



WORLD-RADIO

DOMINION & FOREIGN PROGRAMMES

Official Foreign and Technical
Journal of the B.B.C.

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FRIDAY, MARCH 23, 1928.

Two Pence.

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by a Listener in Switzerland.

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WORLD-RADIO

Station Identification Panel

Barcelona (Union Radio),
(EAJ1). Spain.

(Revised)

Wavelength: 344.8 metres.

Frequency: 870 kc. Power: 1.5 kw.

Approximate Distance from London:
730 miles.

Call: "Aqui estación Radio Barcelona.
EAJ1 (pron: eh-ah-hota-oono), in-
stalada en la cumbre del Monte
Tibidabo." Repeated at irregular
intervals. Between items the an-
nouncer (a man) only gives "Radio
Barcelona."

At 6 p.m. and 9 p.m. chimes relayed
from Cathedral.

Closes down with the National Anthem
and "Buenas noches, señores, hasta
mañana si Dios quiere."

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WORLD-RADIO

Vol. 6. No. 139.

FRIDAY, MARCH 23, 1928.

Two Pence.

We have pleasure in printing the following message from Mr. M. R. Heffernan, Parliamentary Secretary to the Minister for Posts and Telegraphs, Irish Free State, which inadvertently arrived too late for inclusion in our last issue:—

“I am very pleased to have the opportunity of sending a message for the St. Patrick’s Day number of *World-Radio*.

“Broadcasting in the Irish Free State has been from its inception directly under Government control, and is administered by the Department of Posts and Telegraphs. It has been necessary to make small beginnings as it has been desired that broadcasting should pay its own way. Experimental work has not been practicable and, therefore, we acknowledge our indebtedness to the experience gained by pioneer broadcasting organisations like the B.B.C.



Mr. M. R. Heffernan.

At present we have two stations, Dublin and Cork, each of 1.5 kw. power, and as the normal crystal range of these stations is only about twenty miles, reception on cheap crystal sets is possible only for a small part of the population. It is the aim of develop-

ment, however, to extend crystal range if possible to all parts of the country, and proposals for the erection of a central high-power station are under consideration; many technical problems are involved, but it is hoped that the difficulties will be overcome.

“The possibility of giving the Irish people overseas opportunities of hearing programmes from the Old Country by the establishment of a short-wave transmission is also looked forward to, although it will probably be some time before it can become an accomplished fact. The licence fee is ten shillings, but the number of licences is small, being only 27,000 out of a population of 2½ millions. It is hoped, however, that with extension of the service the number will reach 100,000.

“As to the programmes, it is the policy of the administration, whilst recognising that broadcasting must always remain for the most part a medium of entertainment for the public, nevertheless to pay special attention to its educational and utilitarian aspects. To help the national revival of the Irish language and of Irish music, poetry, and drama, and to develop in all things a distinctively national outlook is a special task of the broadcasting service. Ireland is rich in the possession of a beautiful folk music, our old airs and dance music is so uncommon that it is welcomed and appreciated not only by listeners at home, but by many in foreign countries. We aim at making known to the world through broadcasting our characteristic national music, not merely because it is national, but because we

believe that it is, for its own sake, worthy to compare with any that other lands can offer.

“It has been recognised that it would be unwise to impose too stringent a restriction on the broadcasting of controversial matter, and some very interesting debates on matters of current public interest have been broadcast. Concerts of special interest are given in public, and in this way interest in broadcasting is stimulated, and the development of good symphony orchestras encouraged.

“It may be of interest to mention that community singing has been a very popular feature of these concerts. Special use is made of broadcasting for the distribution of news, also running commentaries on sporting events are given regularly, and are very popular. Market prices for farmers and information and advice on agricultural matters are broadcast regularly.

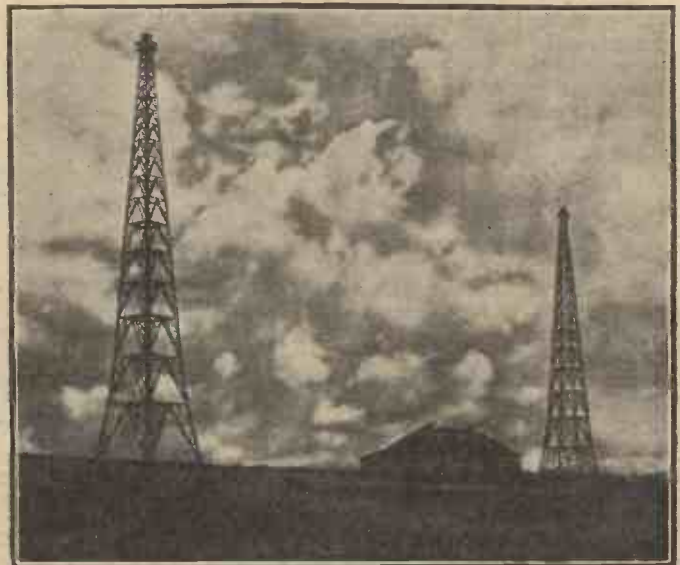
“The international value of broadcasting is, however, not forgotten. We in Ireland wish to hear the best that other countries can offer in music, literature and general culture, and in return we hope to give to the outside world some knowledge of our own national characteristics. With a view to bringing this ideal into practicable effect, experiment in regard to relaying of foreign programmes from our stations are proceeding, and we hope that our friends abroad are also endeavouring to pick up our transmissions and so make our country and ourselves better known and understood throughout the great world which through the agency of wireless is daily growing smaller and smaller.”

The Kaiserslautern Station

Kaiserslautern, the geographical centre of the “Pfalz,” well known for its wonderful wine, is the latest addition to the German broadcasting stations. As the Pfalz politically belongs to Bavaria the “Deutsche Stunde in Bayern,” with its headquarters in Munich, the Bavarian capital, is responsible for the programmes.

Kaiserslautern transmits on 204.1 metres (1,470 kc.) with a power of approximately 3 kw. It is linked up to Munich, whose programme it relays, by means of cable to Stuttgart, land-line from Stuttgart to Mannheim (until the cable is ready), again by cable from Mannheim - Ludwigshafen to Neustadt a. H. and land-line for the last stage Neustadt-Kaiserslautern, but also only till the cable line has been completed.

The transmitter and aerial are situated on a hill, the Vordere Rothen-Berg, about a mile to the north of Kaiserslautern, and 60 metres above the town. The total height above sea-level is thus 975 ft. The transmitter building contains, apart from the transmitting apparatus, and the necessary electric power machines, a four-room apartment for the permanent transmitter-control official. The aerial masts are entirely of wood and 60 metres high. The steel bolts are all copper-covered to prevent stray currents causing them to become hot. The masts are built in 19 “floors,” the undermost being 32½ by 32½ ft., the topmost about 2½ by 2½ ft. The timber used



The new Kaiserslautern Station, showing wooden masts.

was specially prepared and impregnated and will receive a further coating of preservative.

The aerial consists of three lengths of wire, 20 metres in length, and is of the T type. Interest may attach to the fact that tarred rope was used instead of the usual steel hawsers.

(Continued on Page 437.)



Apparatus for testing Electro-Magnetic Field Strength.

High-Power Broadcasting in Canada

IT has been claimed that since the opening of the new high-power station at Daventry 85 per cent. of the population of the British Isles can receive broadcast programmes on crystal sets. The significance of this fact may be well appreciated when it is realised that



Condenser Microphone

the distances over which the B.B.C. have to transmit their programmes are comparatively short. In the Dominions, however, with their vast tracts of sparsely populated lands, the problem of reaching the distant listener is an entirely different one. Thanks to the tremendous advance of broadcasting in the United States of America during the past decade and the consequent development and increase in the number of high-power broadcasting stations in that country, listeners in the British Isles are frequently able to pick up programmes originating on the other side of the Atlantic. It is, however, a regrettable fact that hitherto they have been almost entirely unsuccessful in hearing any transmissions from the Dominion of Canada, and that there has been practically no broadcasting station in Canada using a power greater than 1 kw. is no doubt the reason. It is pleasant, therefore, to be in a position to say that this sad state of affairs is now ended, and that a new era in Canada's radio history has begun.

This is the result of the opening in Toronto of the "key-station" of what, it is hoped, will develop into a chain of comparatively high-powered broadcasting stations stretching over the entire Dominion from Nova Scotia to British Columbia, which, adequately supported by one or two short-wave relay stations, should provide a very wide range of territory not only from East to West, but from the remote regions of the Far North to the thickly populated sections of the United States to the South, with the high quality British programmes for which Canadian listeners are impatiently waiting. This should be emphasised as at the present moment the lack of an organised chain of high-powered stations in Canada does not allow of Dominion-wide programmes, and listeners have to be content with those provided by their low-powered local stations.

This key-station, which is being sponsored by a well-known Canadian firm of distillers, is being erected on the shores of Lake Ontario, at a point forty-three miles from Toronto and two miles from Bowmanville, Ontario. The studios and offices are situated in one of the leading hotels in Toronto, being connected by land lines to the transmitter. A distinctive

feature of the apparatus at Bowmanville, which has been specially built by the Radio Corporation of America at a cost of £30,000, is that it embodies the very latest designs in crystal-controlled transmitters. This method enables two or more stations to be synchronized, the crystals being so accurately matched that no audible heterodyne will result between stations controlled.

