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# A SHORT-WAVE JOURNEY OF DISCOVERY

with Hendrik  
Willem  
Van Loon

25¢



RCA Victor Radio

# RCA Victor

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*Exploring new worlds with Columbus*

# A Short-Wave Journey of Discovery

By **HENDRIK WILLEM VAN LOON**  
ILLUSTRATED BY THE AUTHOR

HOW perfectly wonderful that must have been!" All of us have said it and all of us have thought it and all of us have felt it.

"How perfectly wonderful it must have been to have lived in the glorious days of the Crusades when we could have been an Ivanhoe or a humble follower of that most glorious Knight, the little peasant girl from Arc!"

And as a rule we then felt very sorry for ourselves and asked why we, who are now in our twenties or forties or fifties, had to be born in an age quite as drab and commonplace as our own.

Now if only we had been contemporaries of Christopher Columbus we could have explored the uncharted seas in one of those little vessels that looked so much more picturesque than the steamers of this the fourth decade of the Twentieth Century year of Grace 1937. And when we came home we could have made our neighbors gape at our stories about these newly discovered lands, where the cities were made of pure gold and where all the men and women went around in the feathers of humming birds.

## *The Incredible Years*

All this came to my mind when RCA asked me to write something for them about the role that radio and especially the short-wave radio will play in the lives of the coming generation. "This ought to be something exactly in your line of work," so they argued when I objected that radio, like electricity and chemistry, was practically a closed book to me. "Of course, you are not an expert. We knew that; but if we wanted an expert to do this work, we surely would get one of the brilliant young men who work in our research laboratories. But you have lived through this entire period when all the great discoveries within the field of the 'air' were made. For example, you must remember the coming of

Wireless. At one moment or another you must have become aware of the existence of Radio. You must have been impressed when you heard your first broadcast. You tell us that you were born in 1882. Alexander Graham Bell got his first patent in 1875. When you were a small boy you must therefore have seen the coming of the Telephone. X-rays did not make their appearance until you had worn out at least twenty pairs of long pants. You see, you have been sitting patiently on the side-lines during all these incredible years. Now all we want you to do is to get at your typewriter (unless you are so old-fashioned that you still write with a goose-quill) and tell us about the coming of these inventions and how they struck you when they were first brought to your attention."

## *Progress by Surprise*

This statement being very flattering to my pride (who does not dearly love to be called a bright fellow, even by indirect implication?) I answered, "Very well, I will do the best I can." And thereupon I found a quiet little



*And so we went forth upon imaginary  
Crusades*



*The castle of our dreams*



At least two countries claim the honor of having invented the telephone



The Ceremonial drums of Africa

corner and far removed from both telephone and radio, I am now trying to reconstruct the exact circumstances under which all those startling inventions were first of all brought to my attention.

So far this has been no easy task and I have received many a rude shock. For I soon discovered that all these great changes had come so gradually and often so quietly that they had been functioning for years before I became actually aware of their existence. And so here I am (and there you are, for most likely your own experience was not different from mine) and I must confess to my great shame and humiliation that I have lived through the most stupendous epoch of human progress and that I have only the vaguest notions of what it was all about.

### *Glamour Belongs to the Past*

But let me give you a bit of consolation. There is nothing new in all this. Our ancestors, too, lived through the most glamorous adventures and they apparently had no more idea of what it all meant than we did. In most cases they were merely "contemporaries" and they were not even aware of the fact that anything out of the ordinary had happened to them.

There is, for example, the printing-press. Our history books take it for granted that Gutenberg (or Gooseflesh, as he was called before he changed his name) was the inventor of the printing-press. He undoubtedly was one of the earliest printers, but was he also the inventor? The answer is that we do not know.

There is the problem of the steam-boat. A steam-boat roared down the river Elbe a century and a half before Fulton was born, but we have only the meagrest details about this event, as nobody cared. And our John Fitch ran

a regular steam-boat line on the Chesapeake Bay long before Fulton brought us his steam-boat from Scotland. But who today remembers the name of poor John Fitch, who in a fit of despondency killed himself, as nobody seemed in the least interested in his successful experiments?

The telephone: At least two countries claim the honor of having invented it.

Anaesthetics: The quarrel between the different claimants continues as merrily as it did a century ago.

All of which I give you by way of an appetizer and to show you how very little the human race has changed during all these many ages and how ignorant most of us are about the very events that shape our own destinies.

And now let us come down to actual facts. What do we ourselves know or remember about the epoch-making inventions of our own life-time? I shall unlock the door of that little room in which I keep the pleasant memories of my childhood. I shall tell you what I remember. You will probably be surprised to find out that your experiences were very much like my own. We vaguely heard of this and that but it was years afterwards that we suddenly asked ourselves the question: "Was I really a contemporary to all these glorious events?"

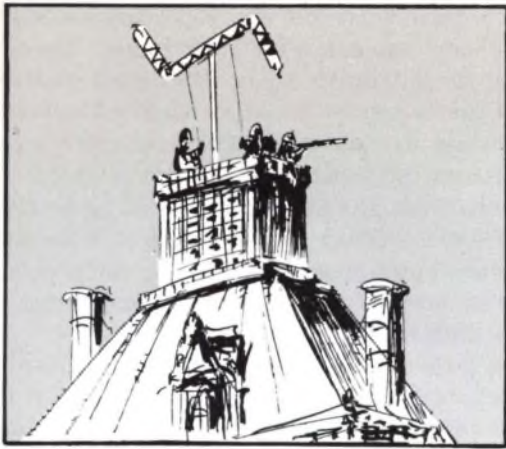
### *The Beat of a Drum*

It is the year of grace 1886. I am four years old and I make the acquaintance of a strange survival from early prehistoric days. I hear a drum being used as a means of communication. We happened to live in a small village on the seashore, a very tiny village in Holland, the charming relic of something that several hundreds of years before had been a proud and prosperous city. In the winter the people still heated their houses with fires of peat.

The last cry for help of the sinking ship



The beacon was the warning voice of the darkness



*Napoleon had his telegraph on the roof of his own palace*

During the summer they ate fish. Both the peat and the fish were imported from elsewhere and they came to us by boat. Therefore, whenever a boatload of fresh fish or of peat had dropped anchor in our tiny harbor, an old man used to march up and down our streets, loudly beating a drum. That drum was a signal for all good housewives to go to the waterfront and there to bargain.

Years afterwards, in the islands of the Pacific and in South Africa, I was to run once again across that drum as a means of communication. The throbbing tum-tum-tum—tum-ta-tee-tum of the savage drum was spelling out its message as it had done in the age of the reindeer and the mammoth, 50,000 years ago, and as it had done on our own continent when the drum and the smoke-signal of the Indians had first spread the news of the coming of the white man, that same white man, who within a very short space of time was to replace drums and smoke signals by the more prosaic but also infinitely more reliable dashes and dots of his own telegraphic apparatus.

### *A Flame in the Night*

Our village was situated near the mouth of the Scheldt. It had been a port of departure for the British Isles ever since the days of the Romans, or even longer, for all we knew. On a high dune near the spot where we found most of our bits of old Roman pots and pans (the result of carelessness on the part of the stewards on the trans-Channel boats of the Roman days) there stood a beacon. It may have been the descendant of a beacon that had been first erected by Caesar when he had visited these parts, fifty years before the birth of Christ. In case of a threatening storm, a big red lantern was hoisted to the top of that beacon. It was merely the "fire signal" by means of which our ancestors had warned each other of the coming of a suspicious stranger. That "fire signal" (of my youth) was a substitute for the human voice, shouting, "Be on your guard! A storm is coming!"

Many years afterwards, one cold and stormy night, trying to pull the unwilling oar of a life-boat, I was

forcibly reminded of that beacon. An hour before, we had left our ship. It was now sinking fast. As a last agonized appeal for help, it was sending up rockets. Once more I came face to face with the "fire signals" of our ancestors. I hope that I shall never see them again. There are pleasanter and less desperate means of communication!

### *Tidings of Great Moment*

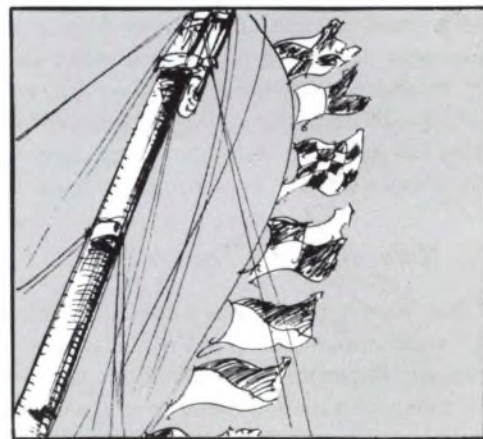
Now it must have been some time during those years when I still lived quite peacefully and happily among these medieval surroundings of my childhood days that I caught my first glimpse of that instrument that has since then become so completely a part of our modern life that we can hardly imagine how people were ever able to live without it. I refer of course to the telephone, that mysterious brown box that was fastened to the wall of my father's office and that was said to be a highly dangerous toy for little children, especially during a thunder-storm when it might give you a terrific shock.

It was explained to me as a sort of talking telegraph, for, of course, I had always known of the existence of the telegraph, and like most other children, I was terribly scared of the telegraph. For in those far away days of the late eighties, a telegram could mean only one of three things: Grandpa had died, Grandma was sick or Aunt Emmy had given birth to a seven-pound boy.

Hence Her Majesty's telegraphic messenger boys, who were usually venerable old Dutch gentlemen with whiskers, were greatly feared by all of us, for they were harbingers of evil tidings.

### *Where the Steeples Went*

Speaking of the telegraph, it was not until many years later that I discovered why so many of the church towers in the Low Countries—In Holland and Belgium and all through northern France—had lost their steeples. I had always taken it for granted that this had been caused by the Reformation. During the many centuries of religious



*Modern signal flags go back to the days of the Romans*



*The hand which all of us knew when we were young*

warfare, people had been too poor to finish these mighty cathedrals. Hence the flat topped church steeples. But many years later I discovered that I had been completely mistaken. Napoleon was to blame and the Reformation had nothing to do with it. For, once Napoleon had conquered all the western Europe, he came to depend for his success upon a much speedier and much more reliable system of information than that provided by the imperial couriers, riding madly over the roads of Europe, and so he had installed the optical telegraph of Claude Chappe all over the continent. This optical telegraph consisted of an upright post on top of which a transverse bar was fastened. At the end of this bar there were two smaller arms which moved up and down on pivots. The position of these bars spelled out the letters and the whole contraption was always erected on the top of some high tower (and most of the high towers were, of course, church towers) so that it might be seen as far as possible. In case there was a steeple, the steeple was torn down so as to make a convenient platform.

It sounds a bit clumsy, but in the year 1792 when the French government adopted it officially it was possible to send messages at a speed of fifteen minutes for every fifty miles. Eventually the thing was given up because it was not always reliable. Even with a good telescope it was not easy to spell out these letters. And, furthermore, there was absolutely no privacy about this system.

### *Reminders of Things Past*

Today the flag signals of our ships and the curious flags of the weatherman on top of the buildings in which he performs his intricate magic are about the only survivals of a time when long-distance intelligence could be relayed only by means of "visible methods."

Even mail coaches and sailing boats, and even carrier-

pigeons were slow and not very dependable methods, but since nobody was ever in a great hurry, it was quite sufficient for all current needs. Who cared whether the news of the victory of Trafalgar reached London in six or seven days after the event? The French navy had been sunk beneath the surface of the ocean, hadn't it? Well, wasn't that enough? Of course it was! Now all good patriots could once more sleep the sleep of the just, and unnecessary hurry about such things would only have made them nervous and would have spoiled their appetites for dinner.

Morse invented the telegraphic apparatus in the year 1837. Bell's telephone first began to tinkle in 1877 (two years, I believe, after he got his patent). These two destroyers of time and space were therefore quite firmly established when I made my appearance on this planet. And enjoying as I did the doubtful advantages of a strictly classical education, I was not really aware of any very startling innovations within the realm of the natural sciences until suddenly in the year 1895 we were startled by the appearance in all the illustrated papers of a picture of a woman's hand, clearly showing the bones and a ring on one of the fingers. Next came a hand holding a key. Next came pictures of an old-fashioned German professor with a very low collar and a very broad brimmed hat, such as had been affected by the leaders of the great liberal movement of 1848.

### *Beloved Professor Roentgen*

I was to know this kindly old gentleman quite well when I studied at the University of Munich, but we always talked about music and never about his X-rays. Together with millions of other people, I bear him a great debt of personal gratitude. I don't know how his rays work. But I realize that without this discovery, I would not now be sitting at my desk, telling you of these strange pre-war days when the papers were not so completely filled with the rumors of war and unrest that there was

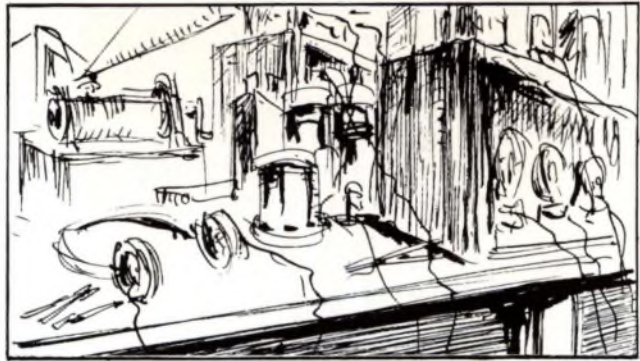


*The first collision in which wireless saved all lives*

no room left for the news from those quiet laboratories where the patient scientist was engaged in doing the real work of this world.

But now, via Professor Roentgen and his mysterious rays, I am fast approaching a period of my own life (and in that of all my contemporaries) when the scientist at last made so indelible an impression upon our minds that even the most indifferent among us were forced to take notice, whether we liked it or not. I refer to the researches and discoveries of a young Italian by the name of Guglielmo Marconi, who was born in the year 1874 and who, most unfortunately, departed this earth only a little while back. I here salute him, as the Father of all Radio and the dearly beloved foster-parent of RCA.

I heard of him first in connection with a popular lecture which I attended more, I am afraid, from a desire to get away from school for one evening than inspired by a real thirst for knowledge. The subject of the lecture was a certain Heinrich Rudolf Hertz. This learned Teuton, who died in his late thirties, was explained to us as a sort of new Messiah, who by his discoveries within the realm of the electro-magnetic waves, was said to have gone further afield than any of his predecessors and who was only prevented by his premature death from making the discovery which was to make the name of Roentgen so famous, only a few years later. Even so, as the father of the Hertzian waves (whatever these were) he had laid



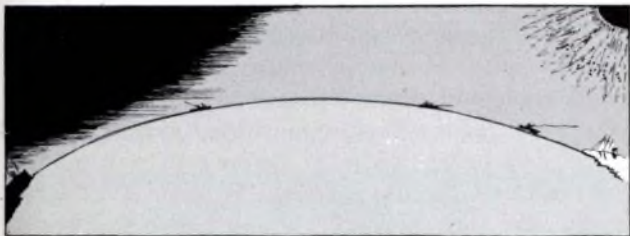
*Yes, this mess actually produced sound*

sent out an appeal for help to the South Foreland lightship, twelve miles away. The appeal for help safely crossed that distance of twelve miles and the crew of the East Goodwin lightship was saved.

Here was something that people who lived near the sea could grasp and understand. When two years later Marconi managed to send his first message across the ocean from Cornwall to Newfoundland, we again realized that something very important had happened. Even though most of us doubted whether Marconi had actually heard anything at all, for wireless was more than we could understand, and poor Marconi for a while suffered the fate of all great leaders of Mankind. People doubted his claims to fame. They said, "Show us!" Well, he did. And what he might yet have shown us, had he lived, is a matter for stimulating conjecture.

