Zealand. On regular radio a power of 50,000 watts would not make the jump.

The miracle of short wave radio comes about through unseen "electronic mirrors" that rise and fall in the sky and reflect short wave signals back to earth over vast distances. These characteristics of these "mirrors" have fascinated scientists for generations and were one of the prime reasons for establishing the International Geophysical Year. The satellites that have gone whirling around the earth have afforded fresh knowledge about short waves. If a new short wave listener is sometimes puzzled by the vagaries and uncertainties of short wave signals, he is in the best of company.

But the enigma of the short waves only adds to the interest and fun of exploring them. Unlike other forms of radio, they are used for many different purposes, not only program broadcasting.

Leave behind the upper limit of regular radio around 1,600 kilocycles and a listener is immediately introduced to a veritable babble. Yachts and tugs, police alarms, weather bulletins of the Coast Guard, aviation stations galore and vessels plying the Ohio and Mississippi Rivers can be heard.

Want to know the correct time to the split second? Tune in the National Bureau of Standards (Station WWV) on either 2.5, 5, 10, 15, 20 or 25 megacycles. Or the Dominion Observatory in Canada (3.33, 7.33 and 14.67 megacycles).

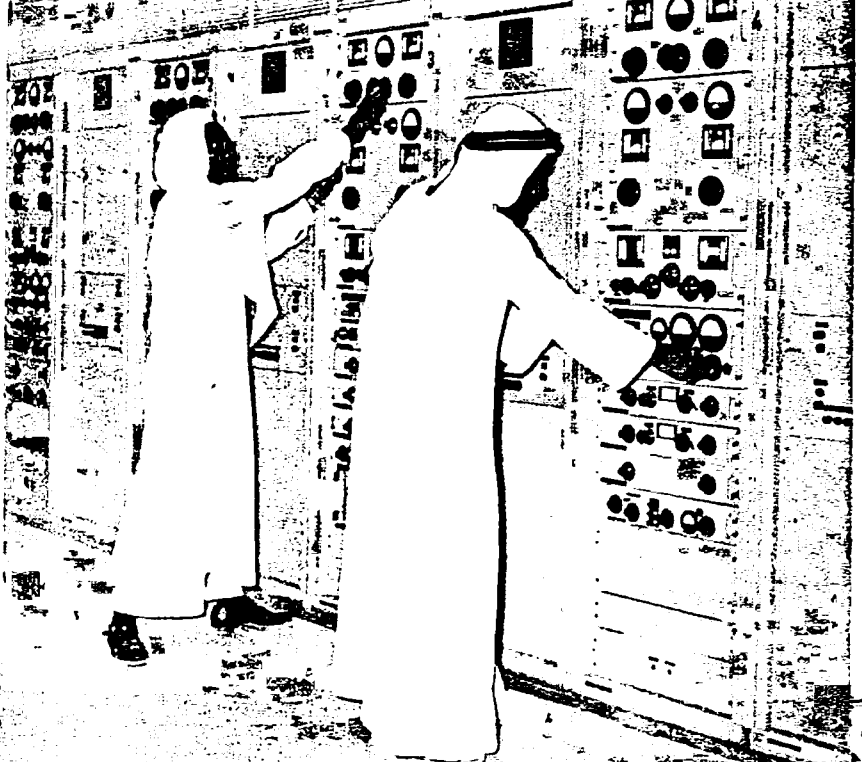
The international stations come in clusters — on the 6, 7, 9, 11, 15, 17, 19, 21 and 25 megacycles bands. The trick is to try one band first, then the other until the best reception is found. Upwards of sixty languages are employed on the airwaves but almost every country now has some service in English.

The larger countries of the world have transmitters working on several bands simultaneously so do not be surprised to hear the same program in many different spots on the dial. The hobbyist may wish to hear just enough to identify a station definitely and then go on to the next country; the first hundred countries are the hardest!

But short wave radio can be much more than a game. Weary of commercials and desiring radio of some substance? Try the British Broadcasting Corporation, which has news, talks, games, plays and concerts and discussions of an extremely high order. The whole pace

Technicians in United Arab Republic
tune transmitters which broadcast
Arab views on troubled Mid-Eastern
developments to many other nations.

Listeners who acknowledge hearing a
broadcast by mail, often receive in
return colorful and exotic QSL cards
which confirm the shortwave contact.



