World Broadcasting Progress

By A. R. BURROWS

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I HAVE been asked by Mr. Pierre Key to give my impressions of world conditions in the field of broadcasting at the end of 1932.

In responding with pleasure to this request I ask that two points may be clearly understood. The impressions that I give must be regarded as strictly personal ones. Also they deal with the world *outside* the United States of America. It is preferable that a statement on American conditions should be left to one who is unquestionably more competent to deal with them.

I say, without hesitation, that 1932 has witnessed in the principal countries outside the United States a far greater development in the extent and the technique of wireless broadcasting than any other similar period since its birth. This progress has been beyond all expectations. It has been anticipated that the economic and general depression, which at the end of 1931 was already intense throughout the world, would have been instantly reflected in the support given to the broadcasters. No such thing has happened. With two or three exceptions the broadcasting stations have audiences greater in numbers today than they had one year ago.

In most of the countries outside the United States of America, the broadcasting stations and their programs are maintained directly by the listeners. These pay a tax—usually to the Departments of Posts and Telegraphs—for the right to possess a receiving apparatus. In some countries this tax is paid annually over the counter of the Post Office; in others it is collected at regular intervals. In Germany, for instance, the collection is made monthly—by the postman on his rounds. The result is that the Postal Departments, which hand over all, or more usually an officially determined percentage, of these license fees to the broadcasters, have a definite statistical record of the popularity of the broadcasting services.

What do these records show? I am writing in the middle of November so it is not possible to quote figures for the end of the year. The figures are the latest ones available.

I give them in the order of magnitude. They represent, except where otherwise stated, *homes equipped with receivers.*

	1932		1932		Increase or decrease
Great Britain	(Jan. 1)	4,330,735	(Nov. 1) over	5,000,000	over 669,265 increase
Germany	"	3,980,842	(Oct. 1)	4,077,347	+ 96,505
Japan	"	958,761	(Oct. 1)	1,270,510	+311,749
Canada	"	598,934	Increase certain. Figures not yet available.		+ ———
Sweden	"	549,810	(Nov. 1)	593,908	+ 44,098
Holland	"	523,662	(Oct. 1)	554,778	+ 31,116
Denmark	"	475,600	(Oct. 1)	487,064	+ 11,464
Austria	"	468,577	(Oct. 1)	483,470	+ 14,893
Czechoslovakia	"	384,513	(Sept. 1)	430,323	+ 45,810
Australia	"	337,658	(July 1)	362,945	+ 25,287
Hungary	"	325,032	(Aug. 1)	327,614	+ 2,582
Belgium	"	200,534	(Sept. 1)	285,701	+ 85,167
Italy	"	233,254	(Sept. 1)	272,288	+ 39,034
Poland	"	310,214	(Sept. 1)	271,488	— 38,726

Switzerland	"	150,021	(Nov. 1)	208,234	+ 58,213
Finland	"	116,850	(July 1)	117,196	+ 346
Norway	"	101,901	(Oct. 1)	110,176	+ 8,275
New Zealand	"	71,686	(Apr. 1)	81,656	+ 10,970

These countries have each more than 75,000 licensed listeners; but the same story can be told for the several other countries of small population having less than 75,000 licensed listeners.

For such countries as France, Spain, the Argentine, Brazil and Russia, where there exists no licensing system, it is impossible to give exact figures but there is no reason for believing that their record is any less brilliant proportionately than the average for those for which definite data exist. An official Russian *estimate* recently placed the number of listeners at not less than twelve millions.

To what can be attributed this growth at a time when most other activities appear to be in a slough of despond? It is partly due to the "snow-ball" effect whereby the interest multiplies year by year. It is equally due to the increase in the power of the transmitting stations and an ever-growing respect for the programs.

BROADCASTING is passing from the phase of small and medium power stations into one of highpower stations (highpower, that is, in relation to the first conceptions of an effective broadcasting transmitter). The broadcasters are alive to their responsibilities as directors of a public service of high importance. They now realize, after some years of experience, that a high quality service free from interruption cannot be given *to the masses of limited means* at any real distance from the transmitter without the employment of power. The standard of living to which American citizens are accustomed is reached but in a few countries. The margin between wages and the expenditure on the necessities of life is smaller. Listeners therefore who cannot afford expensive receivers can only be recruited by the process of increasing the power of transmitters.

The station of from five to fifteen kilowatts which, five years ago, was amongst the "big fellows" in the broadcasting world has been relegated today to local service.

How marked is this movement towards high power may be gauged by the fact that whereas in Europe and Russia, West of the Ural mountains, there were no stations of 50 kilowatts aerial power in 1929 and only seven at that time of greater power than 15 kilowatts, there are today 26 stations of over 50 kilowatts aerial power (including eight of 100 kilowatts and over) and four more of 80 kilowatts and over due to "take to the air" before the end of the year. If present plans are worked out to schedule, 1933 will see in Europe and Russia west of the Urals about 45 stations *of 50 kilowatts and over,* and nearly twenty *of 100 kilowatts and over.* Amongst these stations will be found two or three of a series of ten high power stations to be constructed by the French Government.

This necessity for power in the aerial, where mass service is sought, is also being realized elsewhere. The latest Chinese broadcasting station (opened at Nanking in September) has an aerial power of 90 kilowatts; the new Canadian broadcasting scheme foresees the construction of five 50 kilowatt stations; Mexico which already possesses a station of 75 kilowatts has completed plans for one of 500 kilowatts. A station of 50 kilowatts installed at Manila, in the Philippines, is also reported to be giving good service.

This remarkable growth in the power of stations is, I repeat, undoubtedly one of the principal factors in the triumph of broadcasting over the present economic depression. The growth, however, has brought with it a fresh batch of problems, some of which will be discussed later.

THE other factor contributing to recent progress lies undoubtedly to the credit of the program side of broadcasting. The broadcasters outside the United States, like those within the States, are no longer content with building programs of a "straight" concert order; in other words, with repeating through the microphone the form of entertainment which one has been accustomed to in concert halls for the last half century. They now realize that broadcasting is a medium with limitations and possibilities quite peculiar to itself and that special techniques have to be developed. Broadcasting has well emerged from that stage which had a counterpart in cinema history, in the period of cowboys and transcontinental expresses.

The growth in the number of subscribers to the extra-American broadcasting services has resulted in increased funds at the disposal of the program makers. In most European countries today these now permit of the employment of the best artists and the most famous musical combinations—whether they be symphony orchestras or dance bands. These greater resources permit also of systematic research in the special fields of radio drama and educational radio and, above all, in the highly important problem of how the listener can be given a more positive part in the field of broadcasting.

Taking this latter problem first, I think it can be rightly said that it was the German-speaking countries of Europe which first realized the importance of giving systematically to the listener a consciousness that his part was not necessarily that of blind passivity. In Germany all sorts of privileges were granted to listeners possessing wireless licenses, including a reduction in the prices of tickets at various theatres and other places of entertainment. The latest of these privileges relates particularly to the unemployed. The annual license fee is 24 marks paid in monthly installments of two marks. Today, if a licensed listener of six months' standing becomes unemployed, he is excused his license fee until further notice. Some 481,-627 unemployed and blind listeners were enjoying this privilege at the end of September, 1932.

In Austria there has long been collaboration between the Austrian broadcasting organization "Ravag" and certain great public institutions such as Vienna Museums and Art Galleries. Four or five years ago, a Vienna Museum, rich in treasures, was prevailed upon to set apart a hall into which was specially moved, at frequent intervals, the exhibits in the possession of the Museum having relation to the subjects dealt with in the broadcast talks. These exhibits were mentioned by the broadcasters and listeners visiting the Museum, as the result of the talks, were asked by the Museum authorities to give their name, age and profession. By this procedure some very useful data were obtained for the Austrian program staff. Another feature of Austrian broadcasting, giving the listener a positive part, has been a highly successful series of broadcasts to children instructing them in the making of toys. Remarkable combinations of imaginative power, artistic sense and manual dexterity have been discovered amongst the young Austrians following these courses.

THE listener is being given an increasing opportunity for collaboration in the preparation and presentation of programs, and in the solution of other broadcasting problems. Whereas in the first days this collaboration was very indirect and mainly took the form of expressing by post certain personal preferences or distastes, it is now being cultivated by an ever-growing series of competitions. Germany has invited her listeners to put up practical suggestions for a successful campaign against the various interferences of electrical origin. She asks not only for technical solutions but legal ones also. Her great central broadcasting organization—the Reichs Rundfunk Gesellschaft—has started also a competition for the purification of the German language. It is felt that the time has come not only to check the influx of words of obviously foreign origin but to find true German substitutes for many which have already gained common use but, nevertheless, are anything but German. Whilst the listeners are hard at work on the construction of German substitutes for many recent verbal immigrants, the announcers are also exercising care in the choice of words and phrases.

Great Britain has confined her competitions recently to the Children's Hour. She had a singular success when testing "Young England" on its knowledge of "Alice in Wonderland." The guessing of tune names has also a considerable support. Denmark has been conducting a competition during the year for specially written radio-plays. The jury has, as a result, had the task of wading through over nineteen hundred entries. Russia has also been running for some months a competition for the creation of musical programs suitable for the celebration in October of the fifteenth anniversary of the Revolution. These programs were to meet "the proletariat" needs—at lunch time, at the end of a working day, in typical Russian villages and amongst groups of intelligentsia.

Czechoslovakia, which has been holding a second competition for radio plays in the Slovene language (a competition having obviously but a limited appeal) has also been testing the musical knowledge of her listeners through competitions held by her official journal in the identification of musical pieces and their authors. Italy has been seeking new musical compositions which were to be written for orchestras composed only of those instruments known to be especially suitable for broadcasting purposes and has also invited her listeners to compete in criticizing her radio-plays, whilst Rumania has devised a whole series of competitions which have the double object of increasing the interest of the intelligent listener in broadcasting questions and of improving the program content. School masters, for instance, are being invited to present, in competition, their viewpoints on the best way of broadcasting information to peasants; professors are to compete in giving views on the presentation before the microphone of scientific and literary subjects. Listeners as a whole will be given a chance to provide children's stories, tragic or comic, which by their special form, are certain to obtain an instant effect upon the child's mind. Competitions are to be held in the association of special broadcast sounds with places and countryside happenings.

IT had been my intention to leave the question of educational broadcasting until later. I feel, however, that it is impossible to pass away from the movement for giving the listener a more positive place in radio, without referring to one feature of the educational broadcasting which is making distinct progress, not-

ably in the Northern countries of Europe. This is the "listening group" movement. "Listening groups" are groups of people who come together voluntarily in village institutes, public libraries or such-like public meeting places (which have been equipped with a suitable receiving appartus) to listen to a series of informative and educative talks, *and to debate upon points raised by the broadcasters.* An essential for success in such groups is a competent "leader." These are now trained by the broadcasters at summer schools held in University cities.

Another feature of European broadcasting in particular is the growing interest in radio-plays. It has long been realized that there are but few stage plays suitable for broadcasting. Consequently the broadcasters are encouraging the adaptation of existing literary works to the special needs of the studio, and more particularly the writing of plays of a definitely "radiogenic" character. Libraries are being built up of radio-plays (the British Broadcasting Corporation has, for instance, no less than 4,500 such plays in the Library of its production department) and the International Broadcasting Union at Geneva is acting as a "clearing house" of information regarding successful new plays and adaptations.

The technique for the production of these plays pursues still two distinct courses. One school holds to the use of a single studio; the other, (of which the British broadcasters are, at the moment, the chief exponents) employs a number of separate studios, which permits each group of characters or sound effects to work without distraction and enables the "producer" to mix the ingredients—"according to his artistic tastes" by means of an ingeniously contrived "control panel." As many as nine distinct studios have been in use simultaneously for recent productions.