### *How Dimly I Remember!*

And now I am forced to make a big jump. I remember definitely that I first heard of Marconi in 1899 but when did I at last discover that there was such a thing as Radio? It sounds quite unbelievable, but I must have lived through the entire period when radio first developed and I never even noticed that such a thing existed. I remember vaguely having visited a house in the country where



*The first wireless message crackled from Cornwall to Newfoundland*

the foundation for all the startling discoveries that were eventually to give us our X-rays, wireless, and radio.

And then came the day when the famous but exceedingly vague Hertzian waves, modified (or should I say "adapted") by Signor Marconi, brought themselves to our attention in so graphic a manner that even that most ignorant of all students of the natural sciences—myself—was forced to sit up and take notice and say, "Oh, boy!" or whatever was the equivalent of "Oh, boy!" in those long-ago days.

### *A Distress Call Answered*

It happened this way. Early in March of the year 1898 the East Goodwin lightship of the English coast was rammed by a passing steamer. The lightship had one of Mr. Marconi's new-fangled wireless sets on board. It



*To other points, South, East, North and West*

people were playing with a complicated contraption of wires and coils and electric bulbs and a couple of ear-phones. I listened through one of the ear-phones and distantly—very distantly—I heard a popular tune. It reminded me of the phonographs of my childhood days, when you paid a dime and after a good deal of scratching and announcing were privileged to hear "Columbia, the



*The prehistoric Broadcasting Studio went in heavily for draperies*

Gem of the Ocean" played on the banjo, the barrel-organ and the xylophone. Shortly afterwards I went to Europe for a couple of years. When I returned to Connecticut all my artist friends and all my literary neighbors had radios and whenever there was a big prize-fight, the possessor of an extra loud radio was made happy by the sudden arrival of all his friends.

### *My Microphone Debut*

And then suddenly and without a word of warning, I found myself, so to speak, right in the middle of the air. It came about this way: I had returned to Holland and was peacefully working on my book "Rembrandt", when I got a letter from Amsterdam. They were going to try to send their first broadcast from Holland to America. In view of the fact that "I seemed to enjoy a certain popularity in the country of my adoption," (The Dutch are very careful never to show too much enthusiasm. They call it "being honest.") would I consider speaking from Amsterdam to New York, San Francisco, Moose Jaw and other points, south, east, north and west?

I said yes, although I had not the slightest idea how that sort of thing was done, and so on the appointed day I took the six o'clock train from Flushing (Zeeland, not Long Island) to Amsterdam. I had prepared a most noble address. It was of course much too long. All of one's first radio efforts are always much too long. So I spent the day shortening my ten pages to seven and then to five and finally to a mere four. I was to talk ten minutes, and four typewritten pages were just about enough for ten minutes.

Six of my minutes were to be in English. Three minutes were to be in Dutch. I was to end up with a final farewell in English and would I please be careful

to slide from one language into the next without noticeable change of gears!

Since then I have broadcasted in sixteen languages, within thirteen minutes, but I have never been as scared as at that moment, when for the first time in my life I stood in front of that little sardine-tin that hung suspended from the ceiling.

### *Keeping Warm in Winter*

It was a cold day. The thought of talking to Java and Sumatra may have kept the usual performers in a comfortable sweat. But on this occasion, probably having visions of snow-clad New York, they were all of them shivering, and the fiddler and the bull-fiddler were wrapped in a series of heavy woolen sweaters. I asked them why they did not light a stove, but they explained that that was not allowed by the police on account of all the combustible material with which the room was filled. And, indeed, the establishment looked like one of the Turkish cozy-corners that were so popular in our homes and in the more fashionable hotels at the beginning of the present century. These draperies, I was informed, were necessary for the sake of the acoustics.

Came the hour and an eager young man in a green sweater and wearing a muffler and who thus far had been engrossed in a delightful and quite intimate conversation with a pleasant looking young girl, now stepped forward, picked up a heavy wooden hammer, and at a sign from the master of ceremonies, who, if I am not mistaken, is now the manager of the big commercial station in Luxemburg (Luxemburg being an independent commonwealth and situated most conveniently in the heart of Europe can go in for radio-advertising in a big American way)—



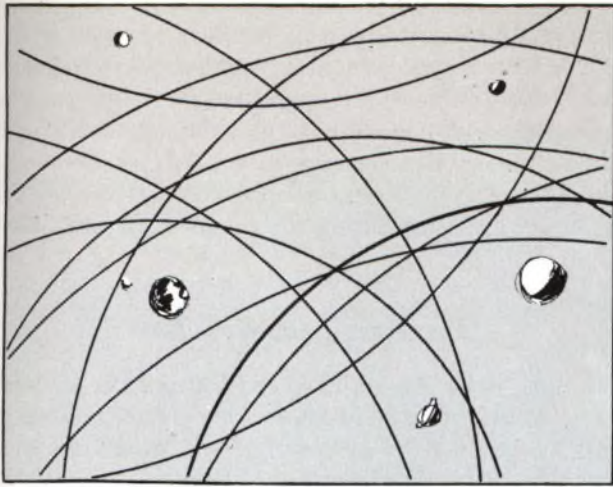
*Broadcasting with Table Mountain, South Africa, as a backdrop*

well, at the drop of the watch of this dignitary, he banged just as hard as he could on a series of a dozen steel bars.

Then a quartet (in sweaters and with frozen fingers) played a selection of well known Dutch tunes. And then it was my turn. And the very moment I addressed that little sardine-can, my nervousness dropped from me like the dew of summer disappearing before the rays of the July sun.

Incidentally, that has been my experience ever since. I have now been broadcasting for some eight years. And every time again, when I find myself face to face with a





*We have only begun to explore our universe*

mike, I suffer most horribly from an almost irrepressible stage-fright. Indeed, if it were not for the Bach fugues which my most faithful accompanist, the nimble fingered Gracie, is apt to play upon such occasions until the very moment I go on the air, I would undoubtedly have run away at least once out of every four occasions when I have had the privilege of addressing the eager multitudes of the U. S. A., Canada, Mexico, and the West Indian Islands, below, beneath and right in the heart of the Trade Winds.

### *Those Infant Short-Waves*

Though I didn't know it then, my first broadcast was via short-wave—those mysterious small replicas of our regular radio waves, which travel so much farther and skip around the world so wonderfully; those short-waves which, scientifically speaking, are still in their swaddling clothes but, speaking of healthy babies, there, my friends, is a lusty giant for you!

That was quite a number of years ago, and since then I have spoken in almost all parts of the world. I have wrestled with Australian mikes and with those of New Zealand and South Africa and South America. My voice has been carried to the most distant and lonely islands of the Pacific, and my Dutch accent has troubled the natives of the dark Congo hinterland, as it has those of our own country.

So far so good, but what does all this have to do with short-wave sets? Let me try and tell you.

We often hear it said that we live in a prosaic and dull world with nothing but humdrum jobs and taxes, and every part of the planet has been thoroughly explored, and every continent has been discovered, and every symphony has been composed, and every book has been written, and every ocean has been crossed and recrossed, and almost all the elephants have been shot, and all

the big fish have been caught, and what is there left for a bright young lad or girl to do?

### *Exploring the Unknown*

Now part of this statement is undoubtedly true. Both the North and the South Poles have been closely examined by the inquisitive human eye. The forbidden cities of Tibet come to you in the movies between Mickey Mouse and the latest super-feature. When you go forth to shoot the big pachyderms of Kenya, you take a train to the hunting fields, where a uniformed game-warden carefully inspects your permit for "one elephant and two giraffes." And it is hard to find a new subject for a symphony or a novel. But what of it? We are only at the beginning of our explorations of the universe. Within the realm of the sciences we have so far only scratched the surface. Within the realm of politics we have not yet succeeded in bringing man beyond the stage of a greedy and predatory cave-animal. And there is the air, that vast realm of the ether, or whatever theory has replaced that of the ether since I read last evening's newspaper. The whole of the air, the whole of the ether, is still practically an unexplored field in which we are bound, during the next hundred years, to make discoveries of which so far we have never even dreamed. And there, I would say, is where the short-wave comes in as your friend and ally.

### *The Dollar Standard*

During the last half century, we have become so accustomed to the so-called miracles of science that we are apt to take just a little too much for granted. We can hear practically every long-wave station of the whole of the United States on our ordinary radio set. And so we rush to the conclusion that listening in to short-wave



*We no longer live alone in this world*

messages and speeches and concerts is merely a matter of plunking down so many dollars in a radio shop and saying: "Give us a short-wave set. The best you have."

That is only part of the story. With a good short-wave set you will get much better results than with a little contraption that will only bring you the intimate police-car conversations of a couple of cops patrolling one of the outlying suburban districts. But even with the best of short-wave sets you will soon begin to realize that the results will very much depend upon your own ability to handle the creature in the right way. For a short-wave radio is merely the key that opens the door to aerial adventure. What use you will thereupon make of this opportunity—that will depend almost entirely upon yourself. Just as you can buy the best fishing tackle on the market and come home with nary a fish, because you either did not know how to catch them or because you fell asleep or because just then you were thinking of something else than catching fish. And just as you can also have the thrill of landing the biggest fish of the local waters, if you have the knowledge.

### *Frontiers Are Down*

And now I want to mention something else that makes the possession of a good short-wave set such a worthwhile investment. We no longer live alone in this world. Bell and Marconi and Hertz and Samuel Morse and the Wright Brothers and Stephenson and old Count Zeppelin and all the many others who gave us our modern means of communication, have successfully destroyed time and space. The whole world today, by way of speaking, is merely one vast suburb where everybody either knows what his neighbor is doing or can find out in a minimum of time and with a minimum of trouble. In such a world, it is just as well to understand a little something more about your neighbors than the fact that they happen to print very pretty postage stamps or that they are said to be fond of light wines and dancing (see the Geography book of your childhood days). Indeed, it is not merely "just as well," but in this age of revolution and sudden change, it almost becomes a moral necessity, for in the end this thorough understanding of your neighbor and his way of thinking and expressing himself, may prove to be a positive life-saver! It may keep us out of war, or if it fail to do so, it may at least tell us what we are fighting for.

### *Only Change is Certain*

We happen (I have so often said before), we happen to live in an age of world-wide changes of an economic, social, spiritual and religious nature. Not to mention the realm of science which is in a constant uproar caused by the far-reaching discoveries and inventions that are now almost a daily occurrence. We may regret all this commotion, as many of my neighbors do. We may accept

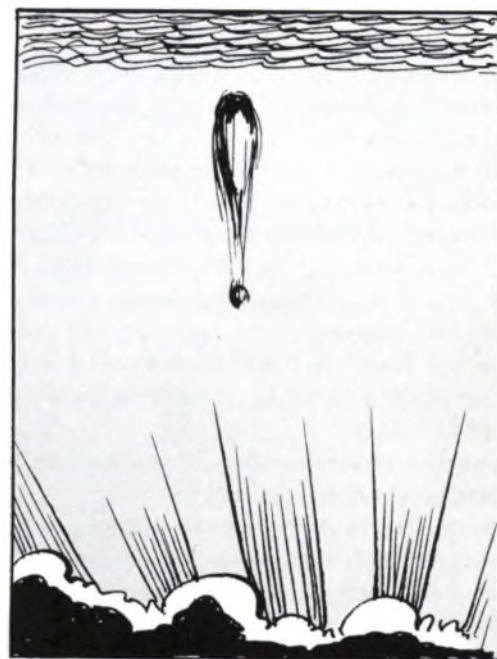
it as the promise of a much better and much more humane society, as I myself happen to do. But, regardless of our own preferences and prejudices, we have got to recognize these facts—we have got to realize that this is a fast-changing world, if we want to play the role which we as citizens of one of the most powerful and, on the whole, one of the most intelligent nations of this planet, will be called upon to play during the events of the next half-century.

### *The Ever-Listening Ear*

In order to be able to do so and not to make any mistakes, we must first of all know what is happening from week to week, from day to day, and sometimes from hour to hour. It is for that reason that I keep my short-wave set constantly within reaching distance, where by the mere turning of a small black knob, a little this way or that way, I can find out for myself what the rest of the world is doing or saying or thinking.

If I merely wanted to be amused, even then I would be getting my money's worth. But leaving the amusement field out of consideration just now, there is my duty—and your duty—a duty inspired by a sense of self-preservation, to keep one of these sets within easy reaching distance, so that at any moment of the day or night, we can ask, "What are the short-waves saying?"

For upon their answer, all of us will depend, not only for our own happiness and for that of our children, but also for the peace and prosperity of untold generations that will arise from the present turmoil of our sadly afflicted world.



*Far-reaching discoveries and inventions are now almost a daily occurrence*

# A Guide to Short-Wave Listening

By **LAURENCE M. COCKADAY**

*{All hours mentioned are Eastern Standard Time}*

Even the best fishermen rely upon a guide who knows the local waters and the habits of the fish. So I will assume the role of radio guide to you in your ether fishing.

In angling for distant short-wave stations there are two important factors that must be considered. They might be called the "when" and "where" of short-wave listening. The "when" refers to time in your own locality in relation to time in another part of the world when the station you would like to hear is transmitting. We must not forget that it is not eight o'clock at night here when it is eight o'clock in some far distant land. So it is very important to know at exactly what time foreign programs start and end in our own local time. That is what I am going to tell you and I will denote all hours in Eastern Standard Time, as most American listeners are familiar with this designation. Our second consideration—the "where"—does not refer to geographical location, even though you may have always thought so. It refers to the "spot" on the tuning dial that you must turn to in order to hear the desired station. These two bits of information, outside of ordinary skill in tuning, are what make short-wave exploring a real pleasure, rather than a hit-and-miss affair.

## *Kilocycles and Megacycles*

The engineers have worked out a very clever method for finding the spot on your dial to tune to for a given station. The term is known as "frequency" and you will find your short-wave set dial marked in "kilocycles" or "megacycles." I do not feel it is necessary for you to worry about what kilocycles or megacycles really are—except that you have to turn the pointer on your dial to that number of kilocycles or megacycles on which the desired station is transmitting.

## *First Stop, London*

Now I will assume my role as your short-wave radio guide. What would you like to listen to for regular fare on the short-waves? As a first surmise I would say it would probably be England, as that nation has complete short-wave programs in English. The British stations are the only ones that use this one language alone. But other European countries now devote considerable time to programs in the English language.

Starting with short-wave programs from *England*, we find that they are broadcast from Daventry under the call letters beginning with "G" and are commonly referred to as G-stations (although they are not operated

by G-men!). They are run, however, by a government agency known as the British Broadcasting Corporation—familiarily, the BBC.

Among the features that may be heard from the G-stations, most popular to American listeners are the following: The Empire News (at the end of each program period), the Weekly News Letter, The England I Find (interviews of British subjects from all walks of life), World Affairs (addresses by statesmen and leaders in public life). These are the spoken programs. Then there are musical programs of all types: Henry Hall's dance orchestra (quite Americanized! He frequently visits us to study our methods), BBC Orchestra concerts, the BBC Men's Chorus; His Majesty's Scots' Guards Band, His Majesty's Irish Guards Band, and all types of ballad music and folk songs. Then there are the series of well-written and acted radio plays that can be heard almost daily.

## *How to Find Your Station*

We can always recognize a G-station by the announcement "This is London calling!" and ending with Big Ben chimes and the playing of "God Save the King!"