-2443



1958

UNIVERSAL AND INTERNATIONAL BROADCASTING
BRUSSELS

ORG: ...
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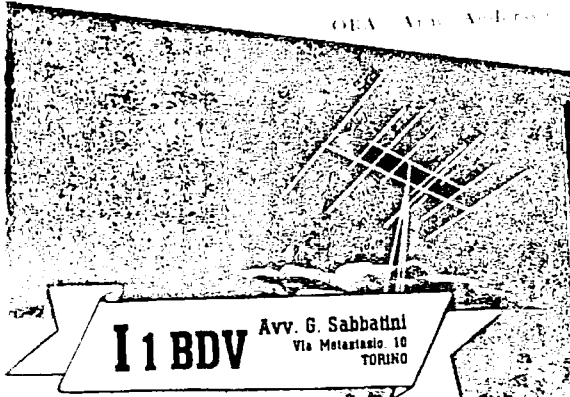


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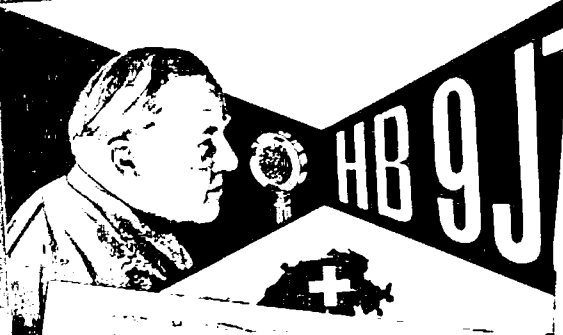
ON4-DR

VQ4RF

SAFARILAND L
DELAMERE AVENUE, P.O. BOX
SPECIALIST IN BIG GAME & PHOTOC
GAME VIEWING TOURS



I1BDV Avv. G. Sabbatini
Via Motestano 10
TORINO



HB9J



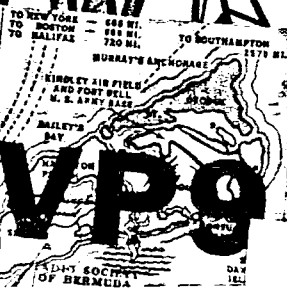
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GRN
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Stephen S. Barnes
BOX 1119
Anchorage, Alaska

7DDETAT

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FOR GRANT PROOME STREET
VIDAVILLE ISLANDS SOMERSET



CT1F

OQ5EB

SWL-VP9

WOODMERE

of BBC radio is leisurely and enormously civilized; it can be quite a change from television.

Let there occur a world crisis and short wave listening is a primer in the trials and tribulations of modern society. Take the same news item and listen to how it is handled by the Voice of America, Radio Moscow, London, West Germany, Radio Bucharest, Radio Cairo, Radio Stockholm, the Voice of Zion in Jerusalem and the French Broadcasting System over Radio Brazzaville. Contrasts in emphasis and concern can be illuminating.

The SWL can hear for himself the Soviet jamming of the Voice of America; it resembles a million buzz saws working at once. If your interest lies in the United Nations, often you can hear the full proceedings in the 21 megacycle band, though not in all parts of the country.

Or perhaps one's taste may run to a reflective commentary on rural life in Scandinavia, some European jazz from Holland, the nightly rate of currency exchange as reported by Switzerland, lovely symphonic music from West Germany or an account of the latest happenings in Australia. Trying to learn a foreign language? There's no better place for some extra practice than short wave radio.

On 8.9 megacycles it is possible to hear the trans-Atlantic airplanes reporting into Idlewild Airport in New York, Gander, Newfoundland, and Shannon, Ireland. Interest can be further enhanced by use of a map to pin-point the latitude and longitude of a plane's location.

Morning, noon, and night there are the amateur radio operators. Mostly, their talk is of a technical nature but frequently one can overhear revealing remarks on different ways of life in various parts of the world. In terms of cordial and fruitful international relations the

"hams" could give a lesson to the statesmen of the world.

Not the least of short wave radio's attraction is its attraction for the younger generation — and indeed for adults — who either want a career or a hobby. The dial is a bedlam of code signals and sooner or later one's curiosity is pricked by what is being transmitted. Moreover, there is the endless fascination of perhaps trying a different aerial or adding a piece of supplementary equipment that will improve a set's performance. From there it is but a short step to study of the theory of electronics. Many outstanding engineers and scientists of today can harken back to their early experiences as an "SWL."

GETTING the most out of a short wave radio receiver is like getting the most out of a car; it helps if you know how to run it.