The Bowmanville station, which has the call-letters CKGW, is operating on a wavelength of 312.3 metres, or a frequency of 960 kilocycles. Although capable of higher power, the station will at first supply 5 kw. to the aerial, which is suspended between two self-supporting towers 165 feet high, situated on the cliffs 60 feet above Lake Ontario. It is interesting to note that this new station will be the third largest in the British Empire, for at the present moment the two stations at Daventry 5GB and 5XX, are the only ones which have a greater power output than CKGW.

There are some seventy-five stations in Canada, of which only one has more than one kw. output, while twenty-five have less than fifty watts per station—the largest being "La Presse" station at Montreal, which is rated at 1.8 kw.

The sponsors of CKGW, in making their choice of Toronto for the site of the station, have been well advised. Situated in the centre of the most densely populated part of the Dominion and the natural hub of industry and commerce of the Eastern Provinces, Toronto is ideally suited for the home of this latest development in Canada's radio activities. It should be realised, too, that, for the reason that the city is almost entirely surrounded by water, having the St. Lawrence in the East and the Great Lakes to the South and West, the transmissions from CKGW will probably be received in those directions considerably increased in strength.



Main studio, showing piano, condenser microphone, announcer's desk and microphone, and loud speaker.

The programmes will be based on the general lines of those broadcast by the B.B.C. while following the method of the National Broadcasting Company of America in allowing a considerable portion of the entertainment to be provided and sponsored by different firms for advertising purposes. While the station will be leased to these firms for the evening, the proprietors will reserve the right to censor the programmes, and thus ensure their being kept up to the high standard that they have

decided to maintain. They have been singularly fortunate in securing the services of Mr. P. H. Dorte, who is well-known in wireless circles here, to act as Chief Engineer of the Bowmanville and associated stations. It is understood that the station proposes to relay the B.B.C. programmes at regular intervals, and the owners hope to erect a short wave transmitting station at an early date as yet another step towards linking-up the Empire by air. R.E.M.

(From our Montreal Correspondent).

Canada's new high-power station, CKGW, was "on the air" with its official opening programme on Monday, March 5. The elaborate apparatus which has been installed in the studios at the King Edward Hotel, Toronto, and the huge transmitting station at Bowmanville are now working, and broadcasting is taking place on a wavelength of 312.3 m. For this purpose the station is temporarily listed under the experimental classification with the call 9GW.

With the opening of the station it is expected that listeners in California and Florida will hear for the first time the voice of a Canadian announcer followed by an all-Canadian broadcast.

The New Condenser Microphone.

The equipment of the studio and broadcasting apparatus, unique so far as the Dominion is concerned and including the best which radio scientists can produce, is of unusual interest. Perhaps the greatest interest, however, is centred around the smallest object in the large and spacious studios. This is the microphone, the second of its kind to be operated on the Continent, and used, up to the present, only at the studios of WGY, Schenectady. The National Broadcasting Company are making arrangements to instal a similar instrument for use by WEA, but the Canadian station in this respect has taken the lead. To those who have become used to the familiar disc-shaped object which is an accompanying feature of all important public functions to-day the new instrument, bearing a close resemblance to the miner's safety lantern, seems to point to a revolutionary change in the principle of voice recording.

This is not far from the truth. With the old style microphone an arrangement of carbon granules which reacted in regular movement to the vibrations of the voice formed the basis of the instrument. In the new type these have been replaced by two plate condensers, placed just inside the circular receiving aperture. The outer of these plates is "earthed," while the inner, which is arranged so that it will be slightly flexible, is connected to the grids of three amplifying valves. These valves are set at the top of the microphone. When sound strikes the microphone it impinges on one of these plates, which moves slightly to varying capacity, giving the accurate reproduction, which is transmitted to the amplifiers. The instrument, too, is many degrees more sensitive and less selective than the old microphone.

The Studios.

The arrangement of the CKGW studios themselves and the installations of the control room are well worthy of notice. A special preparation has been used on the walls in place of the now obsolete curtaining to absorb sound and prevent the slightest echo. There is a large and small room, both of which can be used simultaneously and both of which can be controlled by a single announcer.

Aerial Unique in N. America.

Two telephone lines each 47 miles in length carry the record of the activities in the Toronto studio to Bowmanville, where the great aerial has been suspended from two steel towers. One of these lines will be used for the broadcast and the other for control. The towers stand 165 feet above the ground and 255 feet above the level of the nearby lake. Three phases of 60 cycle power are used for the transmitter and

(Continued in column 3, page 437.)

"The Calcutta Cup"

From Twickenham to Switzerland

TOGETHER with a few Rigger "fans," I have just finished listening to one of the finest broadcasts of the year—namely, the relay of the Scotland v. England International from Twickenham.

At 3.50 sharp (Swiss time) I tuned in Daventry 5XX, and silently our little group of Englishmen (incidentally one of my friends hailed from North o' Tweed) awaited the commencement of the great game. Within a very few moments came voices, and at once we were, in imagination, seated round the well-kept Twickenham field, at one with the huge crowd gathered there this Saturday afternoon.

"A lovely day," the announcer informs us, and we feel very pleased to think that the clerk of the weather has for once been kind to England. A tremendous crowd is assembled—in fact, a record one—and if the noise that is coming through my "Haut Parleur" is any criterion, we cannot doubt this statement, for the cheering is terrific as the players come running out on to the field. Then comes a momentary hush, followed by Captain H. B. T. Wakefield's voice telling us "They're off!" his next couple of words being absolutely drowned by the enthusiastic cheers of the crowd.

"Scotland has the ball, whilst in the back-ground comes a slow deliberate voice "Square three," and with the printed plan from the *Radio Times* spread out before us we are able to follow the exact position of the ball from moment to moment. England have now captured the "Pill" and are rushing down on the Scottish goal. Richardson passes to Taylor, Taylor to someone else, and we hear the excited cheering of the spectators in happy anticipation of an early score, but their hopes are dashed to the ground, for a Scot has regained possession, and the play swings back over the half-way line. Once again the tide turns, and once more the Englishmen are carrying the attack into their opponent's quarters, reaching beyond the twenty-five line, but the man holding the ball is strongly tackled, and with a hefty kick into touch far back into the English half the danger is removed from Scotland.

Next comes a short burst of mid-field play. "Play very fast indeed!" we are told, and we can quite believe it as we hear the staccato comments fly from the announcer's lips. "Scotland ball!—Scrum!—Scrum collapsed! comes the voice with machine-gun-like rapidity, and we chuckle as we picture the group of figures struggling on the ground in a medley of heaving legs, arms and bodies.

Suddenly comes a terrific burst of cheering. Somebody is dashing down the field—Young it is—now he has passed to Laird, who is going all out for goal, but the roar of cheering becomes so intense that we are unable to gather anything save that someone has scored. Ah! Captain Wakefield repeats it in a momentary lull, "Laird is over for England, with a magnificent try." First blood to the Southerners. Robertson takes the kick, but fails to convert, but England has now secured the lead with three points.

With little delay the game is resumed, and the ding dong struggle swings again from one side to the other. First the ball is inside the English half, with a Scotsman making towards the posts as hard as his legs will carry him, and we hold our breath, wondering—it is Macpherson—but he is tackled and brought down. Now we have a scrum down right on the English goal line, but with a great effort the invaders are pushed out, although the next second Scotland had almost scored with a dropped goal which only just missed the post.

Then comes a little humour, "Taylor is tucking his jersey in—it has just been pulled out!" and we smile amongst ourselves at this little incident. A bare eight minutes to go for

half time, and another very exciting burst of play in the English half. Scotland is pressing, but in vain, for the whistle goes with no further points gained by either side.

After a short *résumé* of the preceding half's play by the commentator, the game is resumed, this time with the lowlanders pressing.

Oh! a man is hurt—he is lying on the ground—he is sitting up, and is now being helped off the field, but the next second is returning and we hear the sympathetic cheers of the crowd. "Scotland *must* score!" says the voice in our ears, and we nod in agreement, and the Scotsmen on the ground seem to be doing their very best to accomplish this, for they are pressing strongly. Once more, however, the Englishmen rally, and the play is carried into the enemy's camp. Arnold now has the ball, and has made a mark right under his goal post. But the next moment comes another change; an Englishman has broken away and cheer upon cheer greets a spirited dash down the field only to have the ball snatched from him, and with a magnificent effort Palmer and Stark almost get over for Scotland.

Another man hurt—Stark—but he, too, is soon recovered and has taken his place once more. A change has now been made in the English team. Richards has been moved out on to the left wing, whilst Palmer has come in to left centre; we wonder what these changes portend.

Suddenly like a bolt from the blue comes another try for England, almost too quickly for us to realise it, and our Scotch comrades' hopes fall to zero. Now, with only five minutes to go, the excitement rises to fever pitch. Will Scotland succeed in breaking through? Alas! no further score is made and one of the most exciting games we have ever "seen" ends with England the winners of the famous Calcutta Cup by six points to nil.

In conclusion, atmospheric were entirely absent, and the ether was on its very best behaviour, Daventry simply roaring in on my loud speaker at terrific strength, so that we missed no single word of this astoundingly good broadcast. A tribute must certainly be paid to the splendid way in which Captain Wakefield carried out what must be no easy task, and to the skill of the engineering staff of the B.B.C., which enabled the whole event to be put "on the ether" with such wonderful purity and faultless clearness and our little group of exiles thanks our go-ahead Broadcasting Corporation for a top-hole afternoon's enjoyment.

J. D. S.

(Continued from Page 435.)

The water required has to be pumped up by special pumps owing to the height above the town. For the same reason an elaborate system of earth wires was buried beneath the aerial.