NOW for a few words upon the development of educational broadcasting. Educational broadcasting, for the sake of the present review, can be divided into three distinct classes: broadcasting to schools during school hours; vocational broadcasting; educational broadcasting for adults.

The broadcasting to schools commenced in Europe in 1924. It was my privilege to conduct in London under the guidance of an Advisory Council, and under close observation by a representative group of educationalists, the first experiments in this field. These experiments were sufficiently convincing to lead to the creation of a special department in the British broadcasting system, under the direction of one of the highest educational officers of the State who was seconded to the B.B.C. for the purpose. The programs today are prepared in close consultation with the school authorities and all interested parties combined in an Advisory Council. The subjects selected are directly related to the school curricula and the timetable is prepared many months in advance. About 5,000 British schools are equipped to receive these broadcasts (for which the highest authorities are employed) and in order to insure that the reception takes place under the most favorable conditions, the British Broadcasting Corporation has in constant circulation throughout the country a corps of engineers who examine the receiving installations and make recommendations for their renovation or improvement, should they be necessary. Advice is also given as to the design of receivers especially suitable for school-broadcasting but it is left to the local educational authorities to choose the manufacturers of the apparatus.

Constant research on a scientific basis is taking place with the object of finding the subjects in which radio can give the greatest aid to the teaching profession and also in new methods of presentation.

Germany, which commenced a little later, has already well surpassed Great Britain in the number of schools equipped to receive educational broadcasts. The last number brought to my notice was 20,000. Denmark, Sweden, Czechoslovakia, Austria and Switzerland have also taken up school broadcasting with gratifying results. In Austria, where the first regular effort was made as recently as January last, 1,000 schools had been equipped by the middle of June. Roumania has recently entered the field of broadcasting to schools, and now Italy. This last country, which sees a particular value in educational broadcasting as a means of intensifying an interest in agriculture, is overcoming the financial side of the problem (which is the outcome of the economic crisis) by installing a limited number of receivers in favorably-placed schools and encouraging these schools to purchase them through voluntary efforts on the part of the scholars. The money thus received from this voluntary effort is employed to purchase a fresh series of receivers which are placed in schools further afield. In France, where school broadcasting is in an experimental stage, the broadcasts are confined for the moment to Saturday afternoon, which is a school time relatively free from fixed commitments.

Vocational broadcasting is also gaining ground, particularly in countries which have large areas with a widely-dispersed population. The most interesting example of vocational broadcasting is perhaps that provided in the Canton of Vaud, in Switzerland, *where the courses are compulsory* for young apprentices living outside the cities. Examinations are held at the end of the courses and gratifying results are said to be obtained. A variety of subjects are treated, but agriculture, as might be expected, receives first place.

The systematic radiation of adult education which has also developed considerably during 1932 is not practised in all countries, although there is hardly a broadcasting system today which does not strive to include in its programs a percentage of talks by picked authorities on informative questions. The Japanese Broadcasting Corporation sets apart one of the two high power transmitters in each of its three principal centres of population to programs almost exclusively educational in character. At the moment, as might be expected, financial and economic problems are everywhere receiving special attention. Generally, straight-forward talks are given but there is a growing tendency to "present" the subjects in the form of debates within the studio. This latter technique is stimulating to the "group listening," to which I have already referred.

(I have failed to mention that one of the latest developments in school broadcasting, also, is that of commencing a debate in the studio and of *leaving the school children in their classes to continue the debate* under the direction of their master or mistress. In this way, broadcasting is being directly applied to the development of outlook and personality.)

BEFORE leaving the principal factors which appear to be contributing to the ever-increasing interest in broadcasting, I must certainly mention the growing practice of exchanging programs internationally. It is quite a common thing now for the European stations to relay the best symphony concerts and other outstanding musical features of neighboring, or even distant, countries. Language difficulties prevent any big extension of these relays outside the field of music.

These relays are not confined to the European states. The initiative of the National Broadcasting Company and the Columbia Broadcasting System has led to a frequent exchange of programs between the United States of America and the European organizations, but for the moment the preponderance of such relays is in the westerly direction. I see that Mr. Alfred Morton, the Western European Director of the National Broadcasting Company, estimates that no less than 147 relays were made between Europe and North America during 1931. At the moment of writing, relays are being instituted between Geneva and Japan whereby Japanese observers are keeping Japanese listeners *au fait* with the development of the Manchurian dispute now before the League of Nations.

Talking of the League reminds me of the fact that one of the most interesting developments of the past year, and perhaps of the history of broadcasting to date, has been the inauguration of the League of Nation's own broadcasting station. This station, which is situated about twenty miles Northeast of Geneva, not far from the Lake of Geneva, has two short-wave transmitters, each of 20 kilowatts aerial power and an elaborate and ingenious system of directive aerial enabling these transmitters to concentrate their energy either on North America, Central America, South America, Japan, Malaya or Australia. The station has seven short waves at its disposal (15.83 m., 16.25 m., 20.64 m., 20.74 m., 31.3 m., 38.74 m., and 40.3 m.) and each Sunday evening, at 10 o'clock G.M.T., a world broadcast is made, in which some eminent authority explains an international activity or international problem of current interest. The two wave lengths in use for these transmissions at the time of writing are 31.3 m. and 38.47 m. and reports are being received from many distant quarters of the world testifying to the clearness of the reception of these transmissions. The stations were not built exclusively for broadcasting purposes; they are intended as part of the League service to its Member States, more particularly as a means of distant communication with these States in times of crisis.

The League's interest in broadcasting is not only that of a practical broadcaster; its Member States have unanimously decided that it is a duty of the League to make an official study of a number of international problems. A commencement is being made with the delicate, but admittedly important, question of the manner in which one can assure that the broadcasting stations of the world shall not be used for the radiation of material likely to create ill-feeling between nations. A "gentlemen's agreement" already exists amongst European broadcasters against what is known in French as "propaganda inadmissible," but it is felt in some quarters that as the broadcasters themselves have not always the opportunity of examining the material to be broadcast—notably in the case of relays made from points outside the studios —an additional form of control should be instituted. The great problem, of course, is how such a control can be exercised without incurring a risk that undue restriction shall be placed upon the broadcasting medium as a diffuser of current thought and of the truth.

THERE has been, during 1932, an increasing tendency, on the part of the European broadcasters, to experiment in the field of television, but it cannot be pretended that the experimental stage has yet been passed, although some progress has admittedly been made. A limited number of stations will continue

the radiation of pictures, but there is little evidence of any widespread growth of interest in this activity on the part of the general listener. On the other hand, there has been a continued growth throughout the year in Europe of the practice of *distributing radio programs by telephone circuits,* either through the State telephone services, or through the agency of private organizations who intercept the programs at an electrically quiet spot and distribute them over telephone networks which they have obtained permission to operate. The "radio-centrales," as they are termed, are naturally most popular in cities where electrical disturbances are common. They suffer, for the moment, from the disadvantage that subscribers are only able to obtain one program, usually that from the local station. About one-quarter of a million of the Dutch listeners now receive their program through such "centrales."

The question of electrical interference with reception is now receiving considerable attention throughout Europe. In Germany, there is an organization which last year rectified 125,000 cases of interferences and has already dealt with 53,000 more in the first half of 1932. In most European countries similar action, though perhaps on not so extensive a scale, is being taken through radio clubs and with the support of local laws.

There remains, however, another source of interference which is causing increasing trouble for the European listeners, this being the mutual interference between high-power transmitting stations. The European situation is complicated by the fact that it is impossible to distribute evenly the high-power stations throughout the area. The European states vary considerably in size and shape and contour. They employ different languages, and sometimes more than one. A notable case is that of Switzerland, one of the smallest states, which has three official languages. These three must be used if every native listener is to be given the benefit of broadcasting. Such factors, coupled with the relatively narrow wave-band available for broadcasting purposes, have made it extremely difficult to secure an adequate separation between the new high-power stations, and in some instances it is very difficult, without an expensive receiver, to separate absolutely two adjacent programs.

The International Broadcasting Union which has worked hard and systematically at this problem for a long time, has been invited to draft a new European wave-plan for submission to a Conference of European Official Administrations, to be held in the early summer of 1933.

PASSING, in closing, from purely European to general world-broadcasting conditions, there has been, in 1932, a continued tendency to bring broadcasting more closely under official control. The decision of the Canadian Government to create a national radio system, rather than continue with the recently existing one of private enterprise, has had a counterpart in New Zealand, and in Australia—so far as the more powerful Australian stations are concerned. Plans are also before the Norwegian Parliament with the same object in view and it seems likely that one or two other outstanding European countries will follow. In South Africa a special small Commission has been appointed by the State to act as an advisory link between the State and the broadcasters.

It is not my intention to express opinion upon the relative merits of State control or privately directed broadcasting activity. The fact that both exist suggests that each has its merits.

The International Broadcasting Union, in a booklet entitled "The Importance of Broadcasting," published during the past summer, has shown that at the beginning of 1932, the broadcasters of the world had a potential audience of about 138 millions of people; that as far back as 1930 they devoted not less than 50,000 broadcasting days to "direct public service"; that the sum invested in broadcasting stations was then between $75,000,000 and $80,000,000; that the annual payment for talent in 1930 and 1931 was approximately $28,164,323; that a total of $138,000,000 is being spent annually in actual broadcasting, and that an additional consumption of electricity of 1,573,200,000 kilowatt hours, representing not less than $78,000,000 is taking place, solely due to radio.

The United States of America was shown to make the biggest contribution of any country to most of the above-mentioned figures which broadcasting has just received, at the World Radiotelegraphic Conference, at Madrid.

This is not surprising, I am sure, when there is taken into account not only the progress which it has been my privilege to record here, but the other recent remarkable developments finding mention in this Annual.

I have a strong feeling that broadcasting—in 1933—will render even greater public services than are already to its credit, and that it will play a considerable part in restoring human confidence and in lifting the world out of its present state of depression.

Station Location*	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
NORTH AMERICA (*with the exception of the U. S. A.*)					
ALASKA					
Anchorage	KFQD	243.8	250 w.	——	The Anchorage Radio Club, Inc.
Ketchikan	KGBU	333	500 w.	——	Alaska Radio & Service Co., Inc.
CANADA					
Brandon (Man.)	CKX	556	500 w.	——	Manitoba Telephone System.
Bowmanville (Ont.)	CJBC	——	5 kw.	uses station CKGW	Jarvis St. Baptist Church, Toronto
"	CKGW	356.9	5 kw.	——	Gooderham & Worts, Ltd., King Edward Hotel, Toronto.
"	CPRY	356.9	5 kw.	uses station CKGW	Canadian Pacific Railway Co., Toronto.
Calgary (Alta.)	CFAC	435	500 w.	——	Calgary Herald, Ltd., Southam Building.
"	CJCJ	435	500 w.	——	Albertan Publishing Co., Ltd.
Charlottetown (P. E. I.)	CFCY	517	500 w.	——	Island Radio Broadcasting Co., Ltd., 143 Great George St.
"	CHCK	313	100 w.	——	W. E. Burke & J. A. Gesner, 36 Upper Hillsboro St.
Chatham (Ont.)	CFCO	248	250 w.	——	John Beardall, William Pitt Hotel.
Chilliwack (B. C.)	CHWK	451	100 w.	——	Chilliwack Broadcasting Co., Ltd., Wellington Ave.
Cobalt (Ont.)	CKMC	248	100 w.	using 50 w.	R. L. MacAdam.
Edmonton (Alta.)	CHMA	517	250 w.	——	Christian & Missionary Alliance, 146th St. and 99th Ave.
"	CKUA	517	500 w.	——	University of Alberta.
Fleming (Sask.)	CJRW	451	1 kw.	——	James Richardson & Sons, Ltd., Royal Alexandra Hotel, Winnipeg (Man.).