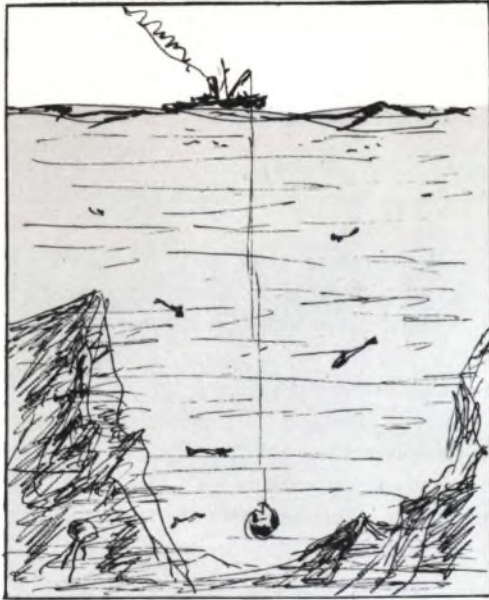
Now, who are these British stations and where can they be found on the dial? They are as follows:

CALL LETTERS	FREQUENCY	WAVE-LENGTH
	MC/S	METERS
GSA	6.05	49.59
GSB	9.51	31.55
GSC	9.58	31.32



*Englishmen all over the world tune in on the chimes of Big Ben*

## Other Transmissions



*A talk from Dr. Beebe's Bathosphere was the subject of a recent round-the-world broadcast*

CALL LETTERS	FREQUENCY	WAVE-LENGTH
	MC/S	METERS
GSD	11.75	25.53
GSE	11.86	25.29
GSF	15.14	19.82
GSG	17.79	16.86
GSH	21.47	13.97
GSI	15.26	19.66
GSJ	21.53	13.93
GSK	26.10	11.49
GSL	6.11	49.10
GSN	11.82	25.38
GSO	15.18	19.76
GSP	15.31	19.60
GST	21.55	13.92

This list gives you the "spot" on which to tune your dial to any British station; but as we have pointed out before, that is not enough to know. We also have to learn when to tune. The Empire transmissions are six in number, Transmission 1 continuing between the hours of 11 p.m. and 1 a.m. In the summer, the stations used on Transmission 1 are usually GSG, GSO, GSD and GSB, on the 16, 19, 25 and 31-meter bands. However, other G-stations on these same four wave-lengths may be substituted at times from the list. Occasionally there will be two or three of these stations broadcasting at the same instant, and one will be considerably louder than the other in your particular locality. In the wintertime, Transmission 1 may be made from higher wave-length stations such as GSA or GSL on the 49-meter band, from GSB, GSC on the 31-meter band, and possibly GSD, GSE or GSN on the 25-meter band.

Transmission 2 occurs between the hours of 5 a.m. and 7 a.m. In the summertime, the stations regularly used are GSJ and GSH in the 13-meter band, and GSG in the 16-meter band. In winter, stations used may be any of those designated in the 16, 19, 25 or 31-meter bands.

Transmission 3 is accomplished in summer on GSJ and GSH on 13 meters, GSG on 16 meters, and GSF on 19 meters. However, other 19-meter stations may be substituted. In the winter, Transmission 3 is usually made on 19, 25 and 31-meter stations.

Transmission 4 takes place between the hours of 12 noon to about 6 p.m. The stations that may be heard will be found on 16, 19, 25 and 31 meters winter and summer.

Transmission 5 takes place between the hours of 6 p.m., and 9 p.m., and is designed primarily for the American continent. In the summertime, the stations on 19 and 25 meters predominate. During the winter, stations on the 25, 31 and 49-meter bands prevail.

Transmission 6 takes place between the hours of 7 p.m. and 11 p.m., and in summer the stations used are on 16, 19, 25 and 31 meters. In the winter they will probably be made on the 25, 31 and 49-meter stations. These programs in Transmission 6 are especially suited to the listeners in the western part of the United States.

The mailing address for all BBC stations is British Broadcasting Corporation, Broadcasting House, London, W. 1.

## Radio Mathematics

I have spoken about wave-lengths. To find the dial setting for the stations in the list corresponding to the wave-lengths, we just take the kilocycles for that particular station. For instance, 49.5 meters is 6050 kilocycles for Station GSA. Again, 6050 kilocycles is equal to 6.05 megacycles. Either kilocycles or megacycles may be given on the dial of your radio receiver.

I have gone into considerable detail about tuning in

RADIOSTATION: RADIONATIONS			
Call sign	Wavelength	Power & Aerial	Emission
HBL	31.27 m., 9526 k.c.	20 k.w. omnidir.	Official bulletin
HBP	38.47 m., 7797 k.c.	20 k.w. direction.	Information Section, L.o.N.
HBO	26.35 m., 11385 k.c.	20 k.w. omnidir.	International Labour Office Radio-Suisse (private)

Your report of \_\_\_\_\_ received and checked with our transmission found correct and hereby verified.

Date \_\_\_\_\_

League of Nations - Geneva

2700-7.10.3000

*An "acknowledgement card" received by a listener from the League of Nations station in Geneva*

KURZWELLESENDE DER ÖSTERR. RADIOVERKEHRS A.G.

UR LTR RCVD 19 OER2 TNX FR UR M6G  
 UR CRD RADIO WIEN DANKT HERZLICH FÜR DIE FREUNDLICHE EMPFANGSBESTÄTIGUNG

# O E R 2

TRANSMISSION HOURS  
 SUNDAY 14-99 GMT =  
 MONDAY 15-93 MEZ  
 WEDNESDAY 14-93 GMT = 15-94 MEZ  
 THURSDAY  
 FRIDAY  
 SATURDAY

TRANSMITTER CRYSTAL CONTROLLED  
 BEST in. 6072 MC 2542 m. 11801 MC  
 POWER 15 KW

ÖSTERR. RADIOVERKEHRS A.G.  
 WIEN, I. JOHANNESGASSE 4 b  
 ÖSTERREICH

*"When in doubt, write." That's what a short-wave listener did, and received this reply from Central Europe*

the British stations, and now that you have a fairly clear idea of the tuning-in process and what is involved, I will be briefer, as a good guide should be.

Now let me take you across the North Sea to *Germany*. Broadcasting in this country is also on a high technical standard, and the general method of transmission is similar to that of England. The programs are broadcast from Zeesen under the call letters beginning with "D." All the German stations are controlled by a government agency known as the Reichsrundfunkgesellschaft.

### German Favorites

The program features most liked by American listeners are the following: German folk songs, symphonic band concerts, and male choirs. These are the musical programs. The spoken programs most popular are: News in English (near the end of the program), travel talks, Daily Life in Germany—and, for those who desire to observe Nazi ideas at first hand, the Economic Review. The Sports Review is also quite extensive.

The German short-wave stations are listed below:

CALL LETTERS	FREQUENCY	WAVE-LENGTH
	MC/s	METERS
DJA	9.56	31.38
DJB	15.2	19.74
DJC	6.02	49.83
DJD	11.77	25.49
DJE	17.76	16.89
DJL	15.11	19.85
DJM	9.54	31.45
DJQ	15.28	19.63
DJR	15.34	19.56

The principal stations to listen for are DJE, DJB and DJQ, which may be heard from midnight to 10 a.m. daily. DJL is usually on the air from 11 a.m. to 5 p.m. DJD is heard from 11 a.m. until midnight. DJA and DJM transmit from about 4 p.m. to 5 a.m. with slight varia-

tions. DJC may be heard from noon till 4 p.m., and sometimes until late in the evening, in the fall and winter. Other German stations are sometimes substituted throughout the year, but they come in so powerfully that they can be easily found by a casual tuning over the 16, 19, 25, 31 and 49-meter bands. One added hint is that a German station may always be found very close on the dial to British stations.

German announcers address their listeners first in German, then in English with, "Dear friends and listeners abroad." Programs wind up with the Nazi "Marching Song" and "Deutschland Über Alles."

The mailing address for German stations is Deutscher Kurzwelle sender, Haus des Rundfunk, Berlin-Charlottenburg 9, Germany.

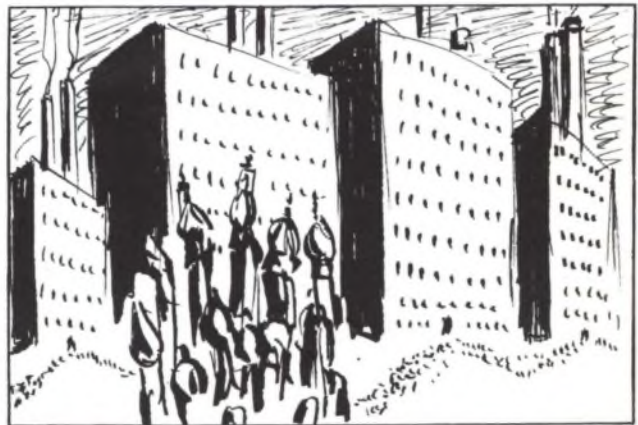
### On to Paris

And now across the Rhine to *Paris*. French short-wave broadcasting originates at Pontoise, from the government station "Radio-Coloniale," an agency of the Ministry of Posts, Telegraphs and Telephones, often referred to as "P.T.T."

Programs always start with a concert or with gramophone records. News in French, English, German and Italian follow in swift succession. Classical music also takes up a considerable portion of the program. The "Message From Paris" in English is quite popular. Colonial market prices interest some American listeners.

The French stations are three in number: TPA2 may be found on 15,243 kilocycles on your dial (wave-length 19.68 meters), from the hours of 6 a.m. to 11 a.m.; TPA3 transmits on 11,885 kilocycles (25.24 meters), from 2 to 5 a.m., and from noon to approximately 6 p.m.; TPA4's frequency is 11,720 kilocycles (25.6 meters), and their time on the air is from 6 p.m. to around 2 a.m.

Locating French stations is relatively simple. "Ici Parea" is what you will hear the announcer say between selections. The program ends with the playing of "The Marseillaise."



*From Moscow you hear much about the aspirations of Soviet Young Pioneers*

The mailing address for the "T" stations is Radio-Coloniale, 98bis, Boulevard Haussmann, Paris 8.

### City of the Seven Hills

Flying high across the snow-capped Alps we arrive at Rome. Italian broadcasting on the short-waves is trans-



"We're glad you heard us," says this postal card from Budapest

mitted from Prato Smeraldo-Rome. The radio transmissions are government-controlled by the agency E.I.A.R.

Programs consist of complete operas, choral music, string music, Arabic music and folk songs. News in English and Italian, consisting largely of economic and military events, are interspersed freely throughout the program. Premier Mussolini, like dictators in other countries, is apt to be heard at any time. Some of the spoken features are broadcast in the following languages: Chinese, Japanese, Turkish, Spanish, Portuguese, French, German, English, Arabic, Danish and, of course, Italian. The linguistic ability of Italian announcers is one of the highest in the world.

The Italian transmissions are made from a single station I2RO (announced as 2RO4). In the summertime, this station operates on 11,810 kcs. (25.4 meters), from 6 a.m. to as late as 7 p.m. on some days. In the winter, the station may change frequency. Along about noon (announcing as 2RO3) this station may be found on your dial at 9635 kcs. (31.4 meters).

Rome may be recognized on the air by a woman announcer, who always starts each program feature by saying "Radio Roma Napoli." Programs end with the Fascist Anthem.

### The U. S. S. R.

If you like, I will now guide you to Moscow—the center of Soviet short-wave broadcasting. The call letters are RV59 (very seldom mentioned over the air). This is a government station.

From Moscow, which is powerfully received in America, you will hear a preponderance of spoken programs, mostly one-hour talks on a given subject. These subjects run all the way from parachutism, to football, news, the People's Front, harvesting, polar expeditions, and the dreams and aspirations of Soviet Young Pioneers. If you like your Socialism undiluted, you can get it from Moscow. Also there is an hour of really worthwhile Russian music each week. You can easily recognize the station by its continuous dialogue and by its "Hello, Hello, Moscow Calling!"

Moscow may be found on the dial at 12,000 kcs. (25 meters), for one hour between 4 and 5 p.m., except Saturdays. On Wednesday only, the program is musical at this time, preceded by an hour of talk. English programs are heard daily at 7 p.m., and on Sundays at 6 a.m., 10 a.m., 4 p.m., and 7 p.m. Other Russian stations may be found in the short-wave station list.

The mailing address for Russia is Miss Inna Marr, Radio Center, Solianka 12, Moscow.

### The Tulip Country

There are other stations in Europe that must be mentioned briefly. There is Huizen, Holland (call letters PCJ, 15,220 kcs., 19.71 meters), with its really good symphonic music and rather Americanized programs. It may be heard best from 8 to 11 a.m. on Wednesdays and, if you are a very early riser, from 4 to 6 a.m. on Tuesdays. PCJ may also be heard Sundays on 95.90 kcs. (31.28 meters), from 10 a.m. to 2 p.m. Station address is PCJ Studios, Hilversum.

Then there is the new station OLR4A, in Czechoslovakia, transmitting on 11,840 kcs. (25.34 meters), from 2 to 4 p.m. daily, and from 7 to 10 p.m. on Mondays and Thursdays. This station's announcement includes a fanfare of trumpets and is noted for its excellent band music. Station's address is Czechoslovak Short-Wave Station, Prague.



Stirring events are happening in Spain. Your short-wave radio is ready to tell you all about them

## Peace Center



From picturesque Belgium come daily broadcasts that are exceedingly worth your while

### And the Rest of Europe

Other Europeans worth fishing for are:

EAQ, Madrid, *Spain*, 9860 kcs. (30.43 meters), heard daily 6 p.m. to midnight. Address: Transradio Espanol, Apartado 951, Madrid.

CT1AA, Lisbon, *Portugal*, 9650 kcs. (31.09 meters), heard Tuesdays, Thursdays and Saturdays, 4 to 7 p.m. Address: Avenida Antonio Augusto de Aguiar 144, Lisbon.

SPW, Warsaw, *Poland*, 13,653 kcs. (22.16 meters), heard Mondays, Wednesdays and Fridays, 11 a.m. to 2 p.m., and on Sundays, 5 to 11 p.m. Address: Polskie Radjo S.A., Mazowiecka 5, Warsaw.

HAT4, Budapest, *Hungary*, may be picked up on your dial at 9125 kcs. (32.88 meters), on Sundays, for an hour, at 6 p.m. Address: Research Labs. for Electrical Communication of the R. Hungarian Post, Gyali-ut 22, Budapest.

ORK, Ruysselede, *Belgium*, 10,330 kcs. (29.04 meters), is heard for a few hours after 1 p.m. daily. Address: Direction des Radiocommunications, Brussels.

LZA, Sofia, *Bulgaria*, 14,970 kcs. (20.04 meters), may be heard Sundays, with a sensitive receiver, from 10 a.m. to 5 p.m., and also from 11 p.m. till 7 in the morning if you have a sleepless night. Address: Radio Garato, Sofia.

LKJ1, Jeloy, *Norway*, 9530 kcs. (31.48 meters), transmits from 5 to 8 a.m. Address: Department of Commerce, Division of Radio Telegraphy, Oslo.

A new *Swedish* station to listen for is SBG, Motala, which broadcasts daily from 1:30 a.m. to 5 p.m., and on Sundays, from 3 a.m. to 5 p.m. The frequency is 11,705 kcs. (25.63 meters), before 1:30 p.m., and 6065 kcs. (49.46 meters), after that time. Address: Official Swedish Short-Wave Radio Station, Motala.

HBL (announcing as Radionations), the League of Nations Station at Geneva, *Switzerland*, 9595 kcs. (31.27 meters), broadcasts some interesting talks on Saturdays, from 4 to 7 p.m. Address: Radionations, Prangins, Vaud.

HVJ, *Vatican City*, 15,121 kcs. (19.84 meters), announces as "Christus Laudator," and has a weekday program at 5 a.m. Address: Pontificia Accademia della Scienze, Roma-Castino Pio IV, Citta del Vaticano.