With a regular broadcast set that picks up the familiar standard stations in one's locality it is common practice to whisk the dial across the range of transmitting outlets. Usually, the more powerful stations are spaced sufficiently apart so that it is no trick to find one's favorite program.

If the same method of tuning is followed in short wave radio the set owner is apt to think he has eavesdropped on a convention of peanut vendors. The bedlam of whistles, squeals and howls may make him wish Marconi had taken up knitting rather than electronics.

In short wave radio there is a basic admonition that governs tuning: take it easy. The main tuning dial should be turned with infinite patience and deliberation. The dial marker itself — a mere fraction of an inch in width — may span two or three separate stations. Quite literally a broadcast from London may be removed by only a hair from a transmission from Mos-



Variety in listening adds spice to your home entertainment. A twist of the dial can bring in All India Radio performers half-way around the world.



On-the-scene special events, such as shipboard broadcast from India, can be tuned in at home.



The world also listens to us. Moscow radio club members do not own equipment, but share its use.

cow or Stockholm. Realistically, the main tuning dial should be considered as something of a precision instrument to be moved with great delicacy and care.

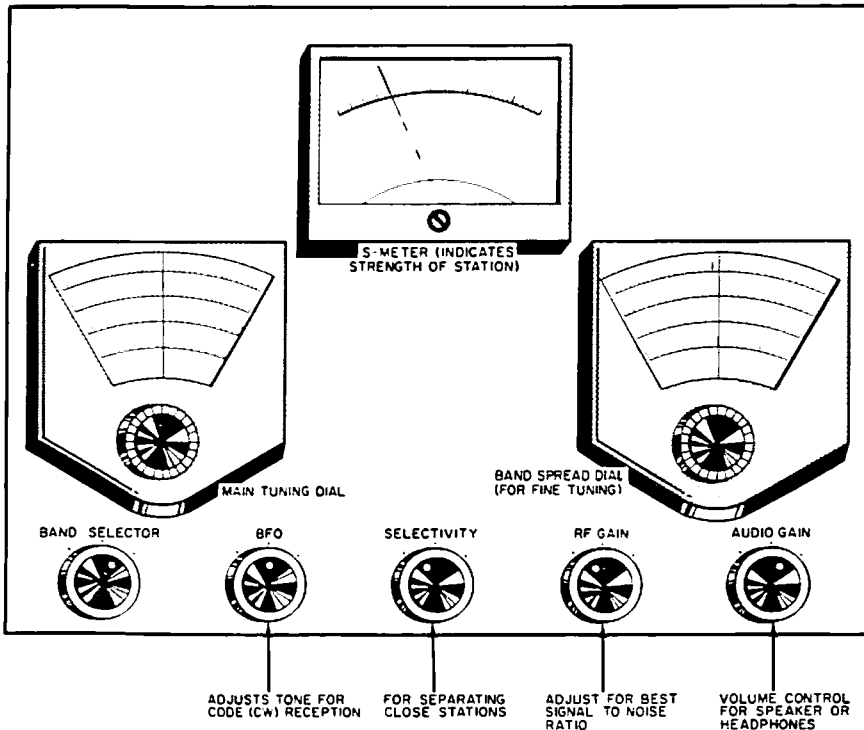
On short wave radios designed primarily for reception of international broadcasts, as opposed to those which treat short wave as something of an added sales "gimmick" for a conventional set, engineers have substantially eased the tuning problem. This is done by a supplementary tuning dial known as the bandspread dial.

The main tuning dial may be set at a given frequency, say 10 megacycles. Then the bandspread dial may be employed to tune in stations immediately below that frequency. Not even the bandspread dial will guarantee complete freedom from overlapping stations — the overcrowding of the short wave spectrum in itself is a matter of international concern and often antagonism

among nations. But the supplementary dial does aid enormously in providing reception pleasures.

There is another fundamental trick to short wave tuning. On a conventional set the channel on which a station broadcasts may be regarded as a letter "V." The station is properly tuned when the tuning dial hits the bottom of the "V." Rock the tuning dial of any set — slowly pass back and forth through a station — and a listener can tell by ear when he has hit the "notch." In short wave a measure of "cheating" may be both desirable and necessary. If interference from a second station is encountered when tuning to the "notch" adjust the tuning dial so that it is just a shade off center. This may cause the voices and music to sound a bit higher than normally but it can be a helpful way to avoid interference.