The wavelength is accurately controlled by means of a special quartz wave-meter.

The transmitter is of the same type as that used in Munich. The valves are air-cooled, and the whole transmitting apparatus is easily accessible.

The new station has just undergone a long period of exacting tests, especially as to electromagnetic field strength up to 25 to 50 km. distance. The elaborate apparatus required was taken from place to place in a closed car, and was then built up on a table some distance from it.

A. A. G.

We regret that owing to an error, the announcement of Messrs. Mullard, concerning the "Raleigh" receiver, did not appear last week according to the intentions of the advertiser. Readers are informed that the necessary coupon for this set appears on the last page of this issue.

The Far North Sun Worshippers

With the return of the Sun, after an absence of 135 days from frozen Ellesmereland, white men at Bache Peninsula and other posts scattered over this region of the Far North stopped work to join with the Eskimos in their ancient dance of welcome to the Sun. The weird native chant was accompanied by music from so modern a thing as an accordion, an instrument that has won the favour of the Eskimos.

The celebration was marked by another important event—the last of the special broadcasts from KDKA, Pittsburgh, of messages from friends and families (whether in Canada, U.S.A., or the far off British Isles) to the men at these outposts of civilisation. The members of the post gathered round the few receiving sets and listened intently for their special programme. There were songs—old songs they all knew—news of doings in the great world from which they had been cut off for so long, and then greetings and messages from relatives and friends.

The Eskimos were as much interested as, though more mystified than, the white men. The "Great Voice" which speaks to them from nearly 3,000 miles away to the south has never ceased to awe them, to make them humble in the face of accomplishments beyond their comprehension. But the radio voice, and especially that of KDKA, has brought them greater familiarity with English, and has greatly lightened the tasks of the missionaries and Government agents who have sought to bring civilisation into the native huts.

The special Westinghouse broadcasts to the isolated dwellers in the Arctic regions were inaugurated four years ago, and were placed on regular pre-arranged schedule three years ago. Each station—KDKA, Pittsburgh; WBZ-WBZA, Springfield, Boston, and KYW-KFKX, Chicago—transmits four programmes each winter on a schedule which is sent to every post in the Far North by the mail and supply boats in the summer. It will be summer again when the next mailboat enters the thawing North to bring supplies and packets of mail, and to take back to civilisation the reports on the winter's reception. But every autumn, when the boats return to southern waters, a larger and more thankful response comes from the far-away residents of the Arctic for the special Far North programme.

(Continued from Page 436.)

this is delivered at 2,200 volts. The aerial itself is unique so far as Canada is concerned, and has been copied from the type of transmission used by the British Admiralty. It is in all 80 feet long, divided into two sections of 40 feet each, separated by a heavy copper wire run to the ground. There are four wires running parallel in each section and separated by hoops which give it the name of "four wire hoop antenna."

Another interesting feature of the transmission apparatus is that water-cooled valves are used throughout. Fifteen thousand volts supply the plates.

CKGW is equipped, of course, with crystal control, which should prevent any possibility of running wide of its wavelength. With the power that is to be used any instability would undoubtedly prove disastrous for local radio users.

Out of courtesy to the United States the station has also included in its apparatus at Bowmanville a powerful S.O.S. receiver which will be kept tuned to shipping wavelengths and whenever distress signals are heard the station will close down. The regulations in the United States require, that all high-power stations shall use such a receiver, and though no similar law is in force in Canada, CKGW has seen fit to fall in with this requirement.

The new 20 kw. station in Lahti, near Helsingfors, will begin experimental transmissions in a few weeks (wl. about 1,600 m.).

Viâ Ether

OF the many thousands of "fans" who nightly prowls around the ether, judging by the magnitude of our mail-bag last week, but few failed to pick up in the early hours of Sunday, March 11, a special transmission carried out by the U.S.A. stations in connection with the arrival and reception of Colonel Lindbergh at Washington, on his return from a flight to Mexico and other South American States. It was my bad luck to miss it, although, as a rule, there is but little "worth while" on the air at any time which does not come to my net. On that evening I closed down just before midnight, and I could kick myself for losing one of the most interesting broadcasts which have taken place this year. Let me start by saying that of the reports received, roughly 99.9 per cent. did not pick up the transmission direct from the U.S.A. but from one of the German stations which re-broadcast it for the benefit of its local subscribers. How many of these actually put it "on the air" I am not prepared to say, but there appears little doubt that it was heard from Cologne, Langenberg, Münster, Stuttgart, and also, I believe, from Breslau, Hamburg, Berlin (Witzleben) and Königs-wusterhausen. Colonel Lindbergh's reception must have taken place at the Washington Naval Yard; the U.S.A. Secretary for War, and other notable officials, being present. References to the *Memphis* would point to the fact that this battleship was moored in the Potomac River, but the aviator arrived in his 'plane and was greeted by a salute of nineteen guns, the hooting of multitudinous syrens and the cheers of some 150,000 spectators, who, according to the announcer, "were standing on anything from a small piece of wood to the back of a chair." Troops in the shape of infantry and cavalry kept order, the latter on several occasions being called upon to push enthusiastic sightseers back to the side walks. It was curious at that hour in the morning to learn that the sky was blue overhead, that the weather was fine, and that the incoming 'plane could be seen, escorted by military aircraft, of which the hum was clearly heard. The relay by the German stations undoubtedly was a complete success, for there were but few reports of fading. So far as I can ascertain, they started at midnight, and, pending the reception of the American event, broadcast gramophone records to while away the time. Later, when Colonel Lindbergh, "after taking off his hat" to the crowds, had left the yard in a car in the company of his mother, dance music was transmitted from a New York studio. The reports received would tend to show that every kind of single and multi-valve set in the United Kingdom had given pleasure to its owner, from the rough hook-up, carried out by young Bill Smith on his mother's pastry-board, to the more elaborate super-het. To the 150,000 spectators at Washington mentioned by the commentator, I wonder how many pairs of English ears should be added; I am under the impression that it would run to a very large figure.

Many stations for the next few days will devote their transmissions to the works of Ibsen; of these some of the best programmes

will be given by the Norwegian studios. To-night (Friday, March 23) Bergen, at 6.30 p.m., opens its Festival with a broadcast of Acts 2 and 3 of *Peer Gynt*, as performed at its National Theatre. At 7 p.m. Oslo comes on the air with the same play. In the Frankfurt-on-Main programme at 7 p.m., to be taken from the Great Concert Hall, the entertainment organised by the Museum Society includes Dr. Richard Strauss' *Parergon (Symphonica Domestica)*, of which the pianoforte score for the soloist, I understand, is played by the left hand alone, to the accompaniment of a full orchestra.

Naples to-day, at 7.50 p.m., favours us with a performance of Donizetti's *Lucia di Lammermoor*, one of this composer's finest works, of which the story is based on Sir Walter Scott's famous novel. Berlin at 9.10 p.m. indulges in a Wild West programme of orchestral and vocal music, illustrating scenes in the life of the Red Skins. To-morrow (Saturday, March 24) this studio presents an all-Berlin entertainment, entitled *From Pankau to Potsdam*, which reviews in turn all the popular songs which at various times have dealt with different quarters of the German capital. By the growth of this city, the former village of Pankau and the town of Potsdam have now become suburbs of Greater Berlin. At 6.30 p.m. Munich offers us a Richard Wagner concert, to be followed by a short one-act musical play, *Brüderlein Fein*, by Fall; later, at 9.30 p.m. the Bavarian stations by landline will take the Vienna broadcast of popular music, including a descriptive humorous symphony, entitled *Sunday Afternoon on the Prater*. To Königsberg at 7 p.m. we may turn for a studio performance of Puccini's *Madame Butterfly*, of which, personally, I never tire.

Many correspondents have asked me the name of the French station to be found just below Cologne. It is that of Rennes, which for the past ten days or so is broadcasting on about 280 metres. Just above the Rhineland transmitter you will find Lille P.T.T. The latter station transmits long programmes of local manufacture; Rennes, on the other hand, takes the bulk of its entertainments from the Ecole Supérieure of Paris. P.T.T. Nord, as Lille is called, possesses a very energetic station director, who boasts of considerable initiative. Apparently, he is anxious to give his listeners a taste of the various fares provided by foreign studios. I am told that when *The Marriage of Figaro* was fed by landline to Brussels and the B.B.C. stations, he picked it up, *viâ ether*, and presented excerpts of this opera to his subscribers. From now onwards, I hear, you may count upon Lille at any old time, for a relay of continental broadcasts.