In the wintertime, by very careful tuning, you may be able to hear OER2, Vienna, *Austria*, 6073 kcs. (49.4 meters), transmitting weekdays, from 9 a.m. till better than 5 p.m. Address: Osterr, Radioverkehrs, A.G. Johannesgasse 4b, Vienna.

Also, OXY, Skamleback, *Denmark*, 6060 kcs. (49.5 meters), is a good catch from noon to 6 p.m. Address: Statsradiofonien, Heibergsgade, 7, Copenhagen.

This group of European stations, collectively, will give you a good insight into what the various peoples of Europe are thinking and doing in the realms of government, business, music, science and art.

### "Away Down Under"

Hurdling the vast space over oceans and continents to the Antipodes, we arrive in *Australia*. Here we find three or four stations that are always favorites with the American listener. Their programs are in English. Their psychology is simple, straight-forward and friendly. I like their pronunciation. Their programs come in loud and clear.

These stations, from "away down under," are four in number. VK2ME, Sydney, 9590 kcs. (31.28 meters), is heard best from 4 a.m. to about noontime in various sections of the United States. If you are interested in cricket, you may hear descriptions of these games on Sundays, from midnight to 2 a.m. This station is known

(Continued on page 23)

Nazari Station		Longitude 135°51'00"E	Latitude 36°19'44"N	OVERSEAS BROADCAST			
Call Sign	Frequency in K.C.	Broadcast Hour (GMT)	Broadcast Area	Call Sign	Frequency in K.C.	Broadcast Items	
			West Coast of North America, Hawaii	VN1	1850	News in English and Japanese	
			Manila	Z1	1180	Mus.: Entertainment, Lecture, Etc.	
			Dutch Indies	VN1	1420		
			Sum	ZK	1510		
			Malay State	Z1	955		
			European countries	Z1	1180		
				ZK	1510		
			East Coast of North America	VN1	1850		
			South America	ZK	1510		
				ZK	1735		
RELAYING BROADCAST FOR MANCHUKUO AND FORMOSA				30 KW. Transmitter			
Call Sign	Frequency in K.C.	Broadcast Hour (GMT)	Broadcast Items				
			Daily				
IPT	6750	0000-0010	Weather forecast, Market quotations				
VIP	7510	0700-0845	Market quotations				
Z1	9535	0340-0410	News, Market quotations				
VN1	10600	0650-0720	Market quotations, News				
VN1	10740	0900-1230	Children's Hour, News, Lecture, Entertainment, Music, Drama, Etc.				
Z1	11800	1230-1300	Time Signal, News, Weather forecast, Etc.				
VN1	14000	2230-2340	Physical Exercise				
ZK	15160						
Remarks: -				Frequency used in this season of the year.			

Japan sends detailed information on its broadcasts to listeners on the other side of the world



**MOSCOW**

## 13 Picture Vignettes

**VATICAN CITY**



**MOSCOW** In Russia, everything is owned by the government, including the precepts of Karl Marx. Naturally, you hear a lot about these precepts on the Moscow radio station. But if you are interested in aviation, agriculture, science or industry, Moscow has much to teach you of these, too. Then, too, there are probably more good bass voices in the choirs of Moscow than in all the other cities of the world put together. If you want to hear those voices, you can listen in undisturbed by politics or anything else. The Moscow station is good and loud, as befits a nation anxious to spread its gospel to the four corners of the earth.

**VATICAN CITY** We of this generation have seen the first Pope in history to install a telephone at his desk, to own and operate a radio station, and to venture beyond the Vatican walls in a motor car. This latter privilege is the indirect result





**RIO DE JANEIRO**



**AUSTRIA**

## by Hendrik Willem Van Loon

### WITH COMMENTS BY THE EDITOR

of the Lateran Treaty of 1929, between the Papal State and the Italian Government. But the radio station is largely the work of the late Marconi who, besides being the discoverer of short waves, was himself a dignitary of the Church. If Urban II had had a radio transmitter in 1095, the outcome of the Crusades might have been quickly settled, and with much less bloodshed. But Peace and Reform are the concerns of the present Pope who, happily, has talked on both these subjects to hundreds of millions at a time.

**RIO DE JANEIRO** There is a great deal of wealth in Brazil, some of it lying in the steaming jungles, and some of it situated more handily in the banks of a few large cities. Now, wherever there is wealth there is leisure. And wherever there is leisure there is culture. So it is only natural that the radio stations of Brazil export a lot of excellent music, symphonic, operatic and dance, all of which is yours

for the asking if you take the trouble to tune in. Some of these programs are announced in English, but the preponderant tongue is Portuguese.

**AUSTRIA** Pretty little Austria today is the object of desperate undercover politics, and there are some people who think that unless she chooses another Hapsburg, she will eventually be gobbled up by one of her neighbors. All of this might make the Austrians unhappy, were it not for their music, which has a way of reducing political squabbles to minor issues indeed. Any Austrian with a good radio set can tune in Salzburg and there find consolation in the works of Mozart, Beethoven or Wagner. For that matter, Americans can, too; and they will find it exceedingly worthwhile, particularly in the festival seasons when Toscanini conducts and when many great singers, including Americans, hold forth right near the spot where Mozart lived and died.



**VENEZUELA**



**FRANCE**

**HAVANA**



**ITALY**

13 *Picture*

## FRANCE

If you were in France looking for a good place to put up a transmitter for short-wave programs, you would sooner or later pick the Eiffel Tower for your antenna. Well, as a matter of fact, you would be too late; for the government already uses it for that purpose. You can verify this fact by tuning in your short-wave set and, by so doing, incidentally confer a favor on yourself. For the French have much to offer that is entertaining, instructive and interesting; and if you are a Wall Street banker, you may hear something very profitable besides. For the Paris radio transmits all the latest Colonial market prices, in addition to classical music, and news in French, German and Italian.

## VENEZUELA

Venezuela is a confederation of states, as loosely grouped together as was our own Confederation in 1787, and having a smaller population now than this country had then. There is at least one good station in Venezuela, and that one is located in Caracas. Some night when you are "fishing around the dial," you are sure to tune it in. You may not recognize it at first, since it serves large helpings of pulsating jazz which might equally come from Havana, Rio, or a dozen other places. But when the announcer says, "Egree-ay-gah—vay-dos-erray-say," {YV2RC} then you know you're *there*.

## HAVANA

Returning tourists from Cuba say that Havana is the Paris of America, by which they mean that the night life is very gay. There are others, however, who claim that this distinction really belongs to Rio, and that all those who claim otherwise are simply country bumpkins. Now, we do not want to take sides in this argument, but we *will* say that the music that comes from Havana sounds very much as if the *players* were having a good time. But if you want to judge for yourself, the quickest way to do so is to tune in both cities on your short-wave set and compare. The musical fare in Rio and Havana consists mainly of rhumbas, tangos, and Spanish melodies with guitar accompaniment. You will probably enjoy everything you hear, especially as distance lends enchantment to the listening.

## ITALY

Mussolini is an omnipresent figure in Italy, and if you tune in on this country, you are apt to hear him any time. In case you don't, there are others who will tell you what he is thinking and saying. They will do this in Italian and in English. But there is music in the air of Italy, too, just as there is everywhere else. You can hear opera, choral music, string music or folk songs, as your heart desires. But if you are a musicologist and go in for things that are rare or novel, then listen to the programs especially made for export to the Italian possessions. The linguistic ability of the Italian announcers will delight you, even though you do not always understand them.



**HOLLAND**



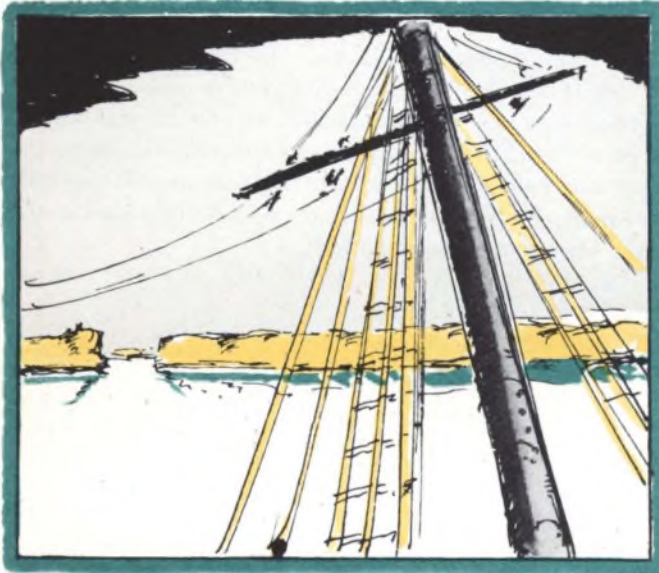
**GERMANY**



**AUSTRALIA**

**TOKYO**

**LONDON**



## **HOLLAND**

Since Mr. Van Loon has contributed so charmingly to this booklet, and since his drawings also accompany these words, we feel sure you will want to get better acquainted with the land of his nativity. Mr. Van Loon has vivid recollections of moonlight skating parties in Holland, some of which were made especially memorable by draughts of an ambrosian pea soup. Unfortunately, the Dutch radio stations do not consider a skating party in the category of a sports broadcast, nor do they advertise their culinary secrets in English. Americans, however, will be well satisfied with their symphonic music and with their special programs for New World listeners.

## **GERMANY**

The Nazification of Germany has brought radio under the control of the State; consequently, the air is full of talk about what Germans will or will not do, and sometimes there are speeches by Herr Hitler himself. But you must not suppose that this is all you will hear. For the Germans love to sing, and you will hear aplenty of their wonderful choral groups. Then too, there are symphonic concerts, and frequent news reports and travelogues in English. To get a good idea of what Hitlerism is all about, listen to the Economic Review.

## **LONDON**

If you listened to the recent Coronation broadcasts, you will readily understand that Englishmen dearly love their king and queen. If you are familiar with Great Britain itself, you will also understand that Englishmen like their radio system. It is owned by the government and sometimes censored by the government, but it always tries to give its customers what they want. If you are a play-goer, you will much enjoy the dramatic presentations. If you are interested in world affairs, you will get keen delight out of listening to some of the foremost leaders of public thought. Of news reports there is almost a plethora. All short-wave broadcasts are in English.

## **AUSTRALIA**

Australia is located in the Antipodes, where everybody walks upside down. If you expect from this that the Australian radio system is different from that of the Mother Country, you are quite right. The broadcasting stations are privately owned; and programs are considerably different from British standards. But you must remember that approximately 7,000,000 Australians occupy Australia, whereas the British make a better showing than that in London alone. In any case, you will enjoy listening to the Australian radio, because it gives you insight into the customs of the country and because it is still wonderful to hear what people are saying at the other end of the earth.

## **TOKYO**

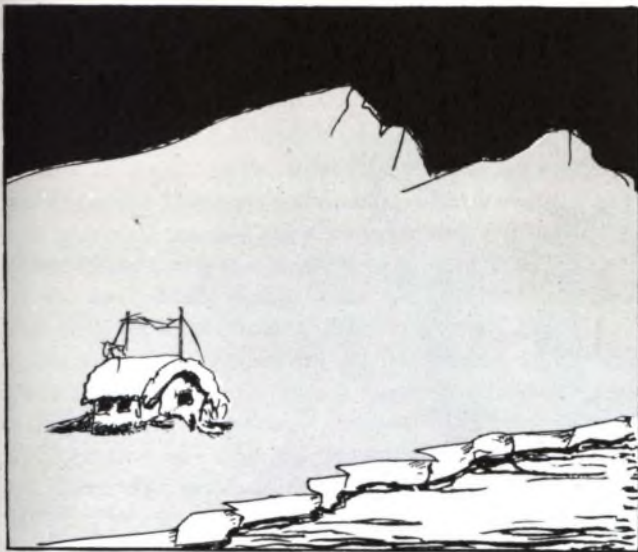
Japan is another country where the long arm of government reaches into the broadcasting booth. But it is worth your while to tune in on those charming islands, if for no other reason than to compare our own radio system with theirs. Besides, events are on the march in the Far East; and the news reports in English from Tokyo will help you keep up to date. As for music, you can take your choice of two varieties, occidental and oriental.



# HOW TO *Tune In Foreign Stations . . .*

By **LAURENCE M. COCKADAY**

1. Tuning for short-wave broadcasting stations should be done carefully—turn the tuning knob slowly and evenly and not in jerks.
2. The energy received by your antenna from a far-distant, short-wave station, may be hundreds of times weaker than that from a local broadcast station. You should, therefore, adjust your receiver for maximum sensitivity and for maximum selectivity when you start tuning in.
3. Short-wave stations are located on your tuning dial according to "frequency." Frequency is designated in "megacycles" or in "kilocycles." One megacycle equals 1,000 kilocycles. As an example: Station GSD may be found on the tuning dial at 11,750 kcs., or 11.75 mcs., according to whether your dial is calibrated in kilocycles or in megacycles.
4. Most short-wave broadcasting is done on special wave-bands set aside for that purpose by international convention. The 16-meter band gives best results in the early morning hours. The 19-meter band and the 25-meter band are best during daylight. The 31-meter band reaches a maximum during twilight and the 49-meter band is excellent at night.
5. Keep a log of the best short-wave stations you hear so that you can come back to their dial settings at the right time, to hear them again. If you hear a station too weak to identify one evening, come back to it the next night, and the next, and you may hear it strongly.
6. A good all-wave receiver deserves the best all-wave antenna you can purchase, and requires it for best short-wave results.
7. Choose a radio set with a wide-vision dial, accurately calibrated in megacycles or kilocycles or both, and one that is clearly illuminated but not too blindingly bright.
8. The tone control on your receiver, judiciously used, cuts out considerable noise that may exist when atmospherics are bad.
9. Consult the leading monthly radio periodicals that print up-to-date short-wave time-tables, as many stations change operating frequencies and program schedules from time to time.
10. Refer to the accurate short-wave station list printed in this book when you need help to identify any unknown station you tune in.
11. A short-wave receiver must be kept working at top efficiency and should be checked once or twice a year by an authorized serviceman for alignment and tube efficiency.
12. If you are interested in verifying your reception of short-wave broadcasts from a distance, write to the station, telling what you heard, when you heard it, and how it was received. Most stations will send you an attractive "verification" card that you can keep for proof and for a memento.



After you have become proficient, you can make other expeditions through Siberia

(Continued from page 13)

as "The Voice of Australia," and programs open and close with the "laughter" of the Australia kookaburra or laughing jackass. This, by the way, is a bird and not a quadruped!

Here is another Australian you will want to hear: VK3ME, Melbourne, 9510 kcs. (31.5 meters), heard weekdays, 4 to 7 a.m. The items broadcast comprise musical entertainment interspersed with interesting talks on Australian life.

The address for both VK2ME and VK3ME is Amalgamated Wireless, Ltd., 47 York Street, Sydney.

The third Australian station is VK3LR, Lyndhurst, 9580 kcs. (31.32 meters), heard weekdays, from 3 to 8 a.m. Address: Box 1686, G.P.O., Melbourne, C2.

And the fourth "down under" station is VK6ME, Perth, 9590 kcs. (31.28 meters), heard from 6 to 8 a.m., weekdays. Address: Amalgamated Wireless, Ltd., Perth, Western Australia.

Unlike most other foreign short-wave systems, Australian broadcasting is privately owned and their freedom from restraint is quite noticeable and refreshing.

To short-wave listeners in the Western part of the United States, programs from *Asia* are a more or less common occurrence. In California, it doesn't take much knowledge to fish around for and hear Japanese, Chinese, Javanese, Siberian and even Indian stations at one sitting. That is because the signals come across the Pacific with very little loss. But when they have to traverse half or possibly the whole of the United States as well, a little more knowledge of their habits is necessary. So let's make a speedy expedition through the most important spots in Asia.