* Station location designations throughout these lists refer to the actual location of the transmitter.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CANADA--*continued*					
Fredericton (N. B.)	CFNB	248	100 w.	——	James S. Neill & Sons, Ltd., Queen St.
Fruitland (Ont.)	CHCS	297	{1 kw. D {500 w. N	uses station CKOC	Hamilton Spectator, Hamilton (Ont.).
"	CKOC	297	{1 kw. D {500 w. N	——	Wentworth Radio Broadcasting Co., Ltd., Hamilton (Ont.).
"	CKTB	297	{1 kw. D {500 w. N	uses station CKOC	Taylor & Bate, Ltd., St. Catharine's (Ont.).
Glace Bay (N. S.)	VAS	438	{4 kw. D {2 kw. N	——	Canadian Marconi Co.
Halifax (N. S.)	CHNS	368	500 w.	——	Maritime Broadcasting Co., Ltd., Lord Nelson Hotel.
"	CNRH	368	500 w.	uses station CHNS	Canadian National Railways.
Kamloops (B. C.)	CFJC	268	100 w.	——	D. S. Dalgleish & Sons, Ltd., Connaught Rd.
Kelowna (B. C.)	CKOV	250	100 w.	using 50 w.	J. W. B. Browne, Bernard Ave. and Pontozi St.
King (Ont.)	CFRB	435	10 kw.	——	Rogers Majestic Corp., Ltd., Toronto.
Kingston (Ont.)	CFRC	323	{250 w. D {50 w. N	——	Queen's University, Fleming Hall.
Lethbridge (Alta.)	CJOC	268	100 w.	——	H. R. Carson, Marquis Hotel.
Lulu Island (B. C.)	CNRV	291	500 w.	——	Canadian National Railways, Vancouver (B. C.)
Moncton (N. B.)	CNRA	476	500 w.	——	"
Montreal (Que.)	CFCF	291	500 w.	——	Canadian Marconi Co., Mount Royal Hotel.
"	CHCH	—	100 w.	——	Montreal Radio Corp., 4 Notre Dame St. W.
"	CHLP	—	100 w.	——	La Patrie Publishing Co., Ltd.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CANADA—*continued*					
Moose Jaw (Sask.) (old city)	CJRM	451	500 w.	——	James Richardson & Sons, Ltd., Moose Jaw.
Mount Hamilton (Ont.)	CHML	341	50 w.	——	Maple Leaf Radio Co., Ltd., 13th St., Hamilton.
North Bay (Ont.)	CFCH	323	100 w.	——	Northern Supplies, Ltd., Capital Theatre, E. North Bay (Ont.).
Oliver (Alta.)	CJCA	403	500 w.	——	Edmonton Journal, Edmonton (Alta.).
Ottawa (Ont.)	CKCO	337	100 w.	——	Dr. G. M. Geldert, 272 Somerset St., W.
"	CNRO	500	500 w.	——	Canadian National Railways, Chateau Laurier.
Pilot Butte (Sask.)	CHWC	313	500 w.	——	R. H. Williams & Sons, Ltd., Kitchener Hotel, Regina (Sask.).
Port Arthur (Ont.)	CKPR	337	100 w.	——	Dougall Motor Car Co., Ltd., Fort William.
Prescott (Ont.)	CFLC	328	100 w.	——	Radio Ass'n. of Prescott, Victoria Hall.
Preston (Ont.)	CKPC	341	100 w.	——	Cyrus Dolph, 268 Guelph St.
Quebec (Que.)	CHRC	465	100 w.	——	CHRC, Ltd., New Victoria Hotel.
"	CKCI	465	100 w.	uses station CHRC	"Le Soleil," Ltd.
"	CKCV	341	50 w.	——	Vandry, Inc., 252 Ave. Marguerite—Bourgeois.
Red Deer (Alta.)	CKLC	357	1 kw.	——	John Ralph Foster, Calgary (Alta.).
Regina (Sask.)	CKCK	313	500 w.	——	Leader-Post, Ltd., 1853 Hamilton St.
Saskatoon (Sask.)	CFQC	330	500 w.	——	Electric Shop, Ltd.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CANADA—*continued*					
Sea Island (B. C.)	CJOR	248	500 w.	——	G. C. Chandlor, 804 Hornby St., Vancouver.
St. Hyacinthe (Que.)	CHYC	411	5 kw.	uses station CKAC	Northern Electric Co., Ltd., Montreal.
"	CKAC	411	5 kw.	——	La Presse Publishing Co., Ltd., Montreal.
St. John (N. B.)	CFBO	337	500 w.	uses 50 w.	C. A. Munro, Ltd., Canterbury St.
Strathburn (Ont.)	CJGC	330	5 kw.	——	London Free Press & Printing Co., Ltd., London (Ont.).
Strathmore (Alta.)	CFCN	305	10 kw.	——	W. W. Grant & H. G. Love, Calgary (Alta.).
Summerside (P. E. I.)	CHGS	268	500 w.	uses 100 w.	R. T. Holam, Ltd., Holman Building.
Sydney (N. S.)	CJCB	341	50 w.	——	N. Nathanson, 318 Charlotte St.
Toronto (Ont.)	CFCA	268	500 w.	——	Star Publishing & Printing Co., Ltd., Corner Yonge St. and St. Clair Ave.
"	CKCL	517	500 w.	The call signal is used during Sunday broadcasts only.	Dominion Battery Co., Ltd., 20 Trinity St.
"	CKNC	312	500 w.	——	Canadian National Carbon Co., Ltd., 805 Davenport Road.
Toronto (see also listings under Bowmanville)					
Vancouver (B. C.)	CHLS	411	100 w.	uses station CKCD	W. G. Hassell.
"	CKCD	411	100 w.	——	Vancouver Daily Province.
"	CKFC	411	50 w.	——	United Church of Canada, 12th Ave. and Hemlock St.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CANADA—*continued*					
Vancouver (B. C.)	CKMO	411	100 w.	——	Sprott-Shaw Radio Co., Room 1604, Bekins Building.
"	CKWX	411	100 w	——	Western Broadcasting Co., Ltd., 1220 Seymour St.
Victoria (B. C.)	CFCT	476	50 w.	——	Victoria Broadcasting Ass'n., 1405 Douglas St.
Waterloo (Ont.)	CKCR	465	100 w.	——	William C. Mitchell and Gilbert Liddle.
Windsor (Ont.)	CKLW	312.5	5 kw.	——	Western Ontario Broadcasting Co., Ltd.
Winnipeg (Man.)	CKY	385	5 kw.	——	Manitoba Telephone System.
Wolfville (N. S.)	CKIC	297	50 w.	——	Acadia University.
Yorkton (Sask.)	CJGX	476	500 w.	——	Winnipeg Grain Exchange, 188 Grain Exchange, Winnipeg (Man.)
NEWFOUNDLAND					
St. John's	VOKW	——	10 w.	——	C. H. Parkins.
"	VOGY	——	100 w.	——	Newfoundland Broadcasting Co., Ltd.
"	VOAS	——	100 w.	——	Ayre & Sons, Ltd.
"	VONF	——	100 w.	——	Dominion Broadcasting Co., Ltd.
"	VOWR	——	500 w.	——	Wesley United Church.
ST. PIERRE AND MIQUELON ISLANDS					
St. Pierre	——	524.6	——	——	Local administration.
COSTA-RICA					
Electra Cartago	TIRA	535.7	——	——	Compania Radiografica Internacional de Costa-Rica.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
COSTA RICA—*continued*					
San José	TICR	329	——	——	Gobierno de Costa-Rica.
"	TIFB	420.16	——	——	Font & Barquero.
"	TIGP	450.45	250 w.	——	Gonzalo Pinto.
"	TISO	500	500 w.	——	Pedro F. Saborio.
"	TITR	225.05	100 w.	——	Margarita M. de Girton.
"	TITV	300.3	——	——	Felipe J. Alvarado.
CUBA					
Arroyo Apolo	CMBR	201.8	40 w.	——	Tomas Basail, Av. 6 ent. F y G.
Caibarien	CMHD	315.6	250 w.	——	Manuel Alvarez, M. Escobar 17.
Camagüey	CMJC	217	150 w.	——	W. F. Isaac, Cisneros y G. Gomez.
"	CMJN	241.8	50 w.	——	E. de Ugarriza, Martires 11.
"	CMJE	255	50 w.	——	M. Fernandez, Hnos. Agüero 2.
"	CMJG	285.5	50 w.	——	J. Antonio Lefran, Martires 133.
"	CMJL	312.3	50 w.	——	Enrique Artime, Cuba 27.
"	CMJF	322.4	200 w.	——	J. L. Stowers.
Cardenas	CMGE	218	30 w.	——	G. Sabater, 14 No. 72.
Ciego de Avila	CMJI	238	5 w.	——	Gilberto Gessa, Independencia 95.
"	CMJO	270.1	15 w.	——	Ray-Borges, G. Machado y Maceo.
"	CMJH	295	30 w.	——	Luis Marauri, Vista Hermosa.
Cerro (Habana)	CMCH	213.4	50 w.	——	Wilfredo Fontanals, Primelles No. 88
Cienfuegos	CMHL	232.6	20 w.	——	Oscar Zayas, San Carlos 156.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CUBA—*continued*					
Cienfuegos	CMHJ	266.5	40 w.	——	Victorino Lopez, S. Isabel y S. Fdo.
Colon	CMGA	360	100 w.	——	L. Valdés Figueroa, Marti 19.
Cruces	CMHK	244.7	15 w.	——	V. Villanueva, Heredia 61.
Guanabacoa	CMBK	201.8	15 w.	——	Alberto Alvarez, Marti No. 25.
Guantanamo	CMKJ	230.6	20 w.	——	Luis Morlote, E. Giro 11.
Habana	CMCM	213.4	15 w.	——	Aurelio Balino, Belascoain 639.
"	CMCW	226.5	——	——	José Lorenzo, Fabrica y Aspuru.
"	CMBY	243.8	350 w.	——	Callejas-Estéfani, Principe 33.
"	CMCA	243.8	150 w.	——	Manuel Cruz, Av. de Italia 102.
"	CMW	253	1.4 kw.	——	Troncoso-Gil, Passo de Marti 103.
"	CMBJ	263	150 w.	——	Consulado y Virtudes.
"	CMBW	263	150 w.	——	Alvarez-Moris, Ayesteran 13.
"	CMBG	280.2	225 w.	——	John L. Stowers, Hospital 100.
"	CMCB	280.2	150 w.	——	Antonio Capablanca, O'Reilly y Aguacate.
"	CMBZ	296.8	150 w.	——	Manuel y G. Salas, San Rafael 14.
"	CMBC	310.7	150 w.	——	Domingo Fernandez, Maximo Gomez 139.
"	CMX	336.9	500 w.	——	F. Lavin, San Lazaro 99.
"	CMCF	336.9	250 w.	——	Raoul Karman, Rayo 67.
"	CMC	356.9	500 w.	——	Cuban Telephone Co., Aguila y Dragones.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CUBA—*continued*					
Habana	CMK	410.8	3.15 kw.	——	Cia. Nac. Radio, Hotel Plaza.
"	CMCJ	510	250 w.	——	R. Rodriguez, Estevez 4.
Habana (See also listings under Cerro, S. Suarez, Vedado and Vibora)					
Marianao	CMCN	236.1	250 w.	——	Address: Reina y Av. Buen Retiro.
"	CCAF	454.3	500 w.	——	J. F. de Castro, 3a Av. esq. a 4.
Matanzas	CMGB	248.8	30 w.	——	José Anorga, Magdalena 1.
"	CMGH	288.3	15 w.	——	O. y J. Alvarez, B. Byrne 113.
"	CMGF	315.6	100 w.	——	B. R. de la Torre, G. Betancourt 105.
"	CMGC	365.6	30 w.	——	Oscar S. Mechoso, Independencia 56.
Moron	CMJP	228.9	7 w.	——	César Canals, Callejas s/n.
Pinar del Rio	CMAB	240	20 w.	——	José Silvera, Marti 101.
Regla	CMDD	510	150 w.	——	G. de Sequeira, Agramonte 32.
Santa Clara	CMHI	291.1	30 w.	——	Laviz y Paz, Maceo y J. Jover.
Santiago de Cuba	CMKC	290	150 w.	——	J. A. Saco alta 23, Pinol Batlle y Co.
S. Suarez (Habana)	CMBD	236.1	150 w.	——	Luis Pérez Garcia, Enamorados y Flores.
Tuinucu	CMHC	379.5	250 w.	——	Frank H. Jones.
Vedado (Habana)	CMBL	207.5	20 w.	——	Julio C. Hidalgo, Zapata 150 ent. 6 y 8.
"	CMDB	213.4	40 w.	——	Julio Powers, Quinta 476.
"	CMCY	219.6	1 kw.	——	Manuel D. Autran, Av. de Los Pdtes. 215.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CUBA—*continued*					
Vedado (Habana)	CMCD	324.2	250 w.	——	Angel Bertematy, Av. de los Pdtes. esq. 25.
"	CMBS	384.4	150 w.	——	E. Artalejo, Calzada y H.
"	CMQ	475.9	250 w.	——	J. Fernandez, 25 numero 445.
Vibora (Habana)	CMBN	207.5	30 w.	——	Armando Roméu, San Francisco 49.
"	CMCR	226.5	150 w.	——	Aurelio Hernandez, Milagros 35.
"	CMCQ	384.4	1 kw.	——	Andrés Martinez, Vista Alegro 80.
"	CMCU	475.9	150 w.	——	J. Garcia Serra, S. Francisco 13.
"	CMBF	219.6	150 w.	In construction.	Ramon Bardales
"	CMCX	296.8	150 w.	"	Diario "El Mundo."
"	CMAY	310.7	150 w.	"	Efigenio Oliver.
"	CMDE	324.2	250 w.	"	Evelio Villar.
DOMINICAN REPUBLIC					
Santo Domingo	HIJK	254	15 kw.	——	——
"	HIX	475	1 kw.	——	Gobierno Dominicano.
GUATEMALA					
Guatemala City	TGW	227	250 w.	——	——
HAITI					
Port au Prince	HHK	326	1 kw.	——	Government owned.
HONDURAS					
San Pedro Sula	JRL	222	7 w.	——	——
Tegucigalpa	HRB	219	2.3 kw.	——	Tropical Radio Telegraph Co.