Leipzig at 7.30 p.m. on Sunday, March 25, should prove worthy of a visit, inasmuch as it is relaying from the New Theatre in that city a lyric drama in one act, *A Basso Porto* (In the Lower Harbour), a short and tragic operatic work by Niccolò Spinelli. It is of the Puccini "Tabarro" type of thriller, dealing with the Neapolitan water front. So far as I can trace—it is not often performed—it was produced at the

Cologne Opera House in 1894. Munich on that date, at 6.30 p.m., takes you over to the National Theatre for Wagner's *Flying Dutchman*; these broadcasts, as you know, if the Bavarian capital is not within your reach, may be heard through Nürnberg. At Stockholm, at 6.15 p.m., the studio presents an old opera, *La Dame Blanche*, by Boieldieu; erroneously attributed, in the original programmes, to Auber. Eugene Scribe's libretto was taken from Sir Walter Scott's novel, *The Monastery*. Boieldieu, whose friend Labarre, the harpist, had recently travelled in Scotland, was given by the latter some of his best chorus themes. *La Dame Blanche* was written nine years before the composer's death; it proved the culminating point of his career. On the following evening, at 7.45 p.m., it may interest you to turn to the same station for a studio performance of a one-act opera, entitled *The Power of Music*. The composer, Pierre Gaveaux, a Frenchman, born at Beziers in 1761, was a tenor singer, who, as conductor, wrote in all some thirty-five stage musical works, one of which *Leonore ou l'Amour Conjugal* was afterwards set by Beethoven, as his only opera, *Fidelio*. To its programme Hilversum has also added *Abu Hassan*, Weber's "one-acter" so frequently broadcast by the German stations. Monday, March 26, brings us from Vienna, at 6.30 p.m., a relay from the Great Concert Hall in the Austrian capital, of the Franz Schubert Commemoration Festival. At Radio Paris at 8.30 p.m. we also find an interesting mixed programme, which includes a Russian choir and a recital of popular English songs by Mdlle. Sivry.

The regular weekly operatic relay effected by Kattowitz from its local opera house, and taken by the other Polish stations, covers a large repertoire; on March 27, at 6.20 p.m., we are to be given an operatic work which I feel sure has not hitherto been broadcast, namely, *Casanova*, an *opera buffa* by Ludomir Rózycki, produced at Warsaw in 1923. It depicts three episodes of the adventurer's life—he is pictured as writing his memoirs in his old age. As he ends the manuscript his heart stops beating and the pen falls from his hand.

A more familiar opera, Rossini's *William Tell*, will be heard from Radio Paris at 8.30 p.m. It is to be interpreted in the studio by artists from the Paris Grand Opera House.

Fail not to listen to either Frankfurt or Stuttgart on Wednesday, March 28, as the former station on that date advertises a performance of Verdi's *La Traviata* from its local opera house, with the famous soprano, Margarete Salvi, of Milan, in the title rôle. As an alternative, if you prefer it, you may hear from Königsberg Rossini's *Barber of Seville*, taken from the East Prussian provincial theatre.

Back again to Vienna, we must go on Thursday, March 29, at 6 p.m., for Korngold's opera, *Das Wunder der Heliane*, another relay from the State Opera House. It is a mystery play which has achieved considerable success on the Continent. Korngold, who was born at Bruenn, in 1897, composed a pantomime, *The Snow Man*, at the age of eleven; it was actually produced in Vienna in 1908.

JAY COOTE,

Dominion and Foreign Broadcasting Intelligence

CANADA

(From a Correspondent.)

Daily Programmes from 2LO

CFCA, at Toronto, is continuing to give its listeners a daily service of English programmes by relaying the programme from 2LO, London, through 5SW. The colder weather experienced in Ontario recently has made the broadcast come through better and sound much clearer when put "on the air" from Toronto. In addition, 2FC, Sydney, Australia, has gone on the air from CFCA during early morning hours, beginning at 5 a.m. Both the re-broadcast programmes have brought forth an avalanche of letters, not only from near-by towns but from distant points in the United States. Everywhere listeners are writing in expressing their satisfaction with the broadcast. Many state that it brings back old times to hear again the chimes from Big Ben. Several have written that they have not heard a voice from London in fifty years.

Improving Reception Conditions

It is understood that the estimates brought forward in the House of Commons at Ottawa include a grant of £38,000, which is to be allocated for the purpose of providing Funds to go towards the improvement of broadcast reception conditions in Canada for listeners.

AUSTRIA

(From our Vienna Correspondent.)

Coming Events

On Thursday, March 29, we shall have the relay from the State Opera of Erich Wolfgang Korngold's *Wunder von Heliane* and Bach's *Passion Music* relayed from the Concert House on the following evening. On Monday, April 2, Wagner's *Parsifal* will be relayed from the State Opera, and Beethoven's "Christ on the Mount of Olives" oratorio on Thursday, April 5—Green Thursday, as it is called here, or Holy Thursday, as we call it in England.

Relay Developments

Experiments are already in progress for the transmission of the Vienna and Budapest programmes, and *vice-versa*, to each capital over the new distance cable line, and it is expected that in April it will be possible to send programmes from one to the other as a regular thing. Budapest has now been able to resume its former wavelength of 555.5, because Milan, after the recent Prague international radio conference, abandoned 549 for 526.3, which is sufficiently divided from Budapest's 555.5 to obviate confusion.

Sunday "Jerks"

The Vienna radio gymnastic lessons by Herr Viktor Krantz at 9 a.m. each Sunday morning promise to be one of the most popular and successful innovations of Ravag, as regards Austria, of course, for they have been given in Germany for some time past.

FRANCE

(From our Paris Correspondent.)

Radio Measure Modified

The measure passed by the Government to regularise broadcasting from French stations until definite legislation is passed was modified the next day by a Senate decision that it was going too far to insist on the destruction of new apparatus and that special permission for its operation could be given by a Cabinet decree. The measure was described by the Premier as necessary for State control over broadcasting in France.

Popularity of Old Time Dance Music

The wish of many listeners for an hour or two of polka, mazurka, waltz and quadrilles dance music was responded to by Radio-Paris some time ago, and now there is another growing desire for an occasional programme of this music which "thrilled our grandmothers." All our modern youths and maidens who dance, says a French paper, are not, it seems, fox-trot and tango fanatics.

Radio Maroc

Rabat (Morocco), reception of which by valve listeners in different parts of the north of France is reported, is another of those stations which have adopted the metronome as an aid to identification. "Ici Radio-Maroc," the announcer calls, and the station is using a wavelength of between 412 metres and 415 metres. At any rate, it is usually just above Berne (411 metres).

GERMANY

(From our Berlin Correspondent.)

Telepathy "Guesswork"

Dr. Herzberg, one of the two principals in the experiment in telepathy conducted by the Funkstunde last October, has admitted that the experiment has yielded only negative results. As stated in *World-Radio* of February 3, no attempt was made, in half of the experiments, to transmit anything; yet, equally successful results were obtained in all cases. In fact, one of the dummy "transmissions" was more successful than one of the genuine efforts. Count Arco, who does not believe in telepathy, obtained as many correct replies as his collaborator. Over four thousand listeners took part in the experiment, which, owing to the ingenious, sincere, and thorough way in which it was arranged, leaves little doubt that their answers were unintentional guesswork.

Zeesen's S.W. Transmitter

In reply to many enquiries, it is stated that (as already mentioned in *World-Radio*) it is intended to instal a shortwave transmitter at Zeesen. For the present, however, the experimental station at Döberitz will continue operations, and during this month it has changed its wavelength from 37.8 m. to 67.65 m., on which it transmits on Mondays, Wednesdays and Fridays between 10 and 11 a.m. G.M.T. and 6-7 p.m. In the evening it has also transmitted during this month on 105 m., between 7.20-8.20 p.m. Each hour is divided into alternate periods of five minutes morse and fifteen minutes telephony.

HOLLAND

(From our Correspondent at The Hague.)

Jewish Transmissions at Huizen

It is stated here that arrangements are being made for one of the principal Jewish educational societies to have the use of the Huizen transmitter for one evening per week. This is the outcome of the engagement last week of Rabbi de Hondt for a wireless lecture on the Jewish Young People's newspaper which he is to edit, and which will shortly appear.

ITALY

Change of Quarters

The head offices of both Milan and Naples broadcasting stations are, according to *Radi-orario*, to be transferred. Owing to the increase of staff, both technical and artistic, and also of the growing amount of business, new premises

which cover an area of 500 square metres, comprise the offices of the president and management, and also the technical, artistic, propaganda, administrative and news services.

Genoa and Turin Stations

Another important matter has been the acquisition of sites for the stations at Genoa and Turin. For Genoa station Granarolo has been decided upon as being the most suitable place for putting up the station house, the cost of which will be four hundred and fifty thousand lire. Torre dell'Eremo, which, being over 2,000 feet above sea level is the highest point of the neighbouring hills, has been considered most suitable for Turin station. The choice of such a site will enable Turin to be heard at a great distance. Both for Genoa and Turin, aerials are to be of the tower type with iron trellis work. The towers for Genoa will be 195 feet high, and those for Turin 227 feet.

NORWAY

(From our Bergen Correspondent.)

S.W. Transmitting in the Mountains

Owing to hurricanes and heavy snowstorms, breakdowns of the wires between Bergen and Oslo occur rather frequently during the winter, as it must be remembered that these lines stretch some 300 miles through the snow regions up to an altitude of about 4,000 feet. Recently the Telegraph Administration has experimented with short-wave transmitters from different stations on the railway to see whether there is a possibility of their practical use in case of emergency. It has been stated that the thing can be done. If, for instance, the wires break at Usteoset (about halfway between Bergen and Oslo) a short-wave sender is put into action and the signals received at Voss (about halfway between Usteoset and Bergen). From here another short-wave transmitter is operated and signals received in Bergen. Similar arrangements can be made on every station of the railway, a practical solution of a hitherto very difficult problem.

(From our Oslo Correspondent.)

Ibsen's Week.

OSLO, March 16

Theatres and broadcasting are given up to Ibsen this week. In every town his statue is already adorned with wreaths, and the newspapers vie with each other in unqualified adoration. Plays will be relayed from the theatres in Oslo and in Bergen; lectures will be given in the studio, and numerous speeches in his honour will be made at festive gatherings. Two of his plays will be broadcast by leading artists—*Hedda Gabler* and *The Doll's House*. Neither of these requires much scenic display, and both are therefore well adapted for broadcasting. *Brand* will be given in part. The ceremonial beside Ibsen's grave in Oslo will be broadcast on the morning of the 20th. The festal meeting held in the "Aula" of the University comes in the evening.