Leaving Australia we turn northwest to the Sunda Islands, and our first stop is at Tandjongpriok, *Java*, at

Station YDA, which may be heard during the winter on 6040 kcs. (49.6 meters), from 3 to 7 a.m., when the weather is suitable. Address: N.I.R.O.M., Tandjongpriok. There are a number of other Javanese stations which do some broadcasting intermittently. They are at Soerabaia, Batavia and Bandoang. Frequencies of these are in the short-wave station list.

### Toward the Orient

Across the Malacca Straits is *Singapore*, where we find ZHI, 6012 kcs. (49.80 meters), broadcasting Sundays, from 11 p.m. to 2 a.m., and irregularly in the mornings, from 6 to 9 a.m. Address is Radio Service Co. of Malaya, Singapore.

Skipping across the Bay of Bengal there are two stations we might try for. One on the Island of *Ceylon*, is VPB, at Colombo, 6160 kcs. (48.7 meters). It transmits weekdays, from 6 a.m. to noon. The other station in *India* is VUB, at Bombay, on 9565 kcs. (31.36 meters), heard irregularly early mornings. Address: Station director, All-India Radio, Bombay.

One station in *Siam*, at Bangkok, call letters HSHPJ, is heard fairly well on Mondays, from 8 to 11 a.m., on



A good luck wish from Ecuador

10,955 kcs. (27.35 meters), and on 9350 kcs. (31.35 meters). Try both frequencies. Address: Superintending Engineer, P. Aram, Post and Telegraph Department, Bangkok.

### In the Far East

Winging up the *China* Coast, we come to Macao and Hong Kong on opposite sides of the Sikiang River basin, just below Canton. In these cities are the best Chinese stations: CQN, of Macao, 9677 kcs. (31 meters), best heard from 7 to 9 a.m., on Mondays and Fridays. Address: Government Broadcasting Station, General Post Office, Macao, Portuguese, China. The station at Hong Kong is ZBW (announcing as ZBW4), on 15,190 kcs. (19.75 meters), heard intermittently, from 9 p.m. to 10 a.m. It may also be heard (announcing as ZBW3), on 9525



## Darkest Africa



*A greeting from Colombia*

kcs. (31.49 meters), with the same schedule. In the winter it may be heard (announcing as ZBW2), on 6090 kcs. (49.26 meters). Station address: Post Office Box 200, Hong Kong.

Although all of these Asiatic stations announce in English, you may expect to hear some quite primitive languages and music (if you could call it such by our own standards) of unusual varieties: tom toms, sounds like rattling sticks, queer pipes, plucked strings, struck brass, in exotic cadences and discordant tones.

The most popular Asiatic programs are probably those from the far-off Land of the Rising Sun. This broadcasting comes to us from Nazaki. The broadcasting agency is the Broadcasting Corporation of *Japan*, with studios at Tokio.

### *After Japan — Siberia*

The complete list of Japanese stations can be found in the short-wave station list, but the best two stations that can be heard are JZK, 15,160 kcs. (19.79 meters), and JZJ, 11,800 kcs. (25.42 meters). These may be heard transmitting regularly between the hours of 4 and 5 p.m., and intermittently between 7 and 11 p.m.

News in English is broadcast every day at 4 p.m. Both oriental and western music are broadcast. Travelogues about Japan are also interesting, as are the records of Japanese life. The programs close with the Japanese national anthem. Station address: Overseas Section, Broadcasting Corporation of Japan, Tokio.

There is a real opportunity for the short-wave listener, who, when he has become proficient in exploring, to make ether expeditions through *Siberia, Manchukuo* and *Formosa*, for rare radio catches. I refer our prospective listeners to the short-wave station list for their proper calls and frequencies, as space does not permit my telling you of their program idiosyncracies. After all, time does not mean much in Asia, and it is a lot of fun to make some of these discoveries for yourself.

Now for some enlightening radio facts about the Dark Continent. Any radio short-wave listener tackling *Africa* must feel as Livingstone did when he set out to conquer that vast impenetrable jungle. For that is what it is, also, in a radio sense. There are only a few stations in Africa that penetrate to these shores. Catching one, even for brief periods of time, is a real accomplishment.

African stations are heard mostly during our winter. You might listen for VQ7LO, Nairobi, Kenya, on 6083 kcs. (49.32 meters). If you are lucky, you might pick it up sporadically between 6 a.m. and 6 p.m.—but you'll have to fish for it. Another radio safari will lead you to CR7AA, at Lourenzo, Marques, and you will find it at 6137 kcs. (48.88 meters), if conditions are right and if you tune sharply between the hours of 4 a.m. and 4 p.m. You might tune for ZTJ, at Johannesburg, slightly south of CR7AA, on 6098 kcs. (49.2 meters). Crossing over to the South Atlantic side is a small station, CR6AA, at Lobito, Angola, on 7177 kcs. (41.7 meters), that sometimes percolates through on Wednesdays and Saturdays, from 2 to 5 p.m. Station OPM, at Leopoldville, Belgian Congo, on 10,140 kcs. (29.59 meters), occasionally puts on a broadcast. Station ZEB, at Bulawayo, Southern Rhodesia, on 6148 kcs. (48.8 meters), occasionally gets through in the afternoon. Crossing the Mozambique Channel to *Madagascar* you might look for FIQA, at Tananarive, on 6000 kcs. (exactly 50 meters). In Northern Africa, in *Morocco, Libia, Egypt, or Ethiopia* and the Somalilands, are a number of new stations (or old stations with new call letters), springing up with broadcast propaganda of all kinds since conditions there have been in such a turmoil. Africa, then, is virgin soil for the short-wave explorer, and don't be surprised if you hook a big fish there.

For verification purposes you can address the African stations as follows: VQ7LO, Cable & Wireless, Ltd., P.O. Box 777, Nairobi, Kenya; CR7AA, Gremio dos Radifilos da Colonia de Mozambique, Caixa Postal 594, Lourenzo Marques, Mozambique; ZTJ, African Broadcasting Co., Ltd., P.O. Box 4559, Johannesburg, South Africa; CR6AA, P. O. Box 103, Lobito, Angola, Portuguese West Africa; OPM, Leopoldville, Belgian Congo; ZEB, P. O. Box, 792, Salisbury, Southern Rhodesia; FIQA, Administration des Postes, des Telegraphes et des Telephones, Tananarive, Madagascar.

### *Southeast of Mexico*

Lastly, we arrive at that hodge-podge of short-wave broadcasting, that is Central and South America, including the West Indies. Here is a sort of Never-Never Land, where you will hear plenty of stations (and loud, too), but seldom will be able to identify them unless you are well versed in the Spanish language. You will













# World - Wide

## SHORT-WAVE STATION LIST

Kc. Meters Call	Location	Kw.	Service, Etc.	Kc. Meters Call	Location	Kw.	Service, Etc.
400.00 0.75 WIXEG	Storrs, Conn.	0.5	Experimental	17.480 17.16 VWY2	Kirkee, India	20 0	Phone to Rugby
60.500 4.96 W8XKA	Pittsburgh, Pa.	0 15	Experimental	17.310 17.33 W3XL	Bound Brook, N. J.	20 0	Experimental
55.500 5.41 W8XKA	Pittsburgh, Pa.	0 15	Ex.: relays KDKA	17.265 17.37 DAF	Norddeich, Germany	20 0	Phone
41.000 7.32 W2XG	New York, N. Y.	0 1	Experimental	17.130 17.51 HAS5	Szekesfehervar, Hungary	20 0	Broadcast
31.600 9.50 W1XKA	Chicopee Falls, Mass.	0 5	Experimental	16.820 17.84 NAA	Arlington, Virginia	20 0	Time signals: 9:55-10:00 a.m. E. S. T.
31.600 9.49 W3XKA	Philadelphia, Pa.	0 1	Exp.: relays KYW	16.665 18.00	German Ships	20 0	Phone
31.600 9.49 W8XA1	Rochester, N. Y.	0 1	Exp.: relays WHAM	16.355 18.40 PCL	Kootwijk, Holland	20 0	Phone to Bandoeng
31.600 9.49 W8XKA	Pittsburgh, Pa.	0 1	Experimental	16.270 18.44 WLK	Lawrenceville, N. J.	20 0	Phone to Ruxby
31.600 9.49 W8XWJ	Detroit, Mich.	0 1	Exp.: relays WWJ	16.240 18.47 KTO	Manila, P. I.	40 0	Phone to Dixon
31.600 9.49 W9XPD	St. Louis, Mo.	0 1	Exp.: relays KSD	16.120 18.61 IRY	Rome, Italy	20 0	Phone
26.100 11.49 GSK	Daventry, England	20 0	Broadcast	16.030 18.71 KKP	Kahuku, Hawaii	40 0	Phone to KWO
21.540 13.93 W8XK	Pittsburgh, Pa.	40 0	Bc.: relays KDKA	15.985 18.77 KQH	Kahuku, Hawaii	40 0	Phone
21.530 13.93 G5J	Daventry, England	15 0	Broadcast	15.950 18.81 PLG	Bandoeng, Java	30 0	Phone: afternoons
21.520 13.94 W2XE	Wayne, N. J.	0 1	Bc.: relays WABC	15.880 18.89 FTK	Ste Assise, France	0 5	Phone to Saigon
21.520 13.94 JZM	Nazaki, Japan	20 0	Broadcast	15.865 18.91 CEC	La Granja, Chile	60 0	Phone
21.470 13.97 GSH	Daventry, England	5 0	Broadcast	15.860 18.91 JVD	Hurlingham, Argentina	10 0	Phone to Shanghai
21.460 13.98 W1XAL	Boston, Mass.	25 0	Broadcast	15.810 18.97 LSL3	Hurlingham, Argentina	10 0	Phone to London, Rio: morn. and eve
21.450 13.99 OLR6A	Podebrady, Czechoslovakia	20 0	Broadcast	15.750 19.05 JIA	Tyureki, Formosa	20 0	Phone to Nazaki
21.420 14.01 WKK	Lawrenceville, N. J.	60 0	Phone	15.680 19.13 JZA	Kanjoshi, Manchukuo	10 0	Phone to Nazaki
21.160 14.18 LSL4	Hurlingham, Argentina	10 0	Phone to London and Rio: day	15.660 19.16 JVE	Nazaki, Japan	10 0	Phone to PLE, P. I.; occ. bc.
21.140 14.19 KBI	Manila, P. I.	10 0	Phone	15.620 19.21 JVF	Nazaki, Japan	20 0	Phone to KWU; occ. bc.
21.080 14.23 PSA	Marapicu, Brazil	20 0	Phone: broadcast	15.505 19.35 CMA3	Havana, Cuba	40 0	Tests, irr.
21.060 14.25 WKA	Lawrenceville, N. J.	20 0	Phone to England	15.490 19.37 KEM	Bolinas, Calif.	40 0	Phone
21.060 14.25 KWN	Dixon, Calif.	60 0	Phone	15.475 19.39 KKL	Bolinas, Calif.	40 0	Phone
21.020 14.27 LSN6	Hurlingham, Argentina	10 0	Phone to New York: day	15.450 19.42 IUG	Addis Ababa, Ethiopia	20 0	Phone
20.910 14.35 PSB	Marapicu, Brazil	7 0	Phone	15.420 19.45 XEBM	Mazatlan, Sinaloa, Mexico	20 0	Bc.: relays XEBL
20.860 14.37 EHY	Madrid, Spain	40 0	Phone to Buenos Aires	15.420 19.45 KWO	Dixon, Calif.	20 0	Phone to Hawaii, Manila
20.820 14.41 KSS	Bolinas, Calif.	40 0	Phone	15.370 19.52 HAS3	Szekesfehervar, Hungary	20 0	Broadcast
20.780 14.44 KMM	Bolinas, Calif.	40 0	Phone	15.360 19.53 DZG	Zeesen, Germany	20 0	Phone
20.140 14.90 DWG	Nauen, Germany	0 1	Phone	15.355 19.54 KWU	Dixon, Calif.	20 0	Phone to Hawaii
20.040 14.97 OPL	Leopoldville, Belgian Congo	9 0	Phone to ORG: mornings	15.340 19.56 DJR	Zeesen, Germany	50 0	Broadcast
20.020 14.89 DFZ	Nauen, Germany	20 0	Phone to South America	15.330 19.57 W2XAD	Wayne, N. J.	20 0	Bc.: relays WGY
19.980 15.02 KAX	Manila, P. I.	20 0	Phone to Calif.	15.320 19.58 OLR5B	Podebrady, Czechoslovakia	20 0	Broadcast
19.820 15.14 WKN	Lawrenceville, N. J.	10 0	Phone to England	15.310 19.60 GSP	Daventry, England	20 0	Broadcast
19.720 15.21 EAQ	Madrid, Spain	0 1	Phone	15.300 19.60 CP7	La Paz, Bolivia	1 0	Phone
19.700 15.23 DFJ	Nauen, Germany	7 0	Phone	15.280 19.63 DJQ	Zeesen, Germany	5-50	Broadcast
19.680 15.26 RUY	Abu Zabal, Cairo, Egypt	0 1	Phone	15.280 19.63 LRU	Buenos Aires, Argentina	5 0	Bc.: relays LR1
19.600 15.31 LSF	Monte Grande, Argentina	20 0	Phone	15.270 19.65 W2XE	Wayne, N. J.	15 0	Bc.: relays WABC
19.520 15.37 IRW	Rome, Italy	20 0	Phone to South America	15.260 19.66 GSI	Daventry, England	15 0	Broadcast
19.460 15.42 DFM	Nauen, Germany	40 0	Phone	15.250 19.67 W1XAL	Boston, Mass.	5 0	Broadcast
19.345 15.51 PMA	Bandoeng, Java, D. E. I.	12 0	Phone: sometimes bc.	15.243 19.68 TPA2	Pontoise, France	12 0	Broadcast
19.260 15.58 PPU	Sepetiba, Brazil	20 0	Phone	15.230 19.70 OLR5A	Podebrady, Czechoslovakia	25 0	Broadcast
19.220 15.61 WKF	Lawrenceville, N. J.	8 0	Phone	15.220 19.71 PCJ	Hulzen, Holland	20 0	Experimental
19.200 15.62 ORG	Ruyselede, Belgium	60 0	Phone	15.210 19.72 W8XK	Pittsburgh, Pa.	40 0	Bc.: relays KDKA
19.140 15.68 LSM3	Hurlingham, Argentina	0 1	Phone to Madrid, Berlin, Paris: day	15.200 19.74 DJB	Zeesen, Germany	5-50	Broadcast
19.050 15.75 JVC	Nazaki, Japan	20 0	Phone: sometimes bc.	15.190 19.75 ZBW4	Hongkong, China	2 0	Broadcast
19.020 15.77 H88PJ	Bangkok, Siam	15 0	Broadcast	15.180 19.76 GSO	Daventry, England	15 0	Broadcast
18.910 15.86 JVA	Nazaki, Japan	20 0	Phone to Europe; occ. bc.	15.160 19.79 JZK	Nazaki, Japan	25 0	Broadcast
18.890 15.88 ZSS	Klipheuevel, S. Africa	40 0	Phone to Rugby	15.160 19.78 OLR5C	Podebrady, Czechoslovakia	20 0	Broadcast
18.860 15.91 WKM	Rocky Point, N. Y.	40 0	Phone	15.150 19.80 YDC	Bandoeng, Java	15 0	Broadcast
18.830 15.93 PLE	Bandoeng, Java, D. E. I.	40 0	Phone to Dixon and Nazaki	15.140 19.81 GSF	Daventry, England	10 0	Broadcast
18.670 16.08 OCI	Lima, Peru	15 0	Phone	15.123 19.84 HVJ	Vatican City	10 0	Broadcast
18.620 16.11 GAU	Rugby, England	40 0	Phone to WM1, VWY	15.110 19.85 DJL	Zeesen, Germany	5-50	Broadcast
18.600 16.13 PDM	Kootwijk, Holland	40 0	Phone	15.070 19.91 PSD	Marapicu, Brazil	12 0	Phone
18.545 16.18 PCM	Kootwijk, Holland	20 0	Phone to Calif.	15.055 19.93 WNC	Hialeah, Florida	0 4	Phone
18.480 16.23 HBH	Prangins, Switzerland	20 0	Phone	15.040 19.95 RKT	Moscow, U. S. S. R.	20 0	Phone to WQG: mornings
18.405 16.30 PCK	Kootwijk, Holland	40 0	Phone to Bandoeng	15.000 20.00 WWV	Beltsville, Md.	1 0	Freq. standard: Tue, Wed, Fri, 2-3 p.m. E. S. T.
18.340 16.38 WLA	Lawrenceville, N. J.	15 0	Phone to GAS	14.985 YSL	San Salvador, El Salvador	40 0	Phones Mexican stations
18.310 16.38 FZS	Salgon, French Indo-China	10 0	Phone to France	14.980 20.03 KAY	Manila, P. I.	40 0	Phone to Dixon
18.270 16.42 IUD	Addis Ababa, Ethiopia	20 0	Phone	14.970 20.04 LZA	Sofia, Bulgaria	20 0	Broadcast
18.190 16.49 JVB	Nazaki, Japan	20 0	Phone to Java; P. I.; bc.	14.960 20.05 YSL	San Salvador, El Salvador	20 0	Phone
18.165 16.51 PFZ	Sepetiba, Brazil	40 0	Phone	14.935 20.09 PSE	Marapicu, Brazil	10 0	Phone: broadcast
18.135 16.55 PMC	Bandoeng, Java	12 0	Phone to U. S. A.	14.910 20.12 JVG	Nazaki, Japan	10 0	Phone to Formosa; broadcast
18.090 16.58 TYE	Pontoise, France	40 0	Phone	14.690 20.42 PSF	Marapicu, Brazil	20 0	Phone: broadcast
18.040 16.63 KQR	Bolinas, Calif.	40 0	Phone	14.600 20.55 JVB	Nazaki, Japan	20 0	Phone: broadcast
18.020 16.65 KQJ	Bolinas, Calif.	40 0	Transpacific phone	14.590 20.56 WMN	Lawrenceville, N. J.	20 0	Phone
17.980 16.69 KQZ	Bolinas, Calif.	40 0	Phone	14.535 20.64 HBJ	Prangins, Switzerland	20 0	Phone
17.940 16.72 WQB-	Rocky Point, N. Y.	40 0	Phone	14.530 20.65 LSN1	Hurlingham, Argentina	60 0	Phone to New York; morn., eve.
17.920 16.74 WQF	Rocky Point, N. Y.	40 0	Phone	14.500 20.69 LSM2	Hurlingham, Argentina	60 0	Phone to Madrid, Berlin, Paris: morn., eve.
17.790 16.86 GSG	Daventry, England	15 0	Broadcast	14.480 20.72 YNA	Managua, Nicaragua	20 0	Phone to WNC
17.785 16.87 JZL	Nazaki, Japan	15 0	Broadcast	14.460 20.75 DZH	Nauen, Germany	15 0	Phone
17.780 16.87 W1XK	Pittsburgh, Pa.	40 0	Bc.: relays KDKA	14.440 20.78 GBW	Rugby, England	15 0	Phone
17.780 16.87 W3XAL	Bound Brook, N. J.	15 0	Broadcast: relays WJZ	13.980 21.46 VPD2	Suva, Fiji Islands	20 0	Experimental
17.780 16.87 W9XAA	Chicago, Illinois	0 5	Experimental	13.820 21.70 SUZ	Abu Zabal, Cairo, Egypt	20 0	Phone
17.775 16.88 PHI	Hulzen, Holland	23 6	Broadcast	13.820 21.70 SUICH	Cairo, Egypt	8 0	Amateur: broadcast
17.760 16.89 W2XE	Wayne, N. J.	15 0	Bc.: relays WABC	13.811 21.72 SUZ1	Abu Zabal, Cairo, Egypt	8 0	Phone
17.760 16.89 DJE	Zeesen, Germany	4-0	Broadcast	13.760 21.80 TYE2	Pontoise, France	12 0	Phone to U. S. A.
17.755 16.90 ZBW5	Hongkong, China	2 0	Broadcast	13.690 21.91 KKZ	Bolinas, Calif.	40 0	Phone to Japan, Java
17.750 16.90 IAC	Coltano, Italy	20 0	Phone: early mornings				
17.740 16.91 HSP	Bangkok, Siam	20 0	Phone to JVG				
17.640 17.00	British Ships	0 1	Phone				
17.520 17.12 DFB	Nauen, Germany	0 1	Phone to YVR				