Station Location	Call Letters	Length Wave (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
MEXICO					
Aguascalientes	XFC	373	350 w.	——	Gobierno Estado Aguascalientes.
Chihuahua	XEFI	300	100 w.	——	Feliciano Lopez Isla.
"	XFF	325	250 w.	——	Cia. Difusora de Chihuahua.
Ciudad Juarez	XEJ	300	100 w.	——	Juan G. Buttner.
"	XEQ	400	5 kw.	——	Feliciano Lopez Isla.
Guadalajara	XEA	300	100 w.	——	Alberto Palos Sauza.
Jalapa	XETC	300	100 w.	——	Juventino Sanchez.
Merida	XEFC	286	10 w.	——	Hugo Molina Font.
"	XEY	300	100 w.	——	Partido Socialista S. E.
Mexico City	XEB	291	1 kw.	——	El Buen Tono S. A., Mexico D. F.
"	XEFA	240	250 w.	——	Manuel F. Murguia, Mexico D. F.
"	XEG	221	100 w.	——	Miguel Yarza, Mexico D. F.
"	XEK	303	100 w.	——	Arturo Martinez, Mexico D. F.
"	XEM	231	250 w.	——	Maria T. de Gutierrez, Mexico D. F.
"	XEN	422	1 kw.	——	Cerveceria Modelo S. A., Mexico D. F.
"	XEO	319	5 kw.	——	Partido Nacional Rev., Mexico D. F.
"	XETA	263	500 w.	——	Manuel Espinosa Tagle, Mexico D. F.
"	XETQ	244	100 w.	——	Carlos G. Caballero, Mexico D. F.
"	XETR	491	1 kw.	——	——
"	XETY	231	2 kw.	——	——
"	XETZ	200	100 w.	——	Manuel Zetina; Coyoacan D. F.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
MEXICO—*continued*					
Mexico City (Hacienda de Coapa)	XEW	329	5 kw.	——	Mexico Music Co. S. A., Mexico D. F.
Mexico City	XEX	248	500 w.	——	"Excelsior," Mexico D. F.
"	XEZ	385	500 w.	——	Joaquin Capilla, Mexico D. F.
"	XFG	470	2 kw.	——	Sría. de Guerra y Marina (Sec'y. of War and Navy), Mexico D. F.
"	XFH	——	250 w.	——	"
"	XFI	367	1 kw.	——	Sría. Ind. Com. y Trabajo, Mexico D. F.
"	XFX	349	500 w.	——	Sria. de Educacion Publica, Mexico D. F.
Monterrey	XEFB	236	50 w.	——	Quintanilla y Stevenson.
"	XEH	265	1 kw	——	Constantino, Tarnava.
"	XET	435	500 w.	——	Mexico Music Co. S. A., Monterrey N. L.
Morelia	XEI	300	100 w.	——	Carlos Gutierrez
Nuevo Laredo	XEFE	300	100 w.	——	Rafael T. Carranza.
"	XEP	214	200 w.	——	Associacion Radiodifusora Latino-Americana S. A.
Oaxaca	XEE	300	100 w.	——	Alfonso Zorrilla.
Puebla	XEV	300	100 w.	——	Ciro Molina.
Queretaro	XEFS	300	40 w.	——	Salvador Sanchez.
Reynosa	XED	311	10 kw.	——	Cia. Intl. Dif. Reynosa, S. A.
Saltillo	XEL	300	10 w.	——	Antonio Garza Castro.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
MEXICO—*continued*					
Tampico	XES	337	500 w.	——	Emilio Ballí.
Tia Juana	XEFD	294	300 w.	——	Carlos de la Sierra.
Toluca	XEC	300	50 w.	——	Jesus R. Benavides.
Torreon	XETB	217	120 w.	——	Jose A. Berumen.
"	XETG	300	100 w.	——	Feliciano Lopez Islas.
Vera Cruz	XETF	476	500 w.	——	Manuel Angel Fernandez.
"	XEU	300	100 w.	——	Fernando Pazos.
Villa Acuna	XER	408	80 kw.	An increase of power to 500 kw. has been authorized.	Cia. Radiodif. de Acuna, S. A.
PORTO RICO					
San Juan	WKAQ	211.3	1 kw.	——	Radio Corporation of Porto Rico.
SALVADOR					
San Salvador	RUS	452	500 w.	——	Government owned.
SOUTH AMERICA					
ARGENTINA					
Azul	LU9	204.1	50 w.	——	Consejo Escolar.
Bahia Blanca	LU2	375	500 w.	——	Radio Parque de Mayo.
"	LU7	234.4	200 w.	——	Radio General San Martin.
Buenos-Aires	LP6	508.5	3.5 kw.	——	Casa América, Rivadavia 958.
"	LS3	476.2	4.5 kw.	——	Radio Mayo, Callao 1526.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
ARGENTINA--*continued*					
Buenos-Aires	LP4	447.8	2 kw.	——	Radio Portena, Estados Unidos 1816.
"	LS1	422.5	5 kw.	——	Broadcasting Municipal, Teatro Colon.
"	LR7	400	1 kw.	——	Radio Buenos Aires, Suipacha 272.
"	LR1	379.7	500 w.	——	Radio Cultura, Alsina 2570.
"	LR5	361.4	1.6 kw.	This power will shortly be increased to 20 kw.	Radio Excelsior, Maipu 462.
"	LR6	344.8	2.1 kw.	——	La Nacion, Estados Unidos 1816.
"	LR2	329.7	6 kw.	——	Radio Prieto, Bolivar 1356.
"	LR3	315.8	7 kw.	——	Radio Nacional, Estados Unidos 1816.
"	LR4	303	15 kw.	——	Radio Splendid, Callao 1526.
"	LR9	291.3	5 kw.	——	Radio Fénix, Santa Fe 1174.
"	LS5	270.3	4.5 kw.	——	Estacion Rivadavia, Callao 1526.
"	LR8	260.9	3.5 kw.	——	Cine Paris, Cangallo 860.
"	LS2	252.1	4.5 kw.	——	Radio Prieto, Bolivar 1356.
"	LS8	243.9	2 kw.	——	Radio Sarmiento, Sarandi 48.
"	LS9	222.2	2 kw.	——	La Voz del Aire, Maipu 459.
"	LS6	236.2	3.5 kw.	——	Radio Bernotti, Estados Unidos 1880.
Cordoba	LV3	483.9	350 w.	——	Radio Buenos Aires.
"	LV2	340.9	500 w.	——	Radio Central.
La Plata	LT2	438	——	——	Universidad La Plata.
Mar del Plata	LU8	217.4	——	——	Radio Atlantica.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
ARGENTINA—*continued*					
Mendoza	LT4	394.7	170 w.	——	Radio Parque General San Martin.
"	LV10	348.8	350 w.	——	Radio Cuyo.
Rosario	LT1	384.6	4.5 kw.	——	——
"	LT8	357.1	350 w.	——	Radio Rosario.
"	LT3	277.8	250 w.	——	Sociedad Rural de Cerealistas.
Salta	LV9	333.3	500 w.	——	Radio Norte.
San Juan	LV1	411	1.5 kw.	——	Graffigna Ltda.
"	LV5	267.9	500 w.	——	Gonzales y Cia.
Santa Fe	LT9	283	100 w.	——	Casa Roca Soler.
"	LT10	215.8	100 w.	——	Instituto Social de la Universidad del Litoral.
Tucuman	LV7	365.9	200 w.	——	Tucuman Broadcasting.
BOLIVIA					
La Paz	CPX	226	1 kw.	——	Cia de Radiodifusion de Bolivia.
BRAZIL					
Amparo	PRAM	230	50 w.	——	Radio Club Amparense, Prefectura Municipal Amparo.
Bahia	PRAH	350	50 w.	——	Radio Soc. da Bahia, Passeio Publico.
Belem	PRAF	220	250 w.	——	Radio Club de Para, Largo de Trinidade 20, Belem, E. do Para.
Bello Horizonte	PRAQ	275	250 w.	——	Radio Exp. Mineira.
Francar (Sao Paulo)	PRAZ	270	50 w.	——	Radio Club Hertz, Paca Pedro II No. 474.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
BRAZIL—*continued*					
Juiz de Fora	PRAJ	350	200 w.	——	Radio Soc. Juiz do Fora, Parque Halfeld.
Pelotas	PRAD	326	50 w.	——	Radio Pelotense, Rua Felix da Cunha 663.
Porto Alegre	PRAG	275	500 w.	——	Radio Soc. Gaucha, Rua dos Andradas 1031 2° andar.
Recife	PRAP	400	250 w.	——	Radio Club do Pernambuco, Rua Luiz do Rego 394.
Ribeirao Preto	PRAI	260	10 w.	——	Radio Club do Ribeirao Preto, Rua Visconde de Inhauma 29.
Rio de Janeiro	PRAA	400	1 kw.	——	Radio Soc. do Rio de Janeiro, Carioca 45.
"	PRAB	320	500 w.	——	Radio Club do Brasil, R. Bethencourt da Silva 21, 3° andar.
"	PRAC	360	500 w.	——	Radio Educadora do Brasil, Rua Senador Dantas 82.
"	PRAK	260	1 kw.	——	Radio Soc. Mayrink Veiga, Rua Mayrink Veiga 17.
"	PRAX	220	1 kw.	——	Soc. Radio Phillips do Brasil, Rua Saccadura Cabral 43.
Santos	PRAS	230	1 kw.	——	Radio Club do Santos, Avenida Conselheiro Nebias 857.
Sao Paulo	PRAE	366	1 kw.	——	Radio Educadora Paulista, Rua José Bonifacio 12.
"	PRAR	295	500 w.	——	Radio Sociedade Record, Praça da Republica 17.
CHILE					
Rancagua	CMAS	242	10 w.	——	Radio Victor, G. Gautier, Sta. Maria 243.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CHILE—*continued*					
Rancagua	CMBA	216	10 w.	——	Radio Rancagua, Jorge Romero, Tropezon 1461.
"	CMBG	207	10 w.	——	Radio Comercial, Gmo. Espinoza, Ceuva 714.
Santiago	CMAA	230	20 w.	——	Providencia, Hernan Medina, Pizzaro 2069.
"	CMAB	480	1 kw.	——	Radio Chilena, International Machinery Co., Edf. Mutual de la Armada.
"	CMAC	360	1 kw.	——	"El Mercurio,"—Morandé.
"	CMAE	348	100 w.	——	Brunswick, H. Bewais, B. Encalada, No. 1725-A.
"	CMAF	418	100 w.	——	Voz del Espacio, Antonio Salgado, Teatro Coliseo.
"	CMAH	259	100 w.	——	Radio Santiago, Federico Patino, Av. Espana 378.
"	CMAI	440	1 kw.	——	"Ultimas Noticias-El Mercurio," Morandé.
"	CMAK	250	100 w.	——	Imperio, C. Hüni, Teatro Imperio.
"	CMAQ	270	100 w.	——	Andes Radio, Hugo y Keitel, Rio Janeiro N° 366 (Nunoa).
"	CMAR	325	100 w.	——	"Diario Ilustrado," Moneda 1158.
"	CMAZ	400	1 kw.	——	Real, Lecaros, Spitz Ltda., Compania, 1034 6° piso.
"	CMBE	295	250 w.	——	Universo, Ernesto y Enrique Sazie, Fontecilla 76.
"	CMBF	230	20 w.	——	Colon, Pascual Hnos, Gran Avenida N° 2564.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CHILE—*continued*					
Santiago	CMBJ	223	20 w.	——	Imperial, Sotomayor y Guerra, José M. Infante N° 2219.
Temuco	CMAM	325	100 w.	——	Hans Frey, A. Prat 550.
Valparaiso	CMAG	382	50 w.	——	Columbia, Ernesto Herrman, San Juan de Dios 634.
"	CMAJ	240	50 w.	——	D. Wallace, Esmeralda 1111.
"	CMAT	260	20 w.	——	Radio-Club, Edwards-Chacabuco.
"	CMBH	345	20 w.	——	"El Mercurio," Casino Vina del Mar.
"	——	287	20 w.	——	Curphey y Joffré Ltda., Blanco 637.
COLOMBIA					
Bogota	HJN	437	——	——	Gobierno de Colombia.
ECUADOR					
Quito	HCJB	——	250 w.	——	——
PARAGUAY					
Asunción	ZP1	264	1 kw.	——	——
"	ZP3	300	280 w.	——	——
"	ZP4	235	150 w.	——	——
"	ZP5	205	150 w.	——	——
PERU					
Lima	OAX	380	1.5 kw.	——	Cia. Nacional de Radiodifusion S.A.
"	OA4M	210	10 w.	——	Amateur owned.
URUGUAY					
Montevideo	CX6	462	1 kw.	——	Ministerio de Instruccion Publica.