SWITZERLAND

(From a Correspondent.)

Lausanne's Studio's Opening Ceremony

The new Lausanne studio will be inaugurated on Saturday, March 24, at 8.30 p.m., when a special birthday programme will be broadcast. The next day, Sunday, at 5 p.m., a programme, to include "The Winegrowers' Festival," will be broadcast. The station will be announced in future as "Emission de la Société romande de radiophonie" at the opening and close.

Wireless Step by Step

By "DICTRON"

XLVIII.—Care and Maintenance of Accumulators

THE proper care and maintenance of accumulator batteries requires no particular technical knowledge, and is in itself a simple matter providing that certain precautions are taken against the diseases which assail batteries of this nature.

The most common complaint from which accumulators suffer are the following:—sulphating, misshapen plates, short circuit due to the introduction of some foreign body or a particle of active material falling between the positive and negative plate, internal discharge, the separation of the active material from its supporting lead plate.

Sulphating

Let us examine in turn the indications, causes and remedies of each of these troubles. The circumstances which may cause sulphating are—discharging the accumulator beyond the point where the voltage begins to fall rapidly, short circuiting, allowing the battery to remain unused and in an uncharged condition for any considerable length of time, allowing the acid solution to fall to too low a specific gravity, or the introduction of impurities in the acid or distilled water used to compose the solution.

When an accumulator is completely discharged, all the active material on the positive plate, which, incidentally, is of a brown colour as opposed to the grey colour of the negative plate, becomes sulphate of lead. If it is allowed to remain in this condition, the sulphate of lead will turn into a hard insoluble substance which cannot be removed as can the normal sulphate of lead resulting from a normal discharge. The formation of this substance is referred to as "sulphating." This must not be confused with the normal formation of sulphate of lead and consequent reversion to lead peroxide which takes place with discharge and charge under healthy conditions. The presence of sulphate in a cell is indicated by white spots on the plates. In extreme cases it may take the

form of a white substance between the plates. If the container of the cell is not transparent and does not therefore permit of the white sulphate spots being observed, the condition can be recognised by a fall in the normal capacity of the battery, overheating on discharge and general inefficiency.

As regards remedies. If sulphating is taken in time, when it is only slight, it may be remedied by a series of long charges at a low rate. The normal rate at which a healthy battery should be charged is one-tenth of its ampere hour capacity. It may be as well to mention at this point that some manufacturers of accumulator batteries indicate two capacities in the instructions on the side of the battery or accompanying it. One is the rate of intermittent discharge and the other the rate of constant discharge. Intermittent discharge generally means the use of the battery for such purposes as supplying the spark for an internal combustion engine when the circuit is closed intermittently by a rotating commutator. In our study of batteries as applied to wireless receivers, we are not concerned with anything but the constant discharge of the battery. The ampere hour capacity on constant discharge is generally half that of intermittent discharge. The capacity at constant discharge is sometimes referred to as the "actual capacity." The rate at which a sulphated battery should be charged as a curative measure may be a twentieth or less of the actual ampere hour capacity. The above remarks refer only to internal sulphating on and between the plates. Sulphating of the external terminals and links of the battery may also take place. This is generally due to a film of the acid solution becoming deposited on the top of the container and therefore in contact with the terminals. Care should therefore be taken not to allow the acid or distilled water to slop over when filling the battery, and to prevent violent gassing when charging, which may cause particles of solution to be shot up through the vent holes on to the top of the container. This external sulphating is not serious and can be

easily remedied by carefully cleaning and smearing the terminals and links with vaseline.

Misshapen Plates

The plates which contain the active material are formed of thin sheet lead. Lead is a substance which has no elasticity, and consequently if once bent it does not reassume its normal shape. The chemical action which we have previously described is accompanied by the generation of heat. If this chemical action becomes uneven over the surface of the plate, it will tend to misshape the plate, due to greater expansion at one point than at another. When a battery is discharged, the active material expands in the process of becoming sulphate of lead. This expansion causes pressure on the lead plate to which the active material is attached, and if discharge is too prolonged or is uneven over the surface of the plate, may cause it to buckle or even break. The formation of sulphate on a plate will cause an uneven distribution of heat because the hard sulphate has no conductivity and is in fact an insulator. Even at low rates of discharge, a battery which is badly sulphated may cause buckling on the plates. Where no sulphate is present, the chief causes of misshapen plates are excessive discharge or too long a discharge at the normal rate. Excessive rate of charging may similarly cause buckling of the plates because when the cell is being charged the acid generated at the surfaces of the plates mixes with the water which was formed on discharge and heat is generated. If the rate of charge is too high or charging is prolonged beyond the point where the battery is fully charged heat may develop such proportions as to cause warping of the plates. The buckling in itself does not impede the ordinary action of the cell but it tends to loosen the hold of the active material on the surface of the lead plates which will tend to reduce the capacity of the cell and may cause short circuiting by pieces of active material falling from the surface of the plate and becoming wedged between a positive and negative plate. If buckling is excessive it may cause the plates actually to touch one another and set up short circuit.

The remedy is beyond the capabilities of the ordinary amateur: it is a case for the reconditioning of the battery by the manufacturer since it entails dismantling, straightening of the plates and replacement of the active material.

Secret Wireless!

THE chief, alleged, disadvantage of radio communication is the lack of secrecy in the transmission of speech and telegraph messages. What is the use, it is said, of sending a message to your confederate or agent if you broadcast that message to the whole world? All being fair in love or war, what is there to prevent your enemy or rival setting up a crystal set—and beating you to the trysting place? Very fair questions, these, and very natural ones, especially to those who have not yet paid for their radio licences!

Codes

Wireless has made amazing strides during the last few years. The chief method of obtaining secrecy for radio messages during the war was by the "straightforward" use of codes. Nothing very difficult about this, except that it afterwards transpired that the special decoding departments of both sides became so expert that even the most complicated cyphers were often solved.

Early Methods

An early method of obtaining greater secrecy in the transmission of radio messages was by the alternate use of various wavelengths, the change-over from one wave to another being signalled by a combination of letters added to the message. Another method was the shrouding of the message with a perfect mush of "man-made jamming" and atmospherics which could be eliminated only (perhaps!) at the desired receiving station. These systems were used

with success, towards the end of the War, by both sides, though it appears that in spite of these precautions a great deal of information was filtered out by the highly efficient decoding departments. Even if the messages were unintelligible, it was possible to locate their source by direction finding. From this information the central office could draw certain lines on a map, which would intersect on the exact spot from whence the signal came. Official history tells us that by such means the whereabouts of the German Fleet was known to the British Admiralty—such information resulting in the Battle of Jutland. And, of course, since the War this highly-specialised branch of "detection" has been used by the civil aviation lines. A civil aeroplane flying across the Channel in a fog has merely to ask the Croydon air station by radio-telephone for his bearing to obtain the information with great accuracy within sixty seconds.

Directional Wireless

Directional wireless telegraphy is no new invention; Senatore Marconi was experimenting (with occasional success) in the distant days of coherer and magnetic-detector receivers, before valves were thought of. The wonderful "Beam" system is the final result of these early experiments, ultimately successful through the understanding of some of the problems of the ultra-short wavelengths—or, as we should now call them, ultra-high frequencies. One of the chief losses, both in power and secrecy, of early forms of directional radio-

telegraphy was the heavy leaking of "juice" in the opposite direction to which the signal is sent. The polar curve (contour map of field strength) of the strength of signals around such a station resembled a cottage loaf when drawn on paper. If you draw a "cottage loaf" on paper (a figure 8 with a small top), the nubble on the top of the loaf would represent the unwanted radiation of the signal behind the transmitting station. This difficulty has now, however, been largely overcome.

The Beveridge System

Directional receiving hardly comes into the category of "secret wireless," yet it must be mentioned as a kind of complement to the "Beam" system. The Beveridge system was successfully used by the B.B.C. in early experiments at relaying American broadcasting stations. It consists chiefly of a very long low aerial—the length being a multiple of the wavelength of the signal to be received—pointing in the direction of that station. The sensitivity in various directions of such a station resembles the aforementioned cottage loaf, with the positions of transmitter and receiver reversed.

Secret Radio Telephony

Secrecy in radio telephony may be more or less obtained in several ways. The simplest form (which can also, of course, be applied to telegraphy) is a system of "wobbling" the wavelength of the transmitter. This can be done by the continual alteration of the tuning of the transmitter, the work being done by some form of motor-driven eccentric wheel. A similar alteration of tuning has to be done, of course, at the receiving end. Before the sending

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Practical Searching Hint

FIXED CONDENSERS FOR SHORT WAVES

THE two fixed condensers which are of the greatest importance in the short-wave receiving set are that which is placed in series with the aerial and that which insulates the grid of the rectifying valve from direct current potentials but allows oscillating impulses to pass. Each of these has to deal with enormously high frequencies, and it is therefore essential that they should be of a type that will reduce losses to a minimum. In these two positions the writer prefers to use condensers with a dielectric of air. If there is plenty of room in the set variable condensers of good quality may be used for the purpose. By making small brackets they can be mounted upon the baseboard and once the best setting has been found they may be left untouched. In most short-wave receiving sets, however, there is not room enough to use variable condensers without unduly cramping the components upon the baseboard. Instead we may employ air dielectric fixed condensers which are very easily made. Most readers probably possess one or two old variable condensers which are no longer in use. Using a small piece of ebonite as a base it is easy to build up from the fixed vanes, the spacing washers and the brass pillars of these compact fixed condensers which answer the purpose admirably.