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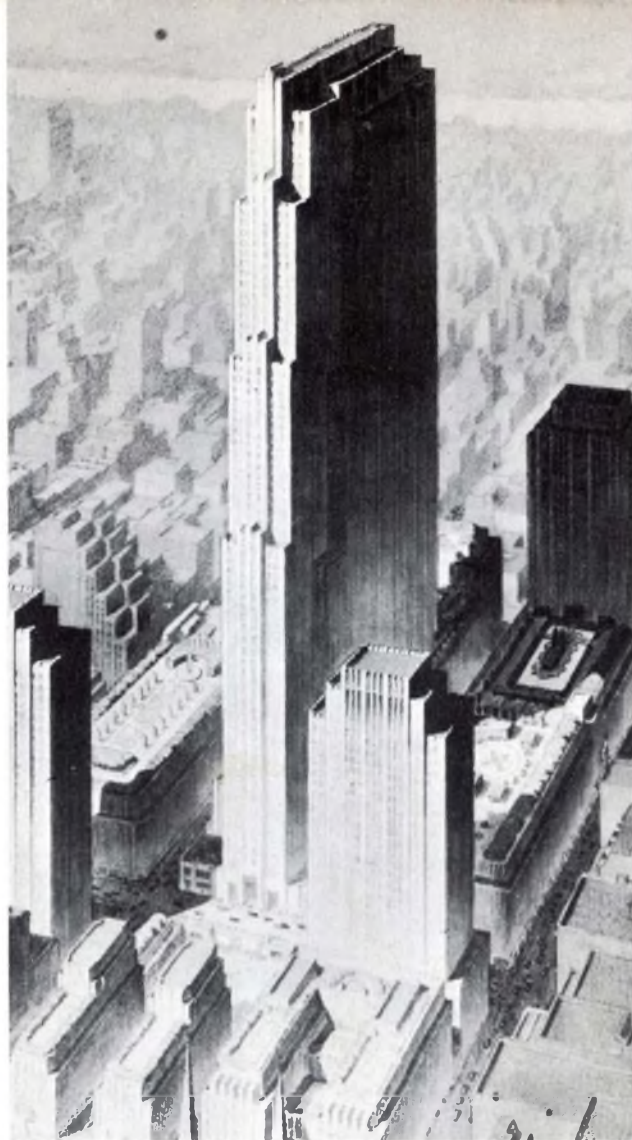