Station Location	Call Letters	Length Wave (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
URUGUAY—*continued*					
Montevideo	CX10	411	1 kw.	——	Ministerio de Industrias, Direccion de Agronomia.
"	CX12	390	500 w.	——	Radio Westinghouse, Serratosa y Castells.
"	CX14	370	1 kw.	——	General Electric.
"	CX16	353	——	——	Servicio Oficial de Difusion Radioelectrica.
"	CX18	337	250 w.	——	Difusora Colon, Da Silva, Ravera y Bravo.
"	CX20	323	2 kw.	——	Radio Monte Carlo, Carlos L. Romay.
"	CX22	309	250 w.	——	Fada Radio, Harispuru Hnos.
"	CX24	297	1 kw.	In construction.	Carlos Butler.
"	CX26	286	2.5 kw.	——	Radio Uruguay, Figueira, Canepa y Cia., Av. Millán.
"	CX30	266	250 w.	——	Radio Nacional, Carlos Silva.
"	CX32	256	200 w.	——	Radio Carve, Carlos Ma. Carve.
"	CX34	248	500 w.	——	Radio Uruguay, Figueira, Canepa y Cia., Av. Millán.
"	CX36	240	250 w.	——	Centenario Broadcasting, Tomas y Defilippi.
"	CX38	233	100 w.	——	Colonial Broadcasting, Lopez Gestoso y Cia.
"	CX40	226	100 w.	——	Radio Fenix, Rebassa y Barlocco.
"	CX42	219	500 w.	——	Colonial Broadcasting Co., Carrasco 1916.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
URUGUAY—*continued*					
Montevideo	CX44	213	20 w.	——	Radio Millán, Claudio Ardanaz.
"	CX46	207	100 w.	——	Radio America, Vitale y Bertacchi.
"	CX48	201	50 w.	——	Radio Palermo, Hector Moratorio.
Paysandu	CW40	224	30 w.	——	Radio Sanducera, Buenaventura y Mahlen.
"	CW44	211	30 w.	——	Pena y Schweizer.
Salto	CW32	254	50 w.	——	Radio Pera, Salvador E. Pera.
"	CW34	246	50 w.	——	Tribuna Salteña, Modesto Llantada.
"	CW36	238	30 w.	——	Radio Popelka, Ernesto Popelka.
"	CW38	231	30 w.	——	Radio Lansa, Carlos S. Lansa.
Tucuarembo	CW30	263	——	——	Radio Paso de los Toros, F. Perez Alonso.
"	CW46	206	20 w.	——	Radio Durazno.
VENEZUELA					
Caracas	YV1BC	312	5 kw.	——	Broadcasting Caracas.
EUROPE					
ALBANIA					
——	——	244.1	——	——	——
AUSTRIA					
Graz	——	352.1	7 kw.	——	Oesterr. Radio-Verkehrs A. G. Johannesgasse 4b, Wien I.
Innsbruck	——	283.6	500 w.	Provisionally.	"
Klagenfurt	——	453.2	500 w.	——	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
AUSTRIA—*continued*					
Linz	—	245.9	500 w.	—	Oesterr. Radio-Verkehrs A. G., Johannesgasse 4b, Wien I.
Salzburg	—	218.5	500 w.	—	"
Wien (Rosenhügel)	—	517.2	15 kw.	The power of this station will shortly be increased to 100 kw.	"
BELGIUM					
Bruxelles I (Velthem)	ON4RB	509.3	15 kw.	—	Institut National Belge de Radiodiffusion, Ia, rue du Bastion.
Bruxelles II (Velthem)	—	337.8	15 kw.	—	"
Bruxelles (Radio-Conférence)	EB4RC	215.6	+ 100 w.*	—	A. Rombauts, 30 Place de Jamblinne de Meux.
Bruxelles (Schaerbeek)	EB4FO	245.9	100 w.	—	L. Mestag, 76, Avenue Clays.
Chatelineau	EB4CE	215.6	+ 100 w.	Authorization in suspense.	E. Lucas, 3, Place Albert Ier.
Gand (École Industr.)	EB4RG	245.9	—	"	École Industrielle Supérieure, 14, Quai des Tilleul.
—	—	208.3	—	In construction.	—
BULGARIA					
Sofia	—	318.8	+ 500 w.	It is planned to replace this station by another one with 15 kw. power.	—
CORSICA					
—	—	237.2	—	A high-power station is planned for the Nice-Monaco-Corsica area.	—