Those who are fond of workshop jobs will have no difficulty in making neat condensers by cutting from sheet zinc or brass oblong plates measuring 2 1/4 inches by 1 1/4 inches. If one-sixteenth inch spacer washers are used and the plates are so arranged that they overlap by 1/8 inch, then three plates on one side and two on the other will give a capacity of approximately .0001 microfarad. By doubling or trebling the number of plates the capacity of the condenser is doubled or trebled. Zinc is perhaps the best material to use for the plates. It is very easily cut with tin shears and after they have been trimmed up and drilled for the supporting pillars the plates can be straightened by placing them on a smooth metal surface and pressing them hard with a very hot flat iron. As a rule the aerial series condenser will have a capacity of .0001 microfarad (two plates meshed with three) and the grid condenser a capacity of .0002 or .00025 microfarad (four plates meshed with five or five plates meshed with six). It need hardly be said that the ebonite used for the base of the condenser should be of the very best quality and that all superfluous material should be cut away. This can be done after the holes for the pillars have been drilled by "honey-combing" the ebonite with a 1/4-inch or 3/8-inch drill, leaving just sufficient solid material to ensure the necessary strength.

(Continued from page 440.)

of each secret message or speech, the two wavelength-control motors have to be synchronised. The weakness of this system is that the whole of a message would probably be picked up by a flatly tuned receiver close to the transmitting station. And in addition, the transmitter would use up a large number of valuable wavelengths.

A very good secret system now being investigated is a development of the war-time "man-made jamming" on top of the transmitted signal. In modern practice the "jamming" takes the form of a number of strong audible notes of various frequencies superimposed on the transmitted modulations of speech. On an ordinary receiver the signal would sound like many notes of a mouth organ being played at the same time with a kind of rustling noise in the background. At the "official" receiving station several very sharply tuned filter circuits eliminate the interfering notes and speech of quite fair quality is "served up."

Yet another secret system, probably the most successful, is used in trans-Atlantic telephony. Speech is sent out on one set of side-bands of

SHORT WAVE STATIONS

M.	Kc.	Station
85	3520	Zürich (Radio Club) EH9XD.
70	4285	Springfield (Mass.) WBZ.
70	4285	Vienna (OHK2). (Transmits on SUN. for 15 minutes after each hour from 5 p.m. till midnight.)
67.65	4434	Daberitz (AFK) 5 kw. MON., WED., and FRI., 10-11 a.m. and 6-7 p.m.
66.04	4542	Los Angeles (California) 6XAL from mdnt. 0.5 kw.
66.04	4542	Cleveland (Ohio) 8XF, 0.5 kw.
65.4	4587	Newark (N.J.) 2XAQ, .05 kw.
65.18	4600	Newark (U.S.A.) WAAM, 0.5 kw.
65.18	4600	Newark (New Jersey), 0.5 kw. 2XBA (S.W. of WAAM). Transmits between 12 mdnt. and 5 a.m. TUESDAYS, THURSDAYS and SATURDAYS. .05 kw.
65.18	4600	San Diego (KFBC).
64	4687	Richmond Hill (New York) WABC, 0.5 kw.
62.5	4800	Pittsburgh East (Westinghouse Electric) KDKA (U.S.A.).
61.06	4913	Council Bluffs (Iowa) 9XU. 0.5 kw.
61	4918	Paris (Radio LL) GC.
60	5000	Russia, RFN (irregular).
59.96	5003	Bound Brook (N.J.) 3XL, 30 kw.
56.7	5291	Nauen (AGJ) occasionally after 6.0 p.m.
54.02	5553	Columbus (Ohio) 8XJ.
54.02	5553	Coney Island (N.Y.) 2XBH, 0.15 kw.
54	5555	Brooklyn (N.Y.) WGV, from 11.0 p.m.
53.54	5600	Portland (Oregon) 7XAO, 0.1 kw.
52.05	5763	Harrison (Ohio) 8XAL, 0.5 kw.
52.02	5767	Cincinnati (Ohio) WLW. Relays medium wave transmissions from 11.50 p.m. G.M.T. Except SUN. and FRI.
50	6000	Karlsborg (Sweden).
50	6000	Russia, RFN. TUES., THURS. and SAT., 12.0 noon and 1 p.m.
45	6666	Rome (Italy) IAX.
44.4	6696	Vienna, 0.24 kw.
43.35	6920	New Brunswick (N.J.) WIZ. Experiments occasionally from 11 p.m.
43	6976	Pittsburgh East (Westinghouse Electric) KDKA.
40.20	7463	Lyon (Rhône) YR. Daily except SUN. from 4.30 to 5.30 p.m.
38	7894	Agen.
37.5	8000	Ibarakiken (Japan) JHBB.
37	8103	Radio Vitus. WED., FRI. and SUN., 9.0 p.m. to 10.0 p.m.
33	9090	San Francisco (Cal.) 6XAR. from mdnt.
32.9	9118	Perth (W.A.) 6AG. 11.0-11.30 a.m.
32	9376	Zürich (Radio Club) EH9XD.
32	9375	Melbourne (3LO). SUNDAYS, 8.30 p.m. to 8.30 p.m. G.M.T.
32	9375	Johannesburg (JB).
32	9375	Berne (Switzerland) EH90C.
32	9375	Paris, Eiffel Tower. Time Signal 7.56 a.m. and 7.56 p.m.
32.5	9231	Sydney (2BL).
32	9375	Detroit (Mich.) 8XAO WJR, 0.75 kw.
31.4	9564	Schenectady (General Electric Co.), N.Y. 2XAF, 10kw. (Aer.) SUN., WED. and FRI., No transmission. MON., 11.0 p.m. to 4.0 a.m. TUES., 11.0 p.m. to 6.0 a.m. THURS., 11.0 p.m. to 5.30 a.m. SAT., 11.25 p.m. to 5.0 a.m., 0.5 kw.
31.93	9395	Bandoeng, Java (Radio Service) ANE. TUES. and THURS., 4.40 p.m. to 6.40 p.m. (G.M.T.).
31.25	9600	Bergen.
31.5	9523	Helsingfors, 0.3 kw.
30.91	9706	New York (2XAL). TUES., 12.0 midnight to 5 a.m. (WED.). WED. 12.0 midnight to 2.0 a.m. (THURS.). FRI., 12.0 midnight to 4.0 a.m. (SAT.). SAT., 12.0 midnight to 3.0 a.m. (SUN.), 0.5 kw.
30.2	9934	Hilversum, Holland, PCJJ.
30	10,000	Bergen (Norway) LGN.
28.5	10,526	Sydney (2FC).
26.92	11,144	New York (2XAG).
26.8	11,194	Pittsburgh (8XK). MON. and THURS., 7 p.m. to 9 p.m., 40 kw.
24	12,500	New York (2XAB).
24	12,500	Chelmsford (SSW, 15 kw. Aer.) DAILY (except SAT. and SUN.) from 12.30-1.30 p.m. and from 7 p.m. to 11 p.m.
22.99	13,049	Houlton (Maine) 2XAA. after 11 p.m.
22.8	13,158	Fort Wayne (Indiana) WOWO, 1 kw. after 11 p.m.
22.2	13,392	Vienna, 0.24 kw.
22.1	13,574	Richmond Hill (N.Y.) 2XE (S.W. of WABC) after 11 p.m.
21.96	13,661	Schenectady (General Electric Co.) 2XAD SUN., 10.30 p.m. to 3.30 a.m. MON., 8.0 p.m. to 9.0 p.m. TUES., 8.0 p.m. to 7.0 p.m. WED., 11.0 p.m. to 3.30 a.m. THURS., 8.0 p.m. to 9.0 p.m. FRI., 6.0 p.m. to 7.0 p.m., 11.0 p.m. to 4.0 a.m. SAT., No transmission.
18	18,666	Kootwijk (Holland) PCLL. WED., 2.0 p.m. to 4.0 p.m. and occasionally on MON. and FRI.
17.2	17,441	Nauen (AGC).
17	17,647	Bandoeng, Java (Radio-Malabar) ANH, 30 kw. SAT., 12.40 p.m. to 2.40 p.m.
16.02	18,728	Rocky Point (Long Island) 2XG. MON. and FRI., after 5.0 p.m.
15.93	18,832	Bandoeng, Java (Radio Service) ANE, MON., 12.40 p.m. to 2.40 p.m.
15.5	19,354	Nancy (France).

the carrier wave only, and the carrier wave itself is suppressed. As the carrier wave is not actually transmitted, the radiated side bands themselves cannot be reformed into speech at the receiving end until the carrier wave is introduced—by a form of local oscillator. It is therefore not possible to hear the speech on ordinary crystal or valve sets.