# WORLD-WIDE SHORT-WAVE STATION LIST

Kc. Meters Call	Location	Kw.	Service, Etc.	Kc. Meters Call	Location	Kw.	Service, Etc.
13.635 22.00 SPW	Warsaw, Poland	20.0	Broadcast	10.070 29.79 EDN	Madrid, Spain	10.0	Experimental
13.610 22.04 JYK	Kemikawa-Cho, Japan	15.0	Experimental; bc.	10.065 29.81 TDE	Kanjoishi, Manchukuo	20.0	Phone to JVO
13.585 22.08 GBB	Rugby, England	15.0	Phone	10.055 29.84 ZFH	St. George, Bermuda	1.5	Phone
13.560 22.12 JVI	Nazaki, Japan	10.0	Phone to Manchukuo; also bc.	10.055 29.84 SUV	Abu Zabal, Cairo, Egypt	20.0	Phone to Germany, England
13.337 22.47 YVQ	Maracay, Venezuela	20.0	Phone	10.042 29.87 DZB	Zeesen, Germany	.....	Phone
13.320 22.70	British Ships	.....	Phone	10.000 30.00 WWV	Beltville, Md	.....	Standard frequency
13.285 22.58 CGA3	Drummondville, Canada	15.0	Phone to ships	9.990 30.03 KAZ	Manila, P. I.	40.0	Phone
13.240 22.66 KBJ	Manila, P. I.	40.0	Phone	9.940 30.18 CSW	Lisbon, Portugal	.....	Broadcast
13.210 22.71 FNSK	S. Normandie	.....	Phone	9.890 30.32 LSN2	Hurlingham, Argentina	60.0	Phone to New York; nights
13.140 22.83 CWH	Cerrito, Uruguay	1.5	Phone	9.860 30.43 EAQ	Madrid, Spain	20.0	Broadcast
13.050 22.99	Italian Ships	.....	Phone	9.840 30.49 JYS	Kemikawa-Cho, Japan	10.0	Bc.; tests
13.020 23.04 JZE	Nazaki, Japan	10.0	Phone to ships	9.740 30.80 COCQ	Havana, Cuba	.....	Bc.; relays CMQ
12.795 23.44 IAC	Coltano, Italy	52.0	Phone	9.675 31.01 DZA	Zeesen, Germany	.....	Phone
12.885 23.28 NPG	San Francisco	.....	Time signals; 4:55-5:00 p.m. E. S. T.	9.670 31.02 T14NRH	Heredia, C. R.	.....	Broadcast
12.830 23.38 CNR	Rabat, Morocco	12.0	Phone to France	9.665 31.04 CT1AA	Lisbon, Portugal	2.0	Broadcast
12.680 23.66 YNE	Puerto Cabezas, Nicaragua	0.1	Phone	9.660 31.08 PSJ	Marapic, Brazil	.....	Phone
12.630 23.75 NAA	Arlington, Va.	.....	Time signals; 9:55-10:00 a.m. E. S. T.	9.660 31.06 LRX	Buenos Aires, Argentina	5.0	Bc.; relays LRI
12.290 24.41 GBU	Rugby, England	15.0	Phone	9.645 31.10 HH3W	Port-au-Prince, Haiti	0.03	Broadcast
12.250 24.49 TVB	Pontoise, France	.....	Phone to JVH, ships	9.635 31.14 12R03	Rome, Italy	20.0	Broadcast
12.235 24.52 TFJ	Reykjavik, Iceland	.....	Broadcast	9.618 31.18 HJ1AHP	Cartagena, Colombia	0.7	Broadcast
12.215 24.56 TYA	Pontoise, France	15.0	Phone	9.610 31.22 Y1B1	Sorabaja, Java, D. E. I.	1.0	Bc.; relays YDA
12.150 24.69 GBS	Rugby, England	15.0	Phone to U. S. A.	9.605 31.23 HP5J	Panama, Panama	0.16	Broadcast
12.130 24.73 DZE	Zeesen, Germany	.....	Phone	9.600 31.25 CQN	Macao, Port China	.....	Broadcast
12.060 24.88 PDV	Kootwijk, Holland	60.0	Phone	9.600 31.25 CB960	Santiago, Chile	0.1	Broadcast
12.020 24.96 V1Y	VK3ME	.....	Tests with Drummondville	9.600 31.25 RAN	Moscow, U. S. S. R.	.....	Broadcast
12.000 25.00 RV59	Melbourne, Australia	20.0	Bc. and phone	9.597 31.26 VK6ME	Perth, Australia	.....	Experimental
1.955 25.09 IUC	Addis Ababa, Ethiopia	3.5	Phone	9.595 31.27 H1L	Prangins, Switzerland	20.0	Broadcast
1.950 25.11 KKK	Bolinas, Calif.	40.0	Phone	9.590 31.28 PC1J	Huizen Holland	20.0	Exp. broadcast
1.900 25.21 YEWI	Mexico, D. F., Mexico	.....	Broadcast	9.590 31.28 W3XAU	Philadelphia, Pa.	10.0	Bc.; relays WCAU
1.900 25.21 CT1GO	Paredo, Portugal	0.35	Broadcast	9.590 31.28 VK2ME	Sydney, Australia	20.0	Broadcast
1.900 25.21 OLRAD	Podebrady, Czechoslovakia	25.0	Broadcast	9.590 31.31 VK3LR	Lyndhurst, Vic., Australia	20.0	Broadcast
1.895 25.22 HP51	Aquadule, Panama	0.05	Broadcast	9.590 31.31 GSC	Davenport, England	20.0	Broadcast
1.895 25.22 XENR	Mexico, D. F., Mexico	.....	Broadcast	9.575 31.49 H2ABC	Cucuta, Colombia	0.25	Broadcast
1.880 25.25 XENA	Mexico, D. F., Mexico	0.1	Broadcast	9.570 31.35 W1XK	Millis, Mass.	10.0	Bc.; relays WBZ, WBZA
1.880 25.25 W9XF	Chicago, Illinois	.....	Bc.; relays WENR	9.565 31.36 HP5S	Panama	0.1	Broadcast
1.875 25.26 OLRAC	Podebrady, Czechoslovakia	25.0	Broadcast	9.565 31.36 VUB	Bombay, India	4.5	Broadcast
1.870 25.27 W8XK	Pittsburgh, Pa.	40.0	Bc.; relays KDKA	9.560 31.38 DJA	Zeesen, Germany	5-50	Broadcast
1.860 25.29 YDB	Sorabaja, Java, D. E. I.	1.0	Broadcast	9.559 31.38 HJ1AHP	Barranquilla, Colombia	1.0	Broadcast
1.860 25.30 GSE	Davenport, England	20.0	Broadcast	9.551 31.41 H2ABZ	Cucuta, Colombia	0.03	Broadcast
1.855 25.31 DJP	Zeesen, Germany	5-50	Broadcast	9.550 31.41 OLR3A	Podebrady, Czechoslovakia	25.0	Broadcast
1.840 25.34 OLR4A	Podebrady, Czechoslovakia	25.0	Broadcast	9.540 31.47 LKJ1	Jelny, Norway	1.0	Broadcast
1.830 25.36 W2XE	New York, N. Y.	10.0	Bc.; relays WABC	9.540 31.47 DJN	Zeesen, Germany	5-50	Broadcast
1.830 25.36 W9XAA	Chicago, Illinois	0.5	Bc.; relays WCFL	9.535 31.46 JZ1	Nazaki, Japan	.....	Broadcast
1.830 25.36 XEBR	Hermosillo, Sonora, Mexico	.....	Bc.; relays XEBH	9.530 31.48 W2XAF	Schenectady, N. Y.	40.0	Bc.; relays WGY
1.820 25.38 GSN	Davenport, England	20.0	Broadcast	9.525 31.49 Z1W3	Hongkong, China	2.0	Bc.; relays Z1W
1.810 25.40 C1RX	Toronto, Canada	0.5	Broadcast	9.520 31.51 XEME	Merida, Yucatan, Mexico	0.015	Bc.; relays NEFC
1.810 25.40 12R04	Rome, Italy	25.0	Broadcast	9.520 31.51 HJ4ABH	Armenia, Colombia	.....	Bc.; relays HJ4ABN
1.804 25.42 OAN5A	Ica, Peru	.....	Broadcast	9.510 31.55 GSB	Davenport, England	20.0	Broadcast
1.801 25.42 OER2	Austria, Vienna	1.5	Broadcast	9.510 31.58 HJU	Buenaventura, Colombia	1.0	Broadcast
1.800 25.42 JZJ	Nazaki, Japan	.....	Experimental	9.510 31.58 VK3ME	Melbourne, Australia	5.0	Broadcast
1.795 25.43 JJO	Zeesen, Germany	5-50	Experimental	9.510 31.58 W9R3B	Podebrady, Czechoslovakia	25.0	Broadcast
1.790 25.45 W1XAL	Boston, Mass.	5.0	Broadcast	9.500 31.58 PRF5	Rio de Janeiro, Brazil	.....	Broadcast
1.770 25.49 DJD	Zeesen, Germany	5-50	Broadcast	9.500 31.58 HJ1ABE	Cartagena, Colombia	0.05	Broadcast
1.760 25.51 OLR4B	Podebrady, Czechoslovakia	25.0	Broadcast	9.493 31.60 XEFT	Vera Cruz, Ver., Mexico	.....	Broadcast
1.750 25.53 GSD	Davenport, England	20.0	Broadcast	9.490 31.61 KFI	Hollnas, Calif.	20.0	Phone
1.740 25.55 HP5L	David, Panama	0.35	Broadcast	9.490 31.61 W2F	Rocky Point, N. Y.	40.0	Phone
1.730 25.57 PH1	Huizen, Holland	23.6	Broadcast winter months	9.480 31.65 XEDQ	Guadaluajara, Jalisco, Mexico	0.5	Bc.; relays XED
1.730 25.57 C1RX	Windsor, Man., Canada	2.0	Bc. relays CJRC	9.480 31.65 KET	Hollnas, Calif.	40.0	Phone
1.720 25.60 TP4A	Pontoise, France	12.0	Broadcast	9.450 31.75 TGWA	Guatemala City, Guatemala	0.2	Experimental
1.718 25.60 CR7BH	Lourenco Marques, Mozambique	0.33	Broadcast	9.441 31.78 HC2EHA	Guayaquil, Ecuador	.....	Broadcast
1.705 25.63 SM5SX	Stockholm, Sweden	.....	Broadcast	9.428 31.82 COCH	Havana, Cuba	10.0	Broadcast
1.680 25.68 K10	Kahuku, Hawaii	40.0	Phone to Bolinas	9.425 31.84 W2AA	Arlington, Va.	.....	Time signals
1.670 25.71 PH1	Nazaki, Japan	5.0	Phone	9.415 31.86 PLV	Bandoeng, Java, D. E. I.	80.0	Phone, sometimes bc.
1.665 25.73 JVL	Nazaki, Japan	10.0	Phone to Formosa; bc.	9.360 32.05	Fort de France, Martinique, F. W. I.	.....	Broadcast
1.595 25.88 VRR4	Stony Hill, Jamaica	.....	Phone to Haleah, Fla.	9.350 32.09 HSAPJ	Hongkong, Siam	.....	Broadcast
1.540 26.00 XGR	Shanghai, China	20.0	Phone	9.320 32.15 OAX41	Lima, Peru	.....	Broadcast
1.495 26.10 V1Z-3	Fiskville, Australia	1.0	Phone to Drummondville	9.300 32.26 YNGU	Managua, Nicaragua	.....	Broadcast
1.435 26.24 COCX	Havana, Cuba	1.0	Bc.; relays CMX	9.220 32.54 YNE	Puerto Cabezas, Nicaragua	0.1	Phone
1.430 26.25 YNE	Puerto Cabezas, Nicaragua	0.1	Phone	9.125 32.87 HAT4	Szekesfehazar, Hungary	20.0	Broadcast
1.345 26.35 HBO	Prangins, Switzerland	20.0	Broadcast	9.045 33.17 VVY	Kirkee, India	.....	Phone to England, mornings
1.340 26.46 DAF	Norddeich, Germany	.....	Phone	9.040 33.19 TYA2	Pontoise, France	15.0	Phone to Algeria
1.240 26.50 HIN	Trijillo, D. R.	0.75	Broadcast	9.030 33.48 PVA	Ajeras, Algeria	.....	Broadcast
1.140 26.93	German Ships	.....	Phone	9.048 33.53 HCJB	Quito, Ecuador	0.5	Broadcast
1.040 27.17 HRW-HRY	La Celba, Honduras	0.1	Phone	8.830 33.96	British Ships, French Ships	.....	Phone
11.040 27.17 CSW	Lisbon, Portugal	5.0	Broadcast	8.795 34.11 HKV	Bogota, Colombia	.....	Broadcast
11.000 27.27 ZLT4	Wellington, New Zealand	.....	Phone; cc. bc.	8.775 34.18 PNI	Makassar, Celebes, D. E. I.	3.0	Phone; occ. bc.
11.000 27.27 PLP	Bandoeng, Java	3.0	Phone; bc.	8.710 34.44 KBB	Manila, P. I.	.....	Phone
10.955 27.38 HSG2	Bangkok, Siam	.....	Phone	8.719 34.40 WPD2	Suva, Fiji Islands	.....	Broadcast
10.850 27.65 DFL	Nauen, Germany	2.0	Phone	8.665 34.62 CO9JQ	Camaguey, Cuba	0.20	Broadcast
10.840 27.68 KWV	Dixon, Calif.	20.0	Phone to Hawaii	8.505 35.27 YNLG	Managua, Nicaragua	0.5	Broadcast
10.770 27.86 GCP	Rugby, England	15.0	Phone	8.470 35.42	German Ships	.....	Phone
10.740 27.93 JVM	Nazaki, Japan	20.0	Phone to U. S. A.; occ. bc.; relays JOAK	8.765 34.23 DAF	Norddeich, Germany	.....	Phone to ships
10.670 28.12 CEC	La Granja, Chile	0.5	Phone	8.400 35.71 HC2CW	Guayaquil, Ecuador	.....	Broadcast
10.660 28.14 JVN	Nazaki, Japan	20.0	Bc. relays JOAK	8.300 36.14 ZP10	Asuncion, Paraguay	0.015	Broadcast
10.620 28.25 WEF	Rocky Point, N. Y.	40.0	Phone to Europe	8.290 36.19 HRW-HRY	La Celba, Honduras	0.1	Phone
10.610 28.28 WEA	Rocky Point, N. Y.	40.0	Experimental	8.185 36.65 PSK	Marapic, Brazil	.....	Phone; bc.
10.578 28.36 FYB	Paris, France	.....	Time signals; 7:55-8 p.m. E. S. T.	8.120 36.95 KAZ	Manila, P. I.	20.0	Phone to Dixon, Calif.
10.535 28.48 JIB	Tyureki, Formosa	6.0	Phone to Japan	8.035 37.34 CNR	Rabat, Morocco	12.0	Phone; bc.
10.430 28.76 TYE3	Pontoise, France	12.0	Phone to U. S. A.	8.035 37.34 CFIJ	Antofagasta, Chile	0.4	Phone
10.430 28.76 YBG	Medan, Sumatra, D. E. I.	3.0	Phone; occ. bc.	7.901 37.98 ISL1	Hurlingham, Argentina	60.0	Phone to Rio; night
10.420 28.79 XGW	Shanghai, China	20.0	Phone	7.880 38.07 JYR	Kemikawa-Cho, Japan	5.0	Broadcast
10.410 28.82 KES	Bolinas, Calif.	40.0	Phone	7.860 38.12 SUV	Abu Zabal, Cairo, Egypt	20.0	Phone
10.410 28.82 LSY	Monte Grande, Argentina	10.0	Phone	7.854 38.20 HC2JSB	Guayaquil, Ecuador	0.5	Broadcast
10.410 28.82 PDK	Kootwijk, Holland	60.0	Phone	7.830 38.31 PGA	Kootwijk, Holland	60.0	Phone
10.400 28.85 KEZ	Dixon, Calif.	40.0	Phone	7.810 38.41 YNE	Puerto Cabezas, Nicaragua	0.1	Phone
10.375 28.92 JVO	Nazaki, Japan	10.0	Phone to Manchukuo; bc.	7.797 38.47 HBP	Prangins, Switzerland	20.0	Broadcast
10.370 28.93 EAJ43	Tenerife, Canary Islands	.....	Broadcast	7.740 38.76 CEC	La Granja, Chile	0.5	Phone
10.350 28.98 EAJ33	Caramaca, Spain	.....	Broadcast	7.620 39.32 IUB	Addis Ababa, Ethiopia	.....	Phone
10.350 28.98 LSX	Monte Grande, Argentina	12.0	Phone; also bc.	7.560 39.68 YNLF	Managua, Nicaragua	.....	Broadcast
10.335 29.03 ZFD	St. George, Bermuda	1.5	Phone; mostly telegraph	7.550 39.74 T1RW5	Puntarenas, Costa Rica	0.12	Broadcast
10.330 29.03 ORK	Ruyselede, Belgium	11.0	Broadcast	7.510 39.95 JVP	Kahuku, Hawaii	40.0	Phone
10.310 29.10 PPM	Sepetiba, Brazil	20.0	Phone	7.470 40.16 JVV	Nazaki, Japan	20.0	Bc.; phone
10.300 29.13 LSL2	Hurlingham, Argentina	60.0	Phone to London, Rio; night	7.415 40.45 WEG	Nazaki, Japan	10.0	Phone to Java
10.290 29.16 DZC	Zeesen, Germany	.....	Phone	7.390 40.65 XECP	Rocky Point, N. Y.	40.0	Phone
10.260 29.24 PMN	Bandoeng, Java, D. E. I.	3.0	Phone; occ. bc.	7.370 40.71 KFG	Mexico, D. F., Mexico	20.0	Broadcast
10.250 29.27 LSK3	Hurlingham, Argentina	60.0	Phone to Madrid, Berlin, Paris; night	7.315 41.01 W2LAT	Kahuku, Hawaii	40.0	Phone
10.230 29.33 CED	Antofagasta, Chile	0.4	Phone; bc.	7.288 41.14 VK5DI	Adelaide, Australia	.....	Experimental
10.220 29.35 PSB	Marapic, Brazil	.....	Phone; bc.	7.281 41.20 SM5SD	Stockholm, Sweden	0.03	Broadcast
10.170 29.48 RIO	Baku, U. S. S. R.	.....	Phone	7.220 41.55 ECN1	Barcelona, Spain	.....	Broadcast
10.140 29.59 OPM	Leopoldville, Belgian Congo	15.0	Phone to ORK	7.210 41.61 EAAAH	Santa Cruz, Tenerife, C. I.	.....	Broadcast
10.080 29.76 RIR	Tiflis, U. S. S. R.	4.0	Phone to RIO, RNE	7.200 41.67 YNAM	Managua, Nicaragua	.....	Bc.; amateur
				7.200 41.67	San Sebastian, Spain	.....	Phone
				7.177 41.80 CR6AA	Lobita, Angola	.....	Phone
				7.165 41.87	Port. W. Africa	0.5	Bc.; C. W. phone
				7.100 42.25 FO8AA	Valencia, Spain	.....	Broadcast
				7.082 42.36 P11J	Papeete, Tahiti	0.2	Broadcast
					Dordrecht, Holland	.....	Amateur; sometimes bc.