After a short wave listener has had his first experi-



Additional dials on face of short-wave receiver serve to capture weak signals and help minimize effects of static and interfering stations on the desired signal.

ence in hearing a voice from thousands of miles away he is almost certain to be bitten by the bug for "DX." This is the code abbreviation for the word "distance." Once a short wave listener has his set in operation, he quickly becomes conscious that he is the possessor of an instrument that performs differently under different conditions and circumstances.

In this regard there are several factors worthy of mention: (1) The aerial for a short wave receiver; (2) Knowing when and where to tune; (3) Calculation of the global differences in time; (4) How to prove to skeptical friends that, via radio at least, you know your way around the world.

The choice of an aerial for a short wave receiver usually involves a certain amount of elementary experimentation for the attainment of maximum results. Not even the most gifted scientist can know in advance the precise location in which a set is to be used and its local electronic advantages or disadvantages. The embryo do-it-your-selver, be he eight or eighty, should have no difficulty in fixing up a satisfactory antenna.

With the popular superheterodyne type of receiver it is often necessary to use only fifteen or twenty feet of wire to hear a good many countries. In fact, sometimes a short antenna may have an advantage in that it tends to cut down the volume of some near-by stations that either come in too loudly or tend to "splash" all over the dial.

But a longer straight wire often is helpful. If you can string up thirty to fifty feet of antenna wire from a tree to the side of the house — the wire should be "interrupted" by glass insulators at either end — and lead it to the aerial post on the receiver, distant stations generally will be heard more clearly.

The short wave fan in due course may find different types of aerials fascinating to play around with but at the outset there is a more important matter. In short wave radio different frequencies are heard better at

different hours of the day during different seasons. Similarly, different frequencies are employed to reach different parts of the world. For instance, the British Broadcasting Corporation, which conducts a round-the-clock short wave service to all parts of the world, uses 177 different transmitting aerials on multiple frequencies to furnish the best possible signals everywhere. The Russians employ even more, it is said.

After using a short wave set for a few days a listener soon becomes acquainted with the virtues and defects of different frequencies. As a general rule, if you wish to hear distant stations between dawn and mid-afternoon you should tune to stations operating on such frequencies at 17 megacycles (16 meters) and 15 megacycles (20 meters). From mid-afternoon until after darkness you should move to lower frequencies — 11 megacycles (25 meters) and 9 megacycles (30 meters). In mid-evening you find that 7 megacycles (41 meters) and 6 megacycles (49 meters) come "alive."

But these suggestions should not be regarded as inflexible. Short wave radio has a habit of not following any set rules for too long and you should try different frequency bands at different hours of the day to become familiar with the vagaries of short wave transmission. It may be nighttime where you live, but daylight where a station is; so try the higher frequencies as the spirit moves you.

Enjoyment of short wave radio can be enhanced if a listener keeps his own personal log. This can be divided into two parts. One part may list every new station heard; it's wise to note the time, the day, the month, the approximate frequency on which the station was heard, and some indication of the individual dial settings. The second part — divided into the seven days of a week — can be used for jotting down different programs worthy of rehearing.

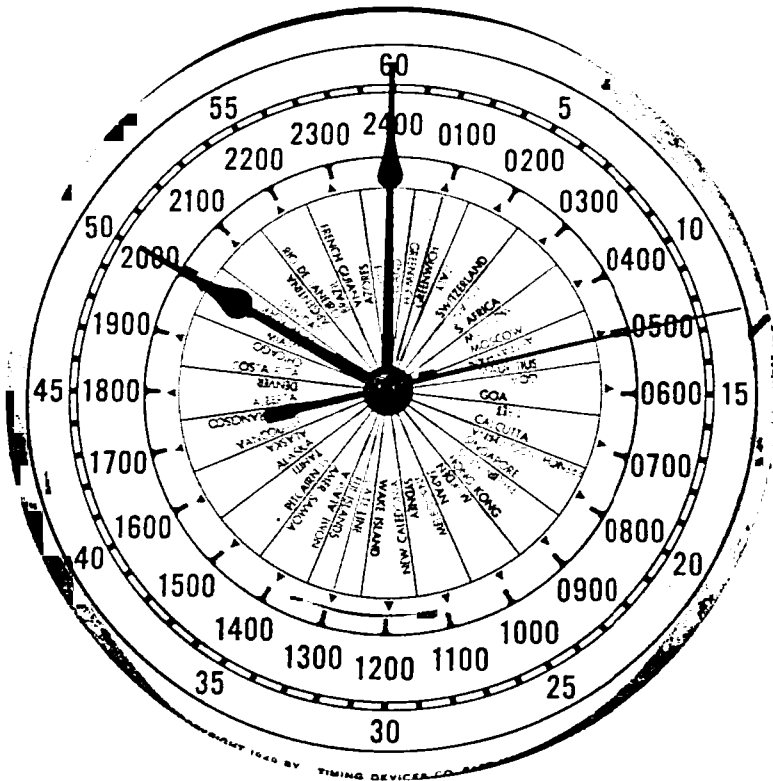
An important point to remember in connection with short wave reception, however, is that it does not have



Israeli disk jockey spins platters of his nation's music. His equipment is somewhat newer than . . .