B. H.

Last Week's Log

By "THE SEARCHER"

IT has been a period of curious variations as regards both the weather and wireless reception. At the moment of writing, for instance, the temperature out of doors is nearly 30 degrees higher than it was at the same hour just a week ago. Big fluctuations in either thermometer of barometer—or both—usually react upon reception conditions, for they are apt to produce outbursts of atmospheric interference. Certainly it was so during the period now reviewed. Atmospherics were at their worst, particularly upon the short waves, during the cold snap at the beginning of the week; but they have thrust their unwelcome presence upon us on most nights to some extent and they have been noticeable upon all wave bands. Whilst the fine driving snow that came was actually falling, I found reception almost impossible with the outdoor aerial in use. The interfering noises then heard were not due to genuine atmospherics, though the results were precisely the same as if they had been. The aerial was charged up by the fine snow brushing against it; a similar phenomenon may be observed sometimes when there is driving, misty rain. A change over to an indoor aerial made matters far better. This tip is worth noting, for short-wave signals are often almost as well received with a frame or some other form of indoor aerial as with an outdoor wire.

Atmospherics and the like apart, conditions for reception have been wonderfully good on several nights on both the broadcast band and the upper wavelengths. Most of the German stations have been excellent, whilst both Kattowitz and Prague with their fine signal strength and first-rate quality have been really worth listening to on the loud speaker. Brussels and Vienna I do not find quite so good as they were a short while ago, and Frankfurt, usually one of the most reliable of stations, has suffered a good deal from interference. As there is no station shown in the lists as using a fundamental likely to cause a heterodyne with him, a harmonic of one of the long wave transmitters may be responsible. Milan, Rome (when not interfered with), Toulouse, Paris *Petit Parisienne* and Madrid have all been good.

When favourable periods presented themselves, as they did on one or two nights, the reception of American stations on the broadcast band was extraordinarily good, nearly as good, in fact, as it was early in the year. WGY, WPG, WBZ, WIOD, WEAF and WJZ are about the best of the medium-wave trans-Atlantics, though there are many others that are worth trying for when conditions are favourable. The best time, as a rule, is from 2 a.m. onwards, though I have had American stations before midnight when some of those on this side had obligingly closed down.

The shortwaves have been even more variable than the medium and long. The giant 2XAF has, in fact, been at only telephone strength on some nights, though producing respectable volume from the loudspeaker on others. KDKA has not been up to strength on 62.5 metres, and I can never make anything of his 26 metre transmission, though this is received pretty well in some localities. Again, 2XAD is almost always a poorish signal at night time with me, but others report that they hear him quite satisfactorily. PCJJ is not quite what he was before his plant was moved. ANE I have heard well, though ANH when I tuned him in the other afternoon had not his wonted quality. Both WLW and 3LO have provided good reception at times. A very powerful transmission in French, which I take to be the Eiffel Tower's shortwaver conducting tests, has been picked up on several days during the mornings and afternoons. The set of coils at present in use are newly made, and have not yet been calibrated. The wavelength, however, appears to be approximately 32 metres. Signal strength and quality are astonishing.

Continental Programme Events

Sunday, March 25.

- 6.15 p.m. Stockholm.—"The White Lady" (Boieldieu).
 6.30 " Leipzig.—"In the Lower Harbour" (Spinelli).
 6.30 " Munich.—"The Flying Dutchman" (Wagner).
 7 " Berlin.—"Die gold'ne Meisterin" (Eysler).
 7 " Hamburg.—Passion music.
 7 " Königsberg.—"The Village without a Bell" (Künneke).
 7 " Stuttgart.—Chamber music.



Actors in the "Old Westphalian Rustic Wedding" (see Langenberg, March 28, 7.15 p.m.).

- 7.30 p.m. Cracow.—Concert.
 7.30 " Frankfurt.—Symphony concert.
 7.50 " Hilversum.—"The Seasons" (Haydn).
 8.15 " Brussels.—Concert.
 8.45 " Copenhagen.—Johann Strauss programme.
 9.30 " Oslo.—Langeleik recital by M. Ola Brenno.

Monday, March 26.

- 5.30 p.m. Danzig.—Solemn Mass (Beethoven).
 7 " Copenhagen.—Danish composers: H. P. Holst.
 7 " Hamburg.—"Don Juan and Faust"; music by Siegfried Scheffler.
 7.15 " Langenberg.—Schubert programme.
 7.15 " Frankfurt, Stuttgart.—"Five microphones evening": Dialect exchange between the towns of Frankfurt, Cassel, Stuttgart, Mannheim and Freiburg.
 7.30 " Kattowitz, Warsaw.—Chamber music.
 7.30 " Basle, Berne, Geneva, Lausanne, and Zürich.—Symphony concert.
 8.30 " Copenhagen.—Richard Wagner programme.
 9.15 " Hilversum.—"Abu Hassan" (Weber).

Tuesday, March 27 (60th birthday of Maxim Gorki).

- 6.30 p.m. Kattowitz.—"Casanova" (Rózycki).
 " " Berlin, Königsberg.—"The Lower Depths" (Maxim Gorki).
 7.15 " Frankfurt, Stuttgart.—Popular Russian evening, including works by Maxim Gorki.

- 7.45 p.m. Rome.—(1) "The Legend of the Seven Towns" (Gasco); (2) "The Baroness of Carini" (Mulè).
 8.30 " Radio-Paris.—"William Tell" (Rossini).
 10.10 " Madrid.—"La Traviata" (Verdi).

Wednesday, March 28.

- 6.30 p.m. Frankfurt, Stuttgart.—"La Traviata" (Verdi).
 7 " Copenhagen.—Swedish programme.
 7 " Königsberg.—"The Barber of Seville" (Rossini).
 7.15 " Langenberg.—"Old Westphalian Rustic Wedding" (Wagenfeld).
 7.20 " Breslau.—Schubert evening.
 8.30 " Brussels.—Concert.
 8.30 " Radio-Paris.—Beethoven's Mass in D

Thursday, March 29.

- 7 p.m.—Copenhagen.—"Prince Igor" (Borodin).
 7.5 " Munich.—"The Spanish Nightingale" (Fall).
 7.15 " Cologne, Frankfurt, Langenberg.—Hindemith evening.
 7.15 " Stuttgart.—Symphony concert: Mozart's works.
 7.30 " Berlin.—Chamber music.
 8 " Milan.—"Carmen" (Bizet).
 10.10 " Madrid.—Concert, including "La Serva Padrona" (Pergolese).

Friday, March 30.

- 6.25 p.m.—Hamburg.—"The Flying Dutchman" (Wagner).
 7 " Berlin.—Schubert evening.
 7 " Munich.—Special programme to mark the fifth birthday of the Deutsche Stunde in Bayern.
 7 " Copenhagen.—"Elverskud" (Gade).
 7 " Königsberg.—Symphony concert.
 7 " Oslo.—Symphony concert.
 7.10 " Breslau.—"Hanni geht tanzen!" (Hanni goes dancing).
 7.20 " Stockholm.—"Fidelio" (Beethoven).
 7.30 " Frankfurt.—"Von Morgens bis Mitternachts" (Georg Kaiser).
 7.50 " Naples.—"A Masked Ball" (Verdi).
 8.15 " Leipzig.—Symphony concert.
 9 " Copenhagen.—Chamber music.

Saturday, March 31.

- 7 p.m.—Copenhagen.—Old dance music.
 7 " Hamburg.—"The Enchanted Castle" (Millöcker).
 7.10 " Berlin.—"Tragaldabas" (d'Albert).
 8 " Brussels.—"The Valkyrie" (Wagner), 1st and 3rd acts.
 8 " Rome.—"The Pearl Fishers" (Bizet).



A scene in "The Flying Dutchman" (see Munich, March 25, 6.30 p.m., and Hamburg, March 30, 6.25 p.m.).

Dublin's Symphony Orchestra

IN October last some enterprising members of the Dublin public laid before their local Station Director proposals by which it was suggested that the Broadcasting authorities should take their augmented orchestra—with which they were accustomed to perform special orchestral programmes—out of the station and put it into a public hall, where it would be brought up to full symphonic strength by the interested citizens. By this means it was hoped, amongst other things, to—

- (1) provide first-class concerts at very low prices of admission and in this way popularise good music in the city;
- (2) improve considerably the quality of the programmes for the licence holders;
- (3) provide a good permanent symphony orchestra for Dublin; and
- (4) contribute to the success of the existing orchestral associations by developing the love of orchestral music amongst the people.

The first of these co-operative concerts took place at the Metropolitan Hall, Dublin, on November 26, when a first-class orchestral programme, including the First Symphony (Beethoven), was presented by Mr. Vincent O'Brien, the popular Musical Director of the station. There were three soloists as well as community singing. The concert created a furore amongst the people—it was hailed as something the people had been waiting for for years. Needless to say, there was a further concert on the same lines; it was held on February 3, and on this occasion the Second Symphony was performed. This was received with even greater satisfaction than the first, but solely for the reason that it gave an indication that it was the intention to continue such concerts. Now comes the news that the third and final concert of the season will be held on April 14 next, when a special effort will be made to improve considerably upon the previous performances—principally by strengthening considerably the personnel of the orchestra.

The announcement will be received with joy, particularly by those who have been making anxious enquiries on the subject both personally and through the Press. But most of all will it be hailed with delight by those who have watched this movement to popularise good music, first with a curious interest, then with keen satisfaction, and finally with the enthusiastic delight that has helped so much to sustain its promoters in the difficulties that have beset them at almost every stage. It is perhaps appropriate here to make reference to the sympathy and understanding which has characterised the attitude of the Dublin Broadcasting Station towards this co-operative gesture on the part of the public. In this respect, at least, the Dublin public have reason to be grateful that they had at the head of the station one with the breadth of vision and broadness of mind shown by Mr. Seamus Clandillon when he was approached by some members of the public with the scheme which has worked so wonderfully well so far and which promises to revolutionise the state of musical affairs in Dublin, and, indeed, in any other city where a similar scheme of co-operation is established between the public and the broadcasting authorities.