* Whenever a + appears in these lists, the power of the station is *not* given according to the Copenhagen formula.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CZECHOSLOVAKIA					
Bratislava	—	279.3	13.5 kw.	—	Station: Adm. of Posts and Telegraphs; Programs: Radiojournal, Fochova 62, Praha.
Brno	—	342.1	32 kw.	—	"
Kosice	—	293.5	2.6 kw.	—	"
Moravska-Ostrava	—	263.8	11.2 kw	—	"
Praha I	—	488.6	120 kw.	—	"
Praha II	—	249.6	—	This wave length will be used by the old station of Praha I.	"
DENMARK					
Kalundborg	OXP	1,153.8	7.5 kw.	This wave length will be used later on by a new station of 60 kw and the existing post will be transferred near Copenhagen and will work on 5 kw.	Station: General Direction of Posts and Telegraphs; Programs: Radioraadet, Tordenskjoldsgade, Copenhagen.
Kobenhavn (Copenhagen)	OXQ	281.2	750 w.	—	"
DANZIG					
Danzig	—	449.8	500 w.	—	Adm. of Posts and Telegraphs.
ESTONIA					
Tallinn	—	298.8	11 kw.	—	S. A. Raadio Ringhääling, Tallinn.
Tartu	—	512.8	500 w.	—	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
FINLAND					
Helsinki I	OFA	368.1	10 kw.	——	Station: Adm. of Posts and Telegraphs; Programs: Osakeyhtiö Suomen Yleisradio, Aleksanterink 46, Helsinki.
Helsinki II	——	221.4	400 w.	——	"
Lahti	OFB	1,796.4	40 kw.	An increase in power is foreseen.	"
Oulu	OFF	690	1.5 kw.	The power will be increased to 10 kw.	"
Pietarsaari	——	245.9	500 w.	——	"
Pori (Uleaborg)	OFD	453.2	1 kw.	——	"
Tampere	OFE	558.6	1 kw.	——	"
Turku (Abo)	OFG	245.9	500 w.	——	Turunmaan Radioyhdistys r.y.
Viipuri (Viborg)	OFH	291	13.2 kw.	The power will be increased to 40 kw.	Station: Adm. of Posts and Telegraphs; Programs: Osakeyhtiö Suomen Yleisradio, Helsinki.
FRANCE					
Beziers	——	240.6	+ 300 w.	——	Bonnefous, 3, rue Capus.
Bordeaux (Lafayette)	——	304.5	20 kw.	A station of at least 60 kw. is contemplated.	Adm. of Posts and Telegraphs.
Bordeaux (Sud-Ouest)	——	237.5	2.5 kw.	——	Cité Catros Gérand, Bordeaux (Association Radio Sud-Ouest).
Grenoble	——	567	3.5 kw.	Provisionally. A station of greatly increased power is contemplated.	Adm. of Posts and Telegraphs.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
FRANCE—*continued*					
Juan les Pins	—	249.2	+ 800 w.	—	Casino Juan-les-Pins.
Lille PTT (Nord Lille)	—	265.5	2.5 kw.	The power will be increased toward the end of 1933.	Adm. of Posts and Telegraphs.
Limoges	—	285.3	1.5 kw.	A station of at least 60 kw. is contemplated.	"
Lyon-la-Doua	—	465.8	2.3 kw.	The power will be increased to 90 kw. at the end of 1933.	"
Fécamp (Radio Normandie)	—	222.2	+ 200 w.	—	Soc. Radio-Normandie, Villa la Grandière.
Lyon (Radio-Lyon)	—	286.8	800 w.	—	Soc. Radio-Lyon-Emissions, 39, rue de Marseille.
Marseille PTT.	—	315.8	2.5 kw.	The power will be increased to 60 kw. at the end of 1933.	Adm. of Posts and Telegraphs.
Montpellier	—	286	1.2 kw.	—	"
Nîmes		235.5	70 w.	Broadcasts suspended.	Soc. Radiophonie Méridionale, Hôtel de Ville.
Paris PTT. (École Sup.)	—	447.1	7 kw.	The power will be increased to 120 kw. at the end of 1933.	Adm. of Posts and Telegraphs.
Paris (Poste Parisien)	—	328.2	60 kw.	—	Cie. Gén. d'Energie Radioélectrique, 4, rue du Général Foy, Paris VIII.
Paris (Radio LL)	—	380.1	+800 w.	—	Cie. Nationale de Radiodiffusion, 66, rue de l'Université.
Paris (Radio-Paris)	—	1,724.1	75 kw.	This power will be increased later on to 100 or 120 kw.	Cie. Française de Radiophonie, 11, rue François Ier.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
FRANCE—*continued*					
Paris (Radio-Vitus)	—	308.9	+700 w.	—	Vitus, 90, rue Damrémont.
Paris (Tour Eiffel)	—	1,445.8	15 kw.	—	Adm. of Posts and Telegraphs.
Rennes PTT	—	272	1.2 kw.	The power will be increased to about 100 kw. in 1933.	"
Strasbourg	—	345.2	17 kw.	—	"
Toulouse	—	385.1	8 kw.	This station has increased its power to 60 kw. but awaits an official authorization.	Emissions Radio-Toulouse, 51, rue d'Alsace Lorraine.
"	—	255.3	1 kw.	The power will be increased to 120 kw. at the end of 1933.	Adm. of Posts and Telegraphs.
GERMANY					
Augsburg	—	559.7	250 w.	A transformation of this post is foreseen for 1933.	Station: German Reichspost; Programs: Bayerischer Rundfunk G.m.b.H., München.
Berlin I	—	410	1.5 kw.	The power of this station will be increased to 60 kw., probably at the beginning of 1933.	Station: German Reichspost; Programs: Funkstunde A.G.
Berlin II	—	283.6	500 w.	It is foreseen to close down this station in 1933.	"
Bremen	—	269.8	250 w.	Provisionally.	Station: German Reichspost; Programs: Nordische Rundfunk A.G., Hamburg.
Breslau	—	325	60 kw.	—	Station: German Reichspost; Programs: Schlesische Funkstunde A.G.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
GERMANY—*continued*					
Dresden	—	318.8	250 w.	Provisionally.	Station: German Reichspost; Programs: Mitteldeutsche Rundfunk A.G., Leipzig.
Flensburg	—	227.4	500 w.	—	Station: German Reichspost; Programs: Nordische Rundfunk A.G., Hamburg.
Frankfurt-am-Main	—	259.3	17 kw.	—	Station: German Reichspost; Programs: Südwestdeutsche Rundfunk A.G.
Freiburg i. Br.	—	569.3	250 w.	—	Station: German Reichspost; Programs: Süddeutsche Rundfunk A.G., Stuttgart.
Gleiwitz	—	253.1	5 kw.	—	Station: German Reichspost; Programs: Schlesische Funkstunde A.G., Breslau.
Hamburg	—	372.2	1.5 kw.	The power of this station will be increased to 60 kw., probably at the beginning of 1933.	Station: German Reichspost; Programs: Nordische Rundfunk A.G.
Hannover	—	566	250 w.	—	Station: German Reichspost; Programs: Nordische Rundfunk A.G., Hamburg.
Heilsberg	—	276.5	60 kw.	—	
Kaiserslautern	—	559.7	1.5 kw.	—	Station: German Reichspost; Programs: Bayerischer Rundfunk G.m.b.H., München.
Kassel	—	245.9	250 w.	—	Station: German Reichspost; Programs: Südwestdeutsche Rundfunk A.G., Frankfurt/M.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
GERMANY—*continued*					
Kiel	—	232.2	250 w.	Provisionally.	Station: German Reichspost; Programs: Nordische Rundfunk A.G., Hamburg.
Königsberg	—	217	500 w.	—	Station: German Reichspost; Programs: Ostmarken Rundfunk A.G.
Langenberg	—	472.4	60 kw.	—	Station: German Reichspost; Programs: Westdeutscher Rundfunk A.G., Köln.
Leipzig	—	389.6	120 kw.	—	Station: German Reichspost; Programs: Mitteldeutsche Rundfunk A.G.
Magdebourg	—	283.6	500 w.	—	Station: German Reichspost; Programs: Funkstunde A.G., Berlin.
München	—	532.9	60 kw.	—	Station: German Reichspost; Programs: Bayerischer Rundfunk G.m.b.H.
Nürnberg	—	238.9	2 kw.	—	Station: German Reichspost; Programs: Bayerischer Rundfunk G.m.b.H., München.
Stettin	—	283.6	500 w.	—	Station: German Reichspost; Programs: Funkstunde A.G., Berlin.
Stuttgart (Mühlacker)	—	360.6	60 kw.	—	Station: German Reichspost; Programs: Süddeutsche Rundfunk A.G.
Zeesen (Königswusterhausen)	—	1,634.9	60 kw.	—	Station: German Reichspost; Programs: Deutsche Welle G.m.b.H., Berlin.
GREAT BRITAIN AND NORTHERN IRELAND					
Aberdeen	—	214.4	1 kw.	Provisionally.	British Broadcasting Corporation, Broadcasting House, London W. 1

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
GREAT BRITAIN AND NORTHERN IRELAND —*continued*					
Belfast	—	242.3	1 kw.	The power of this station will be increased.	British Broadcasting Corporation, Broadcasting House, London W.1.
Bournemouth	—	288.5	1 kw.	—	"
Cardiff	—	309.9	1 kw.	—	"
Daventry 5XX (National)	—	1,554.4	30 kw.	The power will shortly be increased to 100 kw.	"
London (National)	—	261.5	50 kw.	—	"
London (Regional)	—	355.9	50 kw.	—	"
Midland (Regional)	—	398.9	25 kw.	The power will shortly be increased to 50 kw.	"
Newcastle	—	211.3	—	Provisionally.	"
North (National)	—	301.5	50 kw.	—	"
North (Regional)	—	480	50 kw.	—	"
Plymouth	—	288.5	120 w.	—	"
Scottish (National)	—	288.5	50 kw.	—	"
Scottish (Regional)	—	376.4	50 kw.	—	"
Swansea	—	288.5	120 w.	—	"
GREECE					
—	—	269.8	—	Foreseen.	—
HUNGARY					
Budapest (Lakihegy)	HAL	550.5	18.5 kw.	A station of 120 kw. is contemplated.	Station: Administration of P. T. T. Programs: Magyar Telefon Hirmondo ès Radio R. T., Föherceg Sandor ut. 7, Budapest VIII.