. . . jury rig deep in heart of once isolated Tibet. Short-wave radio brings nations closer together.



The 24-hour clock helps listener keep track of schedules, enables him to log programs accurately. Minute and second hands remain universally the same, but hour differs from zone to zone. International point of reference is Greenwich Mean Time (G.M.T.), the time at Greenwich, England. You should determine the difference between G.M.T. and your local time zone. International time-telling is based on 24-hours rather than 12. Instead of repeating cycle, 12 hours represent only half of clockface. One p.m. would be 1300, and time of 2000 (four hours short of 24) would be 8 p.m. in lay language.

the same reliability as normal radio. There are days when almost all stations are "blacked out" for several hours or even days; this condition is due to atmospheric conditions and affects the most costly receivers as well as the least expensive. Don't assume your set is broken just because only a few stations are heard or distant outlets have poor volume. Conditions can change for better or worse rather quickly; sometimes it is only necessary to switch to another frequency.

If the taste of a short wave listener does not lean to international broadcast stations, there are always the radio amateurs, better known as "hams." These hobbyists seemingly seldom go to bed and can be heard chatting on one band or another practically around the clock. Others communicate through the international Morse code. Among the bands assigned to "hams" in the United States are 3.5 to 4 megacycles (80 meters); 7 to 7.3 (40 meters); 14-14.35 (20 meters); 21-21.45 (15 meters); and 28-29.7 (10 meters).

Some short wave listeners enjoy collecting cards verifying reception of foreign stations. To obtain cards it is up to the "SWL" to be as helpful as he can to the station. First, he should list exactly what he heard, the name of a speaker, the title of a song during a reasonable portion of the program. He should indicate the exact time — in Greenwich Mean Time (G.M.T.), incidentally — when he was listening. He should list the model of his receiver, the number of tubes it contains, the type of aerial, etc. Most important, he should report whether the station was heard loudly or softly in comparison to other broadcasts, whether it was steady or erratic in strength, whether there was much interference, and any other information of assistance to an engineer.

In the case of some short wave stations verification cards are mailed out at the broadcaster's expense. But in other instances the listener must include an international reply coupon, obtainable from the post office. Return postage and a self-addressed envelope always should be included if a listener seeks a verification card from a radio amateur; the hams live on a budget, too. Some countries are very indifferent to reception reports and may not send out cards even after repeated pleas. But enough countries follow the practice so that a short wave listener may decorate his den with many souvenirs of hearing the faraway reaches of the globe.



Ham radio Red Cross volunteers often pitch in where needed to provide mobile communications at disaster scenes. They can be heard on your home receiver.

Listed on this and the following pages are the major locations in the world from which short wave broadcasts emanate. This list is not complete, no list ever can be. There are constant changes with regard to time of broadcasts and frequency. You may never hear some of the stations listed here, on the other hand, you may pick up some stations not listed, this is part of the excitement of short wave listening.

The times given are in GMT (Greenwich Mean Time). Subtract 5 hours if you are in the Eastern Zone, 6 hours if in the Central Zone, 7 hours if in the Mountain Zone and 8 hours if in the Pacific Zone. The frequencies are in megacycles.