The movement—whatever else it may or may not be—is a clear indication that Dublin—without presuming to give a lead to other cities—is thinking out its own salvation in musical matters, and that, recognising the power of the broadcasting service, it is wasting no time about making it a really effective instrument in the cause of musical culture.

P. J. D.

Correspondence

American Reception of S.W. Stations.

To the Editor of WORLD-RADIO.

SIR,—I enjoy *World-Radio* very much. In line with recent letters in it, I should like to report short wave reception in America. As everyone knows, short waves are no good over short distances. Consequently, reception of U.S. stations is poor. To tabulate:—

United States.

- 2XAF Very fine in daylight; hardly audible at night.
- 2XAD Always poor, especially at night.
- 8XP Very fine in daytime.
- 8XK Excellent on some nights.
- 8XAL do. do. do.
- 2XAL Good only in daytime.

Australia.

- 2ME Excellent with loud speaker strength 5.30-8.30 a.m. E.S.T., relayed 5SW recently; 5SW coming 20,000 miles.

Java.

- ANH Good volume, 7-8 a.m.

Holland.

PCJJ and PCLL always received with a strong signal, almost any hour.

England.

5SW on 24 metres relaying 5XX. I have left this till the last, for I want to write at some length about it. 5SW as received in this part of America is simply phenomenal. Using (O-V-2) every evening I can easily run the loud speaker 5-7 p.m. E.S.T. 5SW at 5 p.m. is as strong a signal as WEAFF, 50 kw. (200 miles east), 492 m.

5SW 7.30-8.30 a.m. is received with good headphone strength. But from 2-7 p.m.

(when England is in darkness and America in daylight) 5SW is as regular and dependable as many of our U.S. stations. One would think we were on the British Isles.

Big Ben is an old friend. We have been in the Savoy Hotel, Carlton Hotel, Ambassador Club, New Princes Restaurant, Hotel Cecil, and other places.

Some of the best programmes are the organ recitals from Bishopsgate and Southwark Cathedral and the National Symphony concerts. I can sit down at my set most any afternoon and hardly miss a word on the programme from the time Big Ben strikes 7 until it strikes 12.

At one time, in February, 5SW was so loud that I picked it up on one valve without an aerial or ground—the sun shining too. I have written enough about 5SW, but suffice it to say that it is a bond between the two great English-speaking nations, Britain and America—a bond which brings them more closely together—and a bond which will bring more quickly world peace to all nations. Truly, "Nation is speaking peace unto nation."

Now a word about the medium wavelengths. 2LO is the most consistent. Spain is next. I will tell about one night (January 21) which was a fine night for European reception:—(These stations were on according to *World-Radio*). (After 5.30 p.m. E.S.T., dark here):—

- 303 Nürnberg Drowned out by WGR.
- 306 2BE .. Fair dance music.
- 312 5NO .. Carrier wave.
- 326 6BM .. Drowned out by WPCH.
- 345 EAJ1 .. Very fine.
- 353 5WA .. Fair.
- 361 2LO .. Very fine—dance music.
- 375 EAJ7 .. Fair.
- 380 Stuttgart Good.
- 385 2ZY .. Good.

- 396 Hamburg Drowned out by WPAP.
- 405 5SC .. Drowned out by WLIT.
- 428 Frankfurt Good.
- 470 Langenberg Under WRC.
- 492 5GB .. Under WEAFF.

It is unfortunate that WRC and WEAFF are always on, making reception of these last two impossible.—Yours faithfully,

RAYMOND M. BELL.

55, Wilson Street, Carlisle, Pa.
March 1, 1928.

Crystal Reception.

To the Editor of WORLD-RADIO.

SIR,—The letter of "Veritas Veritatum" is amusing, but it is not very nice of him to imply doubt of your previous correspondent, who stated his experience and signed his name to his letter.

Many crystal users know that several of the stations mentioned can generally be heard at night and identified. The doubters, who, I think, have not often given time to experiments with a crystal set, will say "re-radiation." If that were the explanation, one would expect to hear occasionally any or all of the foreign stations that one's valve-using neighbours tune in. With me and others of my friends that is not so. I hear, for instance, Langenberg, Frankfurt, and Hamburg, but have never heard Radio Paris or Hilversum, Huizen or Motala, Brussels or Madrid, although I know my neighbours sometimes tune them in.—Yours faithfully,

CHAS. D. ROCHESTER, A.R.I.B.A.

Kettering.

To the Editor of WORLD-RADIO.

SIR,—Referring to the recent correspondence in your columns regarding long-distance crystal reception, I may state I have received the following—
(Continued on Page 444.)

A Running Commentary

I DOUBT whether in the whole history of St. John's Wood any incident could have created more excitement than the capture by Huggins of a U.S.A. transmission. I had worked late, as is my wont, and was on the point of locking up the house, when I was disturbed by a frantic rat-tat at the front door. As I opened it, I espied Huggins—a near neighbour of mine—on the doorstep. He was trembling with excitement.

"Come over to m-m-my place," he stammered "I've got Limburg."

I had always considered him fairly sane, but for the fact that he was a keen radio enthusiast. (This observation, I may add, is not original; it has been applied to me by many of my friends.) Still, the prospect of partaking of a smelly German cheese at midnight, was barely a temptation to forsake my warm cot.

"Good luck, old man," I retorted, "but we've got Gorgonzola and Stilton. If, for the sake of comparison . . ." I added.

He cut me short. "I tell you, I'm on to America. Lindbergh's reception, crowds cheering, speeches, guns, bands . . ."

He was breathless as he clutched at my arm. "They're waiting for you," he continued.

Now, I have always been told that such cases should be humoured, so I put on my hat and coat and ran with him to his house; he had left the door open in his hurry to fetch me.

Weird sounds emanated from what he enthusiastically terms his wireless den, but which, in reality, is his drawing room, and into which, to the great distress of his maiden Aunt Martha, he has brought permanent disorder. I was rushed to a chair in front of his new set—Huggins, I believe, either makes or remakes a receiver once a week—and before I had taken off my coat, he had slammed—with undue violence, I thought—a pair of telephones over my head. Aunt Martha, who, like Mrs. Micawber, will never desert him, was sitting in an armchair near the fire. To all appearances, he had dragged the old lady out of bed—but this, mark you, has nothing to do with the story.

I gathered that Huggins had repeated to her what he had picked up of the broadcast, and had only interrupted this description to fetch me, but his explanation did not seem to have been clear to her.

"There you are," he began, "there it is again."

"What are they doing now?" asked Aunt Martha.

"Lindbergh," he cried, "has now taken off his hat."

"Taken off what?" retorted the old lady.

"I wish you would speak up."

"His HAT," shouted my neighbour.

"Now, what did they do that for?" This from Aunt Martha; she is very deaf, poor thing.

"Look here, Huggins," I said, "while you're shouting to her, I cannot hear a sound, except your unmelodious voice. Shut up!"

"I must tell her what it is all about," he replied. "She's awfully interested in radio."

There was nothing to do, but to listen to the running commentary; I set the 'phones down on the table, leant back in my chair and lit a cigarette.

"What did they do that for?" repeated Aunt Martha.

"Do what?"

"Take the cat off?"

"Not cat, HAT."

"Oh!" A silence, then: "Well, why shouldn't he?"

"Now they're firing guns. Listen."

He switched on the loud speaker, which retorted by croaking twice and plopping three times.

"What are they doing?" Again, Aunt Martha.

"Guns, firing guns."

"Giving him buns? Well, that is a silly thing to do! I should have thought that a man of his age . . ." Then, turning to me: "Do you know, I call it eavesdropping, this listening business."

"He's landing now," continued Huggins, quite unperturbed. "The cavalry is keeping

back the crowds. The horses are pushing the people back to the pavement."

"What's Hindenburg doing now?" asked Aunt Martha; she was getting somewhat impatient.

"Not Hindenburg," shouted Huggins, "Lindbergh."

"That's what I said," retorted his Aunt. "What's he doing? I heard a lot about him during the war."

I thought it was time to take a hand in the game, so, rising from my chair, I approached nearer the fire. "Not Hindenburg, Miss—er—Martha,—Lindbergh!"

"Now, that's too bad," said the old lady. "He told me he was listening to America and made me come downstairs just as I am. First you say he's got Hindenburg and now you say it's Hamburg. Not worth listening to, at this time of the morning."

I was in for it; it was up to me to explain. "It's this way. He has got America, or something from there, and somebody is describing the reception given to Lindbergh—the aviator, the fier, you know?"

"The what?" Aunt Martha was annoyed.

"The fier," I repeated.

"Well, what's the matter with the fire?" She was quite huffy about it.

I looked at Huggins; he was glaring at me. "There you go again," he said. "You've upset Aunt Martha. She loves wireless and . . ."

"Rubbish," I replied. "She thinks we've deceived her." I leant closer to her, on a level with her left ear.

"Your nephew is listening to a German transmission relayed from . . ."

"I knew it wasn't America." She rose and walked to the door. "Trying to bamboozle me, both of you. I told you it was Hindenburg, all along, and you will contradict me. As for you," she turned to her nephew, "after getting me out of bed to listen to your rubbish, you can do without your early cup of tea."

I put on my hat and walked out; Huggins was absorbed in the knobs of his set; both hands were now twiddling the dials.

JAY COOTE.

Competition