# WORLD-WIDE SHORT-WAVE STATION LIST

Kc. Meters Call	Location	Kw.	Service, Etc.	Kc. Meters Call	Location	Kw.	Service, Etc.
7.020 42 73 EGP1	Barcelona, Spain	.....	Broadcast	6.067 49 45 VPB	Colombo, Ceylon	.....	Broadcast
7.000 42 86 FA9AH	Tetuan, Sp. Morocco	.....	Broadcast	6.065 49 46 SBG	Motala, Sweden	10 0	Broadcast
7.000 42 86 PZH	Paramaribo, Dutch Guiana	.....	Broadcast	6.065 49 46 XEXR	Mexico, D. F., Mexico	.....	Broadcast
6.970 43 04 HCETC	Quito, Ecuador	0 03	Broadcast	6.060 49 50 OXY	Skamlebaek, Denmark	0 5	Broadcast
6.960 43 10 VK89C	Port Hedland, Australia	.....	Broadcast	6.060 49 50 WRXAL	Cincinnati, Ohio	10 0	Bc.: relays WLW
6.900 43 48 HI2D	Ciudad, Trujillo	0 1	Broadcast	6.060 49 50 W3XAU	Philadelphia, Pa.	10 0	Bc.: relays WCAU
6.890 43 73 KEL	Bethans, Calif.	40 0	Phone	6.050 49 59 HJ3ABD	Bogota, Colombia	1 0	Broadcast
6.845 43 81 XGOX	Nanking, China	.....	Broadcast	6.050 49 59 XEXF	Mexico, D. F., Mexico	.....	Broadcast
6.805 44 07 HI7P	Trujillo, D. R.	0 025	Broadcast	6.045 49 62 XETW	Mexico, D. F., Mexico	.....	Broadcast
6.750 44 38 HIH	San Pedro de Macoris, D. R.	10 15	Broadcast	6.042 49 65 HJ1ABG	Barranquilla, Colombia	0 15	Broadcast
6.725 44 44 JVT	Nazaki, Japan	20 0	Phone to U. S. A.: bc.	6.040 49 67 W4XB	Miami Beach, Fla.	2 5	Bc.: relays WIOD
6.730 44 48 HI3C	La Romana, D. R.	0 25	Broadcast	6.040 49 67 HI9B	Santiago de los Caballeros, D. R.	0 1	Broadcast
6.718 44 66 QDK	Mano, P.	40 0	Phone	6.040 49 67 W1XAL	Boston, Mass.	5 0	Broadcast
6.710 44 71 KEF	Bollina, Calif.	40 0	Phone	6.040 49 67 YDA	Tandjongpriok, Java, D. E. I.	10 0	Broadcast
6.687 44 86 TIEP	San Jose, Costa Rica	.....	Broadcast	6.033 49 72 HJ4ABP	Medellin, Colombia	.....	Broadcast
6.672 44 96 YVQ	Maracay, Venezuela	10 0	Phone	6.030 49 75 OLR2B	Podebrady, Czechoslovakia	25 0	Broadcast
6.635 45 22 HC2RL	Guayaquil, Ecuador	0 15	Broadcast	6.030 49 75 HP5B	Panama, Panama	0 1	Broadcast
6.630 45 25 HIT	Trujillo, D. R.	0 2	Broadcast	6.030 49 75 VE9CA	Calgary, Alberta, Canada	0 1	Bc.: relays CFCN
6.620 45 32 PRADO	Riobamba, Ecuador	.....	Bc.: Thursdays	6.030 49 75 XERQ	Mazatlan, Mexico	.....	Broadcast
6.578 45 60 HCVT	Ambato, Ecuador	.....	Broadcast	6.025 49 79 HJ1ABJ	Santa Marta, Colombia	0 025	Broadcast
6.555 45 76 HI4D	Trujillo, D. R.	.....	Broadcast	6.020 49 83 DJC	Zeesen, Germany	5 50	Broadcast
6.550 45 80 TIRCC	San Jose, Costa Rica	.....	Broadcast	6.020 49 83 XE1W	Vera Cruz, Ver., Mexico	.....	Broadcast
6.545 45 84	Tetuan, Morocco	0 2	Broadcast	6.015 49 87 XEWI	Mexico, D. F., Mexico	0 25	Broadcast
6.545 45 84	Ciudad Bolivar, Venezuela	0 25	Broadcast	6.012 49 80 ZHI	Singapore, Malaya	.....	Broadcast
6.540 45 87 YN1GG	Managua, Nicaragua	0 1	Broadcast	6.012 49 80 HJ3ABH	Bogota, Colombia	1 2	Broadcast
6.520 46 01 YV4RB	Valencia, Venezuela	0 3	Broadcast	6.010 49 92 VP3MR	Georgetown, British Guiana	0 25	Amateur; bc.
6.520 46 01 HRW-				6.010 49 92 COCO	Havana, Cuba	0 25	Broadcast
6.500 46 15 HIL	La Ceiba, Honduras	0 1	Phone	6.010 49 92 OLR2A	Panama, Panama	0 1	Broadcast
6.500 46 15 YV1RM	Trujillo, D. R.	0 05	Broadcast	6.005 49 96 XE1X	Montreal, Quebec	0 075	Bc.: relays CFCF
6.470 46 31 H8A	Cristobal de Aranza, Venezuela	.....	Broadcast	6.005 49 96 VE9DN	Montreal, Quebec	4 0	Broadcast
6.477 46 33 HI4V	Trujillo, D. R.	0 025	Broadcast	6.003 49 97 XEBT	Mexico, D. F., Mexico	1 0	Bc.: relays XEB
6.425 46 67 OAX4K	Lima, Peru	.....	Broadcast	6.000 50 00 HJ1ABC	Quibdo, Colombia	0 1	Broadcast
6.425 46 69 W3XL	Bound Brook, N. J.	100 0	Experimental	6.000 50 00 YO1	Bucharest, Roumania	0 3	Broadcast
6.420 46 73 HI18	Santiago, D. R.	0 02	Broadcast	6.000 50 00 YV59	Mexico, D. F., Mexico	.....	Broadcast
6.410 46 80 T1EG	San Jose, Costa Rica	1 0	Broadcast	6.000 50 00 TGWA	Guatemala City, Guatemala	0 2	Broadcast
6.400 46 85 YV5RH	Caracas, Venezuela	0 25	Broadcast	6.000 50 00 FIQA	Tananarive, Madagascar	.....	Broadcast
6.380 47 02 YV5RF	Caracas, Venezuela	0 1	Broadcast	5.980 50 17 HIX	Trujillo, D. R.	1 0	Broadcast
6.375 47 10 HRW-				5.969 50 26 HVJ	Vatican City	10 0	Broadcast
6.365 47 14 YV1RH	La Ceiba, Honduras	0 1	Phone	5.855 50 38 HJN	Bogota, Colombia	.....	Broadcast
6.360 47 17 TIFA	Maracalbo, Venezuela	.....	Bc.: relays YV1RF	5.995 50 04 RPT	Tashkent, U. S. S. R.	.....	Phone
6.350 47 24 VNH6	Boom, Nicaragua	0 1	Phone	5.990 50 08 HJ2ABD	Bucaramanga, Colombia	0 1	Broadcast
6.350 47 24 YNJ5	Waspoak, Nicaragua	0 1	Phone	5.990 50 08 HP5K	Colon, Panama	.....	Broadcast
6.350 47 24 YNJ7	Wapam, Nicaragua	0 1	Phone	5.940 50 50 TG2X	Guatemala City, Guatemala	0 2	Police; bc.
6.357 47 20 HRP1	San Pedro Sula, Honduras	0 075	Broadcast	5.925 50 64 HH28	Port-au-Prince, Haiti	0 1	Bc.: relays HH2T
6.340 47 32 YNE	Puerto Cabezas, Nicaragua	0 1	Phone	5.917 50 71 YV15RV	Valencia, Venezuela	.....	Broadcast
6.340 47 32 HIX	Trujillo, D. R.	0 1	Broadcast	5.899 50 84 YV3RA	Maracay, Venezuela	0 3	Broadcast
6.330 47 39 JZG	Nazaki, Japan	10 0	Phone to ships	5.882 51 00 ZEA	Barquisimeto, Venezuela	0 25	Broadcast
6.310 47 54 HIZ	Trujillo, D. R.	0 02	Broadcast	5.880 51 02 IUA	Salisbury, So. Rhodesia	0 325	Broadcast
6.300 47 62 YV4RD	Maracay, Venezuela	0 1	Broadcast	5.880 51 02 IUA	Addis Ababa, Ethiopia	.....	Phone
6.280 47 77 HIG	Trujillo, D. R.	0 05	Broadcast	5.875 51 06 HRN	Tegucigalpa, Honduras	0 4	Broadcast
6.280 47 77 COHB	Sancti Spiritus, Cuba	0 15	Broadcast	5.865 51 15 HI18	San Pedro de Macoris, D. R.	0 04	Broadcast
6.270 47 84 YV5RP	Caracas, Venezuela	.....	Broadcast	5.850 51 28 YV1RB	Maracay, Venezuela	.....	Broadcast
6.260 47 92 OAX4G	Lima, Peru	.....	Broadcast	5.845 51 32 KRO	Kahuku, Hawaii	40 0	Phone
6.250 48 00 YV5RJ	Caracas, Venezuela	.....	Broadcast	5.830 51 46 TDD	Shinkio, Manchukuo	.....	Phone to Tokyo
6.243 48 05 H1N	Trujillo, D. R.	0 75	Broadcast	5.830 51 46 CWD	Montevideo, Uruguay	.....	(Cerrito)
6.235 48 11 HRD	La Ceiba, Honduras	0 25	Broadcast	5.830 51 46 TIGPH	San Jose, Costa Rica	1 5	Phone
6.225 48 19 YV1RG	Valera, Venezuela	.....	Broadcast	5.830 51 46 TIX2	San Jose, Costa Rica	0 5	Broadcast
6.205 48 35 YV1RI	Coro, Venezuela	0 2	Broadcast	5.800 51 72 YV5RC	Caracas, Venezuela	1 0	Broadcast
6.200 48 39 XEXS	Mexico, D. F., Mexico	0 1	Broadcast	5.800 51 72 KZGF	Manila, P. I.	.....	Phone: occ. bc.
6.200 48 39 COKG	Santiago, Cuba	2 4	Bc.: relays CMKB	5.790 51 81 JVU	Nazaki, Japan	10 0	Phone to Manchukuo; also bc.
6.198 48 08 HI8Q	Ciudad, Trujillo	0 025	Broadcast	5.780 51 90 OAX4D	Lima, Peru	20 0	Broadcast
6.190 48 47 HI1A	Santiago de los Caballeros, D. R.	0 05	Broadcast	5.780 51 90 HJ4ABD	Medellin, Colombia	.....	Broadcast
6.184 48 67 OAX1B	Chilcaya, Peru	0 3	Bc.: relays OAKIA	5.758 52 10 YNOP	Managua, Nicaragua	.....	Broadcast
6.150 48 70 CJRO	Winnipeg, Man., Canada	.....	Bc.: relays CJRC	5.735 52 31 HC1PM	Quito, Ecuador	0 3	Broadcast
6.150 48 78 FT4AJ	Tunis, Tunisia	.....	Experimental	5.730 52 36 JVV	Nazaki, Japan	10 0	Phone to Formosa; bc.
6.156 48 73 YV5RD	Caracas, Venezuela	1 0	Broadcast	5.713 52 51 WOO	Guatemala City, Guatemala	0 2	Broadcast
6.150 48 78 CB615	Santiago, Chile	0 15	Broadcast	5.710 52 54 YV2RA	San Carlos, Venezuela	0 75	Broadcast
6.150 48 78 HI5N	Santiago de los Caballeros, D. R.	0 1	Broadcast	5.705 52 59 CFU	Rossland, B. C., Canada	.....	Phone: bc.
6.150 48 78 HJ4ABU	Perella, Colombia	0 1	Broadcast	5.670 52 91 DAF	Norddeich, Germany	.....	Phone
6.150 48 78 VE9CL	Winnipeg, Man., Canada	.....	Broadcast	5.555 54 00 YNE	Puerto Cabezas, Nicaragua	0 1	Phone
6.148 48 80 ZEB	Bulawayo, So. Rhodesia	0 325	Broadcast	5.500 54 55 T1SHH	San Ramon, Costa Rica	0 2	Broadcast
6.140 48 86 W3XK	Pittsburgh, Pa.	40 0	Bc.: relays KDKA	5.490 54 64 HJ1CB	Sverdlovsk, U. S. S. R.	15 0	Phone
6.137 48 88 CR7AA	Lourenco Marques, Mozambique	0 33	Broadcast	5.435 54 19 SH	Monte Grande, Argentina	.....	Phone
6.133 48 91 XEXA	Mexico, D. F., Mexico	.....	Broadcast	5.415 55 40 PMY	Bandoeng, Java, D. E. I.	0 45	Phone: bc.
6.132 48 92 CT1GO	Paredo, Portugal	0 35	Broadcast	5.170 58 03 HRW-	La Ceiba, Honduras	0 1	Phone
6.130 48 94 COCD	Havana, Cuba	0 2	Bc.: relays CMCD	5.140 58 37 PMY	Bandoeng, Java, D. E. I.	0 6	Broadcast
6.130 48 94 LKJ1	Jeloy, Norway	1 0	Broadcast	5.110 58 71 K1KB	Quito, Ecuador	0 5	Phone
6.130 48 95 YV1BG	Georgetown, British Guiana	0 15	Broadcast	5.105 58 76 KEC	Bollina, Calif.	40 0	Phone
6.128 48 96 OAX7A	Cuzco, Peru	.....	Broadcast	5.025 59 70 ZFA	Hamilton, Bermuda	1 5	Phone
6.125 48 98 CXA4	Montevideo, Uruguay	1 0	Broadcast	5.000 60 00 WWV	Beltsville, Md.	1 0	Frequency Standard; Tue., Wed., Fri.: noon, 1 p.m.
6.122 49 01 HJ3ABX	Bogota, Colombia	.....	Broadcast	5.000 60 00 ZUD	Pretoria, S. Africa	.....	Experimental
6.122 49 01 OAX4P	Huancayo, Peru	.....	Broadcast	4.975 60 30 GBC	Rugby, England	5 0	Phone to ships
6.122 49 01 OAX6A	Arequipa, Peru	.....	Broadcast	4.820 62 24 GDW	Rugby, England	15 0	Phone to U. S.
6.120 49 02 YDAS	Bandoeng, Java, D. E. I.	1 5	Broadcast	4.795 62 56 VE9BK	Vancouver, B. C.	0 25	Broadcast
6.120 49 02 XEPW	Mexico, D. F., Mexico	.....	Broadcast	4.753 63 11 WOY	Lawrenceville, N. J.	20 0	Phone
6.120 49 02 XEFT	Vera Cruz, Ver., Mexico	0 12	Broadcast	4.753 63 11 WOO	Ocean Gate, N. J.	20 0	Phone
6.120 49 02 HP5Z	Panama City, Panama	0 2	Broadcast	4.610 65 08 YNJ7	Wapam, Nicaragua	0 1	Phone
6.120 49 02 W2XE	Wayne, N. J.	10 0	Bc.: relays WABC	4.610 65 08 YNJ5	Waspoak, Nicaragua	0 1	Phone
6.117 49 04 XE1Z	Mexico, D. F.	.....	Broadcast	4.610 65 08 YNE	Puerto Cabezas, Nicaragua	0 1	Phone
6.115 49 02 XECU	Guadalajara, Mexico	.....	Broadcast	4.610 65 08 YNH6	Boom, Nicaragua	0 1	Phone
6.115 49 06 HJ1ABJ	Barranquilla, Colombia	1 0	Broadcast	4.605 65 16 HRW-	La Ceiba, Honduras	0 1	Phone
6.115 49 06 OLR2C	Podebrady, Czechoslovakia	25 0	Broadcast	4.605 65 16 HRW-	Guayaquil, Ecuador	0 4	Broadcast
6.110 49 10 GSL	Daventry, England	20 0	Broadcast	4.605 65 19 CFA2	Drummondville, P. Q., Canada	15 0	Phone
6.110 49 10 VE9HX	Hallifax, N. S., Canada	0 2	Bc.: relays CHNS	4.355 68 89 IAC	Coltano, Italy	56 0	Phone
6.109 49 10 HUC	Calcutta, India	0 5	Broadcast	4.273 70 21 RV15	Khabarovsk, U. S. S. R.	20 0	Broadcast
6.108 49 11 HJ4ABB	Manizales, Colombia	.....	Broadcast	4.107 73 05 HCJB	Quito, Ecuador	0 5	Broadcast
6.100 49 18 W3XAL	Bound Brook, N. J.	20 0	Bc.: relays WJZ	4.100 73 17 KJ11	Jeloy, Norway	0 0	Experimental
6.100 49 18 W9XF	Chicago, Illinois	5 0	Bc.: relays WENR	4.097 73 23 WND	Hialeah, Fla.	0 4	Phone
6.100 49 20 YTC	Belgrade, Yugoslavia	2 5	Broadcast	4.002 74 77 CT2AJ	San Miguel, Azores	0 5	Amateur; bc.
6.098 49 20 ZTJ	Johannesburg, S. Africa	5 0	Broadcast	4.000 75 00 CT3AQ	Funchal, Madra	.....	Broadcast: exp.
6.097 49 20 HJ4ABE	Medellin, Colombia	0 1	Broadcast	3.175 94 48 YNJ7	Wapam, Nicaragua	0 1	Phone
6.090 49 26 W2W	Hongkong, China	.....	Broadcast	3.175 94 48 YNJ5	Waspoak, Nicaragua	0 1	Phone
6.090 49 26 HJ4ABC	Ibague, Colombia	.....	Broadcast	3.175 94 48 YNH6	Boom, Nicaragua	0 1	Phone
6.090 49 26 CRXC	Toronto, Ont., Canada	0 5	Broadcast	3.170 94 48 YNE	Puerto Cabezas, Nicaragua	0 1	Phone
6.085 49 30 HJ5ABD				3.800 78 95 ZP11	Aunclon, Paraguay	.....	Broadcast
6.083 49 32 VQ7LO	Nairobi, Kenya, Africa	1 25	Broadcast	3.770 79 56 HB9B	Basle, Switzerland	.....	Broadcast
6.080 49 34 ZHI	Penang, Straits Settlements	0 05	Broadcast	3.525 85 11 HB9AQ	Lausanne, Switzerland	.....	Broadcast
6.080 49 34 CP5	La Paz, Bolivia	.....	Broadcast	3.376 88 83 HJ43	Barranquilla, Colombia	.....	Phone
6.080 49 34 W9XAA	Chicago, Illinois	20 0	Bc.: relays WCFL	3.330 92 88 YDV2	Bandjermasin, Borneo, D. E. I.	20 0	Broadcast
6.079 49 35 DJM	Zeesen, Germany	5 50	Experimental	3.040 98 68 YDA	Tandjongpriok, Java, D. E. I.	10 0	Broadcast
6.075 49 38 YV1F	Colon, Panama	0 2	Broadcast				
6.075 49 38 HP5F	Maracalbo, Venezuela	.....	Broadcast				
6.073 49 37 QCN	Mano, P.	0 5	Broadcast				
6.070 49 42 VE9CS	Vancouver, B. C., Canada	0 01	Broadcast				
6.070 49 42 CFRX	Toronto, Ontario	1 0	Broadcast				
6.070 49 42 HJ3ABF	Bogota, Colombia	0 1	Broadcast				



## *It Pays to go RCA All The Way*

All over the world, wherever broadcast messages are sent or received, you will find tangible evidence of RCA's vast experience in the field of radio. In towering Radio City, home of the National Broadcasting Company, you will find it busily transmitting the programs of two major networks. In the offices of the RCA Communication Service, you will find it in constant touch with 47 foreign nations and hundreds of ships at sea. In foreign countries, you will see its transmitters, microphones and other apparatus in countless broadcasting studios.

Thus, at home and abroad, RCA is the recognized clearing house of radio service and engineering skill—the one organization ideally suited to build receiving sets that tune in on the very sound it creates and transmits. That is why, when you buy your next radio, it will pay you to make it an instrument backed by the company that makes and deals with everything in radio—an instrument that gives you the extra value of RCA ALL THE WAY.