COUNTRY	CITY	STATION	FREQUENCY	TIME (GMT)
Aden.....		Aden Broadcasting Service.....	7.17	1430-1500
Afghanistan.....	Kabul.....		18.64	1500-1630
Albania.....	Triana.....	Radio Triana.....	6.9	{2200-2230 0430-0530
Algeria.....	Algiers.....	Radio Algerie.....	11.835	2000-2145
Andorra.....	Roc de Les Anelletes.....	Radio Andorra.....	5.978	2030-2230
Angola.....	Luanda.....	Radio Angola.....	9.765, 11.862	2300-2345 (Sat.)
	Benguela.....	Radio Clube de Benguela, CR6RF.....	9.502	1300-1700
Antigua.....	St. Johns.....	Radio Antigua.....	3.255	1000-1100
Argentina.....	Buenos Aires.....	LRA.....	9.69	{2100-2400 0400-0500
		Radio Belgrano, VLA11, LRY1.....	9.76	0945-0415
Australia.....	Melbourne.....	Radio Australia.....	11.77	1215-1345
			11.81	1330 (Sun.)
Austria.....	Vienna.....	Oesterreicher Rundfunk.....	7.245	0930-1030
	Innsbruck.....	OEI20.....	6.0	2020
Azores.....	Ponta Delgada.....	CSA93.....	4.865	2230
Bahrain Island.....	Manama.....	Bahrain Broadcasting Station.....	0.61	1200-1430
Bechuanaland.....	Mafeking.....	ZNB.....	8.23	0900-1000 1500-1700
Belgian Congo.....	Leopoldville.....	Radio Congo Belge, OTM2.....	9.38	0500-0608
Belgium.....	Brussels.....	World's Fair Radio.....	15.335	{1030-1100 2400-0100 (Mon.) 2315-0100 (Sat.)
Bermuda.....	Hamilton.....	Bermuda Broadcasting Corp.....	1.235	1400-0800
Bolivia.....	Sucre.....	Radio Libertad, CP25.....	9.2	0104-0202
Brazil.....		Radio Cultura de Bahia.....	15.225	0225
	Fortaleza.....	Radio Drago Mar.....	4.775	0100
	Recife.....	R. Clube de Pernambuco, PRA8.....	6.015	0215
	Rio de Janeiro.....	Agencia Nacional, PSH.....	10.22	2215-2300
British Guiana.....	Georgetown.....	ZFY, Radio Demerara.....	5.981	0955-1017
			6.035	0915
			9.44	2315-0245
British Honduras.....	Belize.....	BHBS.....	3.3	2400-0700
British Somaliland.....	Hargesia.....	Radio Somali, VQ6MI.....	7.126	0630-0700
Bulgaria.....	Sofia.....	Sofia Calling.....	9.7	{0100-0130 0400-0430
Burma.....	Rangoon.....		9.543	1500-1530
			7.117	1500-1515
Cambodia.....	Phnompenh.....	Radio Phnompenh.....	7.19	1200-1400
Cameroon.....	Douala.....	Radio Douala.....	9.27	2030-2230
Canada.....	Montreal.....	CKCX.....	15.190	0055-0145
		CHOL.....	11.720	
		CKNK.....	11.945	0255-0335
		CKLP.....	9.585	
Canary Islands.....	Las Palmas.....	Radio Atlantico, REM34.....	7.0	{1300-1530 1900-2400 1300-1530 2200-2400
			9.49	
Canton Island.....		Radio Station Kibs.....	1.5	1100-2200 (Tues.-Sun.)
Cape Verde Islands.....	S. Vincente.....	Radio Clube Mindelo, CR4AB.....	4.755	2030-2200
Ceylon.....	Colombo.....	Radio Ceylon.....	4.87	1600-1610
Chile.....	Santiago.....	Radio Nuevo Mundo, CE1174.....	11.755	2330
China.....	Peking.....	Radio Peking.....	17.745, 17.72, } 15.35, 15.118 }	0300-0330
Colombia.....	Bogota.....	Radiodifusora Nacional de Colombia, HJCA.....	4.955	2400-0500
Cook Island.....	Raratonga.....	Radio Raratonga.....	4.965	0400-0530
Costa Rica.....	San Jose.....	The Lighthouse of the Caribbean, TIFC.....	6.037, 9.647	0400-0500
		Radio Casino, TIQ.....	5.952	0509-0600
Cuba.....	Camaguey.....	Voz del Camagueyana, COJK.....	9.62	1800-0930
	Havana.....	Radio Siboney, COCY.....	11.74	1800-1300
Cyprus.....	Limassol.....	ZJM4.....	1.484	1730-1900
	Nicosia.....	Forces Broadcasting Service.....	1.086	0830-1900
Czechoslovakia.....	Prague.....	Radio Prague.....	9.585, 6.170, } 6.105, 6.055 }	0030-0100 0300-0400
		Radio Prague.....	7.255, 9.55, } 11.835 }	0200-0430
Dahomey.....	Cotonou.....	Radio Cotonou.....	4.9	2030
Denmark.....	Copenhagen.....	The Voice of Denmark, OZF.....	9.520	{0200-0230 0330-0400