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HUNGARY—*continued*					
Budapest II	—	845.1	—	—	Station: Administration of P. T. T. Programs: Magyar Telefon Hirmondo ès Radio R. T., Föherceg Sandor ut. 7, Budapest VIII.
(Magyarovar)	—	209	—	—	—
ICELAND					
Reykjavik	TFU	1,200	17 kw.	—	Rikisutvarpid (State Broadcasting).
IRISH FREE STATE					
Cork	6CK	224.4	1 kw.	—	Department of Posts and Telegraphs.
Dublin	2RN	413.8	80 kw.	—	"
ITALY					
Bari	1BA	269.8	20 kw.	—	Ente Italiano Audizioni Radiofoniche (E. I. A. R.), Via Arsenale 21, Torino.
Bolzano	1BZ	368.1	1 kw.	Experimentally.	"
Firenze	1FI	501.7	20 kw.	—	"
Genova	1GE	312.8	10 kw.	—	"
Milano	1MI	331.5	50 kw.	—	"
Napoli	1NA	318.8	1.5 kw.	Provisionally.	"
Palermo	1PA	537.6	3 kw.	—	"
Roma	1RO	441.2	50 kw.	—	"
Torino	1TO	273.7	7 kw.	—	"
Trieste	1TR	247.7	10 kw.	—	"
—	—	212.8	—	—	—
LATVIA					
Kuldija	—	761.4	+ 35 kw.	Foreseen for 1933.	Department of Posts and Telegraphs.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
LATVIA—*continued*					
Madona	—	875	+35 kw.	—	Department of Posts and Telegraphs.
Riga	YLZ	525.4	15 kw.	—	"
LITHUANIA					
Kaunas	RYK	1,935	7 kw.	—	Station: Department of Posts and Telegraphs: Programs: Ministry of Education.
LUXEMBURG					
Radio-Luxemburg	—	222.9	—	A station of 200 kw. has been erected and experiments made on long-waves.	Compagnie Luxembourgeoise de Radiodiffusion.
MONACO					
Monaco	—	237.2	—	A high-power station is planned for the Nice-Monaco-Corsica area.	—
NETHERLANDS					
Amsterdam (Hilversum)	—	296.1	7 kw.D 20 kw.N	—	Five companies share the stations of Hilversum and Huizen. They are: Algemeene Vereeniging Radio Omroep, Keizersgracht 107, Amsterdam C.; Katolieke Radio Omroep, Heerengracht 118, Amsterdam C.; Nederlandsche Christelijke Radio Vereeniging, 10 Heuvellaan, Hilversum; Vereeniging Arbeiders Radio Amateurs, Heuvellaan 33, Hilversum; Vrijzinnig Protestantsche Radio Omroep, Singel 60, Amsterdam C.
Amsterdam (Huizen)	—	1,875	5 kw.	The power will be increased to 20 kw.	
Bloemendaal	—	245.9	10 w.	Working only on Sundays for religious services.	Gereformeerde Kerk.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
NORWAY					
Aalesund	LKA	467.3	350 w.	A new national broadcasting system is planned to come into service in July, 1933, whereby the technical operation will be in the hands of the Posts and Telegraphs and the programs under the control of the Ministry of Culture.	Administration of Telegraphs.
Bergen	LKB	364.1	1 kw.		Bergen Kringkastingselskapet A/S. (A station of much increased power is contemplated.)
Bodö	LKD	453.2	500 w.		Kringkastingselskapet A/S, Oslo.
Fredrikstad	LKF	365.8	700 w.		"
Hamar	LKH	575	700 w.		"
Kristiansand	LKK	235.5	500 w.		"
Notodden	LKN	447.1	80 w.		"
Oslo	LKO	1,083	60 kw.		"
Porsgrund	LKP	453.2	700 w.		"
Rjukan	LKR	447.1	150 w.		"
Stavanger	LKS	240.6	500 w.		"
Tromsoe	LKM	453.2	100 w.		Troms Kringkasting A/S.
Trondheim	—	495.8	1.2 kw.		Kringkastingselskapet A/S, Oslo.
POLAND					
Katowice	SP4	408.7	12 kw.	—	Polskie Radjo, Warszawa.
Krakowa	SP3	312.8	1.7 kw.	—	"
Lodz	SP7	233.8	1.65 kw.	Actually a relay station.	"
Lwow	SP6	380.8	16 kw.	—	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
POLAND—*continued*					
Poznan	SP2	334.4	1.35 kw.	——	Polskie Radjo, Warszawa.
Warszawa I (Raszyn)	SP1	1,411.8	120 kw.	——	"
Warszawa II	SP8	214.4	10 kw.	Actually not in operation.	"
Wilno	SP5	565	16 kw.	——	"
PORTUGAL					
——	——	283.6	——	Foreseen.	Adm. of Posts and Telegraphs.
ROUMANIA					
Bucarest	——	394.2	12 kw.	A station of higher power is contemplated.	Societatea de Difuziune din Roumania, 60 rue Général Berthelot.
Bucarest (Université)	YO1	225.9	——	——	Institut Electrotechnique, Universitaire.
Craciunelu	——	2,000	1 kw.	——	——
Jassy-Université	——	211.3	——	——	——
SPAIN					
Barcelona	EAJ1	348.8	+7.6 kw.	——	Union-Radio S. A., Pi y Margall 10, Madrid.
"	EAJ15	252.1	+1 kw.	——	Associacion Nacional de Radio-difusion.
Madrid	EAJ7	424.3	+1.3 kw.	——	Union-Radio S. A.
"	EAJ2	424.3	——	——	Radio España.
San Sebastián	EAJ8	453.2	+600 w.	——	Union-Radio S. A., Madrid.
Sevilla	EAJ5	369	+1 kw.	——	"
Valencia	EAJ3	276.6	——	——	General Direction of Telecommunications, Madrid.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
SWEDEN					
Boden	SBE	1,229.5	600 w.	—	Station: Adm. of Posts and Telegraphs; Programs: Aktiebolaget Radiotjänst, Kungsgatan 8, Stockholm.
Boras	SCA	207	150 w.	—	"
Eskilstuna	SCB	245.9	200 w.	—	"
Falun	SCC	307	500 w.	—	Station: Adm. of Posts and Telegraphs; Programs: Falu Radioklubb.
Gävle	SCD	204.1	200 w.	—	Station: Adm. of Posts and Telegraphs; Programs: Radiotjänst.
Göteborg	SBB	321.9	10 kw.	—	"
Halmstad	SCE	215.6	200 w.	—	"
Hälsingborg	SCG	201.3	200 w.	—	"
Hörby	SBH	257.1	10 kw.	—	"
Hudiksvall	SCF	222.9	150 w.	—	"
Jönköping	SCH	200	150 w.	—	"
Kalmar	SCI	249.6	200 w.	Provisionally.	"
Karlskrona	SCJ	195	200 w.	—	"
Karlstad	SBK	230.6	250 w.	—	"
Kristineham	SCM	202.7	250 w.	—	"
Malmö	SBC	230.6	1.25 kw.	—	"
Motala	SBG	1,348.3	30 kw.	—	"
Norrköping	SBI	230.6	250 w.	—	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
SWEDEN—*continued*					
Orebro	SCV	237.2	200 w.	Provisionally.	Station: Adm. of Posts and Telegraphs; Programs: Radiotjänst.
Ornsköldsvik	SCW	206	200 w.	——	Station: Adm. of Posts and Telegraphs; Programs: Ornsköldsviks Radioklubb.
Ostersund	SBF	748.1	600 w.	——	Station: Adm. of Posts and Telegraphs; Programs: Radiotjänst.
Säffle	SCP	245.9	400 w.	——	"
Stockholm	SBA	435.4	55 kw.	——	"
Sundsvall	SBD	541.5	10 kw.	——	"
Trollhättan	SBJ	230.6	200 w.	——	"
Uddevalla	SCR	227.4	50 w.	Provisionally.	"
Umea	SCS	230.6	200 w.	——	"
Upsala	SCT	453.2	150 w.	——	Station: Adm. of Posts and Telegraphs; Programs: Uppsala Radioklubb.
Varberg	SCU	245.9	300 w.	——	Station: Adm. of Posts and Telegraphs; Programs: Radiotjänst.
SWITZERLAND					
Basel	——	244.1	500 w.	Provisionally.	Station: Adm. of Posts and Telegraphs; Programs: Société Suisse de Radiodiffusion, 30, Neuengasse, Berne.
"	——	1,010	250 w.	This station does not operate regularly.	"
Berne	——	245.9	500 w.	——	"
Beromünster	——	459.4	60 kw.	——	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
SWITZERLAND—*continued*					
Genève	—	759.5	+1.3 kw.	—	Station: Adm. of Posts and Telegraphs; Programs: Société Suisse de Radiodiffusion, 30, Neuengasse, Berne.
Monte Ceneri	—	678.7	15 kw.	In construction.	"
Sottens	—	403.8	25 kw.	—	"
TURKEY					
Ankara	TAE	1,538	+7 kw.	—	Société Anonyme Turgue de Radiodiffusion.
Istanbul	TAL	1,200	+5 kw.	—	Société Anonyme de Radiodiffusion.
U. S. S. R.					
Achkhabad	RV19	899.1	4 kw.	—	Commissariat of Post & Telegraphs.
Alma-Ata	RV60	967.7	10 kw.	—	"
Arkhanghelsk	RV36	389.6	10 kw.	—	"
Astrakhan	RV35	509.3	10 kw.	—	"
Bakou	RV8	1,260	10 kw.	The power will be increased to 100 kw.	"
Dnepropetrovsk	RV30	345.2	4 kw.	—	"
"	RV30	587.1	4 kw.	—	"
Erivan	RV21	742.6	4 kw.	—	"
Engels	RV55	312.8	1 kw.	—	"
Gomel	RV40	483	1 kw.	—	"
Groznyi	RV23	443.8	1.2 kw.	—	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
U. S. S. R.—*continued*					
Irkoutsk	RV14	1,600	10 kw.	——	Commissariat of Posts & Telegraphs.
Ijesk	——	363.6	4 kw.	In construction.	"
Ivanovo-Voznesenk	RV31	480	10 kw.	——	"
Karaganda	RV46	437	1.2 kw.	——	"
Kazan	RV17	465.8	10 kw.	——	"
Kharkov	RV4	937.5	20 kw.	——	"
"	RV20	368.1	10 kw.	——	"
Kiev	RV9	1,034.5	36 kw.	The power will be increased to 100 kw.	"
Krasnodar	RV33	461.5	1 kw.	——	"
Krasnoïarsk	RV66	900	500 w.	——	"
Leningrad	RV70	348.8	10 kw.	——	"
"	——	857.1	100 kw.	——	"
Makhatch-Kala	RV27	377	1 kw.	——	"
Minsk Koloditschi	RV10	1,105	35 kw.	——	"
Moskva Imeni Kominterna	——	1,000	100 kw.	——	"
"	RV1	1,481.5	500 kw.	In construction.	"
Moskva Imeni Stalina	RV39	424.3	100 kw.	——	"
Moskva Imeni Popova	RV58	1,117.4	40 kw.	——	"
"	RV58	1,100	40 kw.	——	"
Moskva Opytnaia	RV2	720	20 kw.	——	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
U. S. S. R.—*continued*					
Moskva Mosps	RV37	378.5	1 kw.	——	Union of Moskva Professional Syndicates.
Moskva Stchelkovo	RV49	1,304.3	100 kw.	——	Commissariat of Posts & Telegraphs.
Naltchik	RV51	401	1.2 kw.	——	"
Nijni Novgorod	RV42	501.7	10 kw.	——	"
Novosibirsk	RV6	1,260	4 kw.	——	"
"	RV6	1,380	100 kw.	——	"
Odessa	RV13	453.2	10 kw.	——	"
Omsk	RV44	636	1.2 kw.	——	"
Orenburg	RV45	650	1 kw.	——	"
Oufa	RV22	486.2	10 kw.	——	"
"	RV22	675	2 kw.	——	"
Penza	RV56	469.8	1.2 kw.	——	"
Petrozavodsk	RV29	779	10 kw.	——	"
Piatigorsk	RV34	347	1.2 kw.	——	"
Rostov s/Don	RV12	848.7	4 kw.	——	"
Samara	RV16	575	1.2 kw.	——	"
"	——	742.6	4 kw.	In construction.	"
Samarkand	RV18	875	2 kw.	——	"
Saratov	RV3	882.3	20 kw.	——	"
Simferopol	RV52	476.4	4 kw.	——	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
U. S. S. R.—*continued*					
Smolensk	RV24	631	2 kw.	——	Commissariat of Posts & Telegraphs.
"	RV24	565	2 kw.	——	"
Stalinabad	RV47	712	2 kw.	——	"
Stalino	RV26	385.1	10 kw.	——	"
Stavropol	RV32	495.8	1.2 kw.	——	"
Sverdlovsk	RV5	825	50 kw.	——	"
Syktykvaz	RV41	535.7	1.2 kw.	——	"
Tachkent	RV11	1,170	25 kw.	——	"
Tcheliabinsk	RV68	364.1	200 w.	——	"
Tiflis	RV7	1,071.4	35 kw.	The power will be increased to 100 kw.	"
Tiraspol	RV57	358	4 kw.	In construction.	"
Tomsk	RV48	465	1.2 kw.	——	"
Verkhneoudinsk	RV63	857.1	10 kw.	In construction.	"
Vladikavkaz	RV64	398.9	10 kw.	In construction.	"
Vladivostok	RV28	472.4	300 w.	——	"
Voronej	RV25	779	3 kw.	——	"
YUGOSLAVIA					
Beograd	——	429.7	2.5 kw.	——	Radio A. D., Zgrada Akademija Nauka.
Ljubljana	——	575	5.27 kw.	——	Radio-Ljubljana, Miklosiceva cesta 5.
Zagreb	——	307	750 w.	——	Radiostanica Zagreb, Markov 9.
——	——	232.2	——	——	——

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
			ASIA		
BRITISH HONGKONG					
Victoria	ZBW	355	1.5 kw.	——	Colonial Government Hongkong.
BRITISH INDIA					
Bombay	VUB	357	3 kw.	Temporarily closed.	Indian State Broadcasting Service.
Calcutta	VUC	370	3 kw.	——	"
Lahore	VUL	340	100 w.	——	Y. M. C. A. Radio Club Lahore.
Madras	VUM	390	200 w.	——	Corporation of Madras.
CEYLON					
Colombo	VPB	428.54	2.2 kw.	——	General Post Office.
CHINA					
Chungking	COCK	420	1 kw.	——	Provincial Government.
Dairen	JQAK	395	5 kw.	——	——
Hangchow	HGY	307	750 w.	——	Provincial Government.
Harbin	COHB	445	1 kw.	——	City Government.
Hongkong	ZBW	385	250 w.	——	——
Kvangchow	CMB	440	1 kw.	——	Provincial Government.
Mukden	COMK	410	2 kw.	——	Chinese North Eastern Telephone, Telegraph and Radio Administration.
Nanking	XPOA	410	90 kw.	——	National Government.
"	XGZ	280	500 w.	——	Kaomintung Headquarters.
Peiping	COPP	330	100 w.	——	Peiping Radio Station.
Shanghai	XCBL	235.5	250 w.	——	China Broadcasting Co., Ltd.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
CHINA—*continued*					
Shanghai	XGAH	323	100 w.	——	Amateur's Home.
"	RUOK	220	250 w.	——	——
"	XGKW	260	15 w.	——	——
"	XGX	370	50 w.	——	Sun Sun Company.
"	XGT	258	100 w.	——	——
"	XGNE	280	50 w.	——	——
Shantung	——	——	250 w.	In construction.	——
Tientsin	COTN	480	500 w.	——	The Government of Tientsin City.
Ting-Hsian	——	——	30 w.	For local instruction to farmers only.	——
FRENCH INDO-CHINA					
Saigon	——	570	——	Broadcasting suspended.	Compagnie Franco-Indochinoise de Radiophonie.
HAWAII					
Honolulu	KGMB	227.1	250 w.	——	Honolulu Broadcasting Co., Ltd.
"	KAU	399.8	1.5 kw.	——	Advertiser Publishing Co., Ltd.
JAPAN					
Akita	JOUK	465	300 w.	——	Nippon Hoso Kyokai.
Dairen	JQAK	395	500 w.	——	Kantoshu Teishinkyoku (Direction of Kwantung P. T. T.).
Fukuoka	JOLK	447	500 w.	——	Nippon Hoso Kyokai.
Hakodate	JOVK	——	——	In construction.	"
Hiroshima	JOFK	352	10 kw.	——	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
JAPAN—*continued*					
Kanazawa	JOJK	423	3 kw.	——	Nippon Hoso Kyokai
Keijo	JODK	435	1 kw.	——	"
Kochi	JORK	——	——	In construction.	"
Kokura	JOSK	408	1 kw.	——	"
Kumamoto	JOGK	360	10 kw.	——	"
Kyoto	JOOK	——	——	In construction.	"
Matsue	JOTK	480	500 w.	——	"
Nagano	JOMK	472	500 w.	——	"
Nagoya	JOCK	370	10 kw.	——	"
Niigata	JOQK	480	500 w.	——	"
Osaka	JOBK	400	10 kw.	——	"
Okayama	JOKK	429	500 w.	——	"
Sendai	JOHK	390	10 kw.	——	"
Shizuoka	JOPK	385	500 w.	——	"
Supporo	JOIK	361	10 kw.	——	"
Taihoku	JFAK	448	10 kw.	——	"
Tokyo	JOAK	345	10 kw.	——	"
		508	10 kw.	——	"
PHILIPPINE ISLANDS					
Cebu	KZRC	320	——	——	Erlanger & Galinger (I. N. C. Manila).
Manila	KZRM	485	50 kw.	——	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
PHILIPPINE ISLANDS—*continued*					
Manila	KZ1B	——	1 kw.	——	Beck Dept. Store.
SIAM					
Bangkok	HSP1	350	2.5 kw.	——	Adm. of Posts and Telegraphs.
"	HSP3	320	——	——	"
" (Sala Daeng)	HS7PJ	370-325	——	——	"
"	HS11PJ	340	400 w.	——	——
OCEANIA					
AUSTRALIA (Federation)					
Adelaide	5CL	411	——	Class "A" station	National Broadcasting Service.
Brisbane	4QG	395	——	"	"
Corowa	2CO	536	——	"	"
Crystal Brook	5CK	472	——	"	"
Hobart	7ZL	517	——	"	"
Melbourne	3AR	492	——	"	"
"	3LO	375	——	"	"
Newcastle	2NC	241	——	"	"
Perth	6WF	435	——	"	"
Port Pirie	5CK	472	——	"	"
Rockhampton	4RK	330	——	"	"
Sydney	2BL	351	——	"	"
"	2FC	451	——	"	"

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
AUSTRALIA—*continued*					
Adelaide	5AD	229	——	Class "B" station	Advertiser Newspapers, Ltd.
"	5DN	312	——	"	Hume Broadcasters, Ltd.
"	5KA	250	——	"	Sport Radio Broadcasting, Ltd.
Albury	2AY	203	——	"	Charles Rice.
Ballarat	3BA	231	——	"	Ballarat Broadcasters Pty., Ltd.
Bendigo	3BO	309	——	"	Amalgamated Wireless Australasia, Ltd.
Brisbane	4BC	262	250 w.	"	J. B. Chandler & Co.
"	4BH	217	——	"	Broadcasters (Aust. Ltd.).
"	4BK	233	——	"	Brisbane Broadcasting Co., Ltd.
Broken Hill	2XL	220	——	"	Barrier Broadcast, Ltd.
Canberra	2CA	286	——	"	A. J. Ryan.
Geelong	3GL	214	——	"	Geelong Broadcasters Pty., Ltd.
Goulburn	2GN	216	——	"	Goulburn Broadcasting Co., Ltd.
Gunnedah	2MO	226	— —	"	M. J. Oliver.
Hamilton	3HA	297	——	"	Western Province Radio Pty., Ltd.
Hobart	7HO	337	——	"	Commercial Broadcasters Pty., Ltd.
Kalgoorlie	6KG	246	– –	"	Goldfields Broadcasters, Ltd.
Launceston	7LA	273	— —	"	Findley & Wills Broadcasters Pty., Ltd.
Lismore	2XN	224	– —	"	G. W. Exton.
Mackay	4MK	252	——	"	Williams Agencies.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
AUSTRALIA—*continued*					
Maryborough	4MB	283	——	Class "B" station	A. P. Wynne.
Melbourne	3AK	200	——	"	Akron Broadcasting Co. Pty., Ltd.
"	3AW	210.5	——	"	The Vogue Broadcasting Co. Pty., Ltd.
"	3DB	254	——	"	3DB Broadcasting Station Pty., Ltd.
"	3KZ	222	——	"	Industrial Printing and Publicity Co.
"	3UZ	323	——	"	The Nilsen Broadcasting Services Pty., Ltd.
Moss Vale	2MV	246	——	"	Moss Vale Broadcasting Service, Ltd.
Newcastle	2HD	270	——	"	Airsales Broadcasting Co.
"	2KO	212	——	"	Newcastle Broadcasting Co., Ltd.
Perth	6ML	264	——	"	Musgroves, Ltd.
"	6PR	341	——	"	Nicholson's, Ltd.
Port Pirie	5PI	288	——	"	Midlands Broadcasting Services, Ltd.
Rockhampton	4RO	226	——	"	Rockhampton Broadcasting, Ltd.
Swanhill	3SH	278	——	"	Swanhill Broadcasting Co.
Sydney	2CH	248	——	"	New South Wales Council of Churches.
"	2GB	316	3 kw.	"	Theosophical Broadcasting Station, Ltd.
"	2KY	280	——	"	Trades & Labor Council.
"	2SM	236	——	"	Catholic Broadcasting Committee.
"	2UE	293	——	"	Electrical Utilities Supply Co.
"	2UW	267	——	"	Radio Broadcasting, Ltd.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
AUSTRALIA—*continued*					
Toowoomba	4GR	300	——	Class "B" station	Gold Radio Service.
Townsville	4TO	256	——	"	Amalgamated Wireless Australasia, Ltd.
Trafalgar	3TR	234	——	"	Gippsland Broadcasting Service, Trafalgar, Ltd.
Ulverstone	7UV	205	——	"	Northwestern Tasmanian Broadcasters.
Wagga Wagga	2WG	303	——	"	E. Roberts.
Wangaratta	3WR	238	——	"	Wangaratta Broadcasting Pty., Ltd.
Wollongong	2WL	209	——	"	Wollongong Broadcasting Co.
NEW ZEALAND					
Auckland	ZL1YA	329	500 w.	——	New Zealand Broadcasting.
"	ZL1ZB	275	10 w.	——	La Gloria Gramophone Co.
"	ZL1ZJ	227	20 w.	——	Johns, Ltd.
"	ZL1ZQ	252	10 w.	——	L. R. E. Keith, Auckland.
"	ZL1ZR	275	40 w.	——	Lewis Eady, Ltd.
Christchurch	Z13YA	306	500 w.	——	New Zealand Broadcasting.
"	ZL3Zc	250	250 w.	——	Home Recreations, Ltd.
Dannevirke	ZL2ZU	273	7 w.	——	The Gramaphone & Radio Co., Ltd., and A. R. C. Claridge.
Dunedin	ZL4YA	461.5	500 w.	——	New Zealand Broadcasting.
"	ZL4ZB	279	20 w.	——	The Otago Radio Association.
"	ZL4ZL	246	180 w.	——	Radio Service, Ltd.
"	ZL4ZM	278	40 w.	——	J. D. McKewen.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
NEW ZEALAND—*continued*					
Dunedin	ZL4ZO	278	30 w.	——	Barnett's Radio Supplies.
Ekatehuana	ZL2ZE	248	5 w.	——	G.R.S. Allen.
Gisborne	ZL2ZJ	260	20 w.	——	C. T. C. Hands.
"	ZL2ZM	261	100 w.	——	Atwater-Kent Radio Service, Ltd.
Greymouth	ZL3ZR	366	20 w.	——	Greymouth Radio Society.
Hamilton	ZL1ZH	476	50 w.	——	G. S. Anchor.
Hastings	ZL2ZI	226	10 w.	——	Sutcliffe's Music Store.
"	ZL2ZL	226	10 w.	——	Lockyer's Piano Store.
Invercargill	ZL4ZI	259	8 w.	——	G. C. Batcheler
Manurewa	ZL1ZM	248	10 w.	——	W. W. Rodgers.
Masterton	ZL2ZD	254	2 w.	——	W. D. Ansell.
Napier	ZL2ZH	238	10 w.	——	C. B. Hansen & Co., Ltd.
New Plymouth	ZL2YB	244	100 w.	——	New Zealand Broadcasting.
North Invercargill	ZL4ZP	259	10 w.	——	Parsons Radio Supplies, Invercargill.
Palmerston North	ZL2ZF	286	150 w.	——	The Palmerston North Radio Club.
"	ZL2ZO	268	10 w.	——	J. V. Kyle.
Wairoa	ZL2ZP	366	4 w.	——	E. A. Perry.
Wanganui	ZL2ZK	500	120 w.	——	D. A. Morrison & Co.
Wellington	ZL2YA	416	5 kw.	——	New Zealand Broadcasting.
"	ZL2ZR	500-234	150 w.	——	——
"	ZL2ZW	268	40 w.	——	L. E. Strachan.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
SAMOA ISLANDS					
Apia	ZL5ZA	319	5 w.	——	F. R. Plominski, Sogi.
AFRICA					
ALGERIA					
Algiers (Radio-Alger)	——	363.6	+16 kw.	——	Adm. of Posts and Telegraphs and "Société Amicale de Radio-Alger."
CANARY ISLANDS					
Las-Palmas	EAR5	280	500 w.	——	Director General of Communications.
EGYPT					
Abu Zabal	——	525	20 kw.	Foreseen for 1934.	{Station: Adm. of Posts and Telegraphs, {Programs: Egyptian Broadcasting Co.
Alexandria	——	——	——	"	"
Cairo	——	——	——	"	"
KENYA					
Nairobi	VQ7LO	400	2 kw.	——	British East African Co. under the control of the Imperial and International Communications, Ltd., Nairobi.
MADAGASCAR					
Tananarive	——	——	——	——	——
MOROCCO					
Rabat	——	416.4	+5 kw.	An increase in power to 15 or 20 kw. is foreseen in the course of 1933.	Adm. of Posts and Telegraphs of Morocco.
REUNION ISLAND					
S. Denis	——	500	——	——	Local Adm. of Posts and Telegraphs.
TUNISIA					
Tunis-Kasbah	TUA	1,350	+500 w.	——	Military Authorities.

Station Location	Call Letters	Wave Length (in meters)	Power	Observations	Owner (with address) City the same as station location unless otherwise specified.
UNION OF SOUTH AFRICA					
Bloemfontein	ZTB	510	750 w.	——	African Broadcasting Co., Ltd., Post Office Box 4559, Johannesburg.
Cape Town	ZTC	375	1.5 kw.	The power will be considerably increased and the old station removed to an Eastern State of the Union of South Africa.	"
Durban	ZTD	410	1.5 kw.	——	"
Johannesburg	ZTJ	450	10 kw.	——	"
Pretoria	ZTP	300	50 w.	——	"
Grahamstown	——	——	——	Foreseen.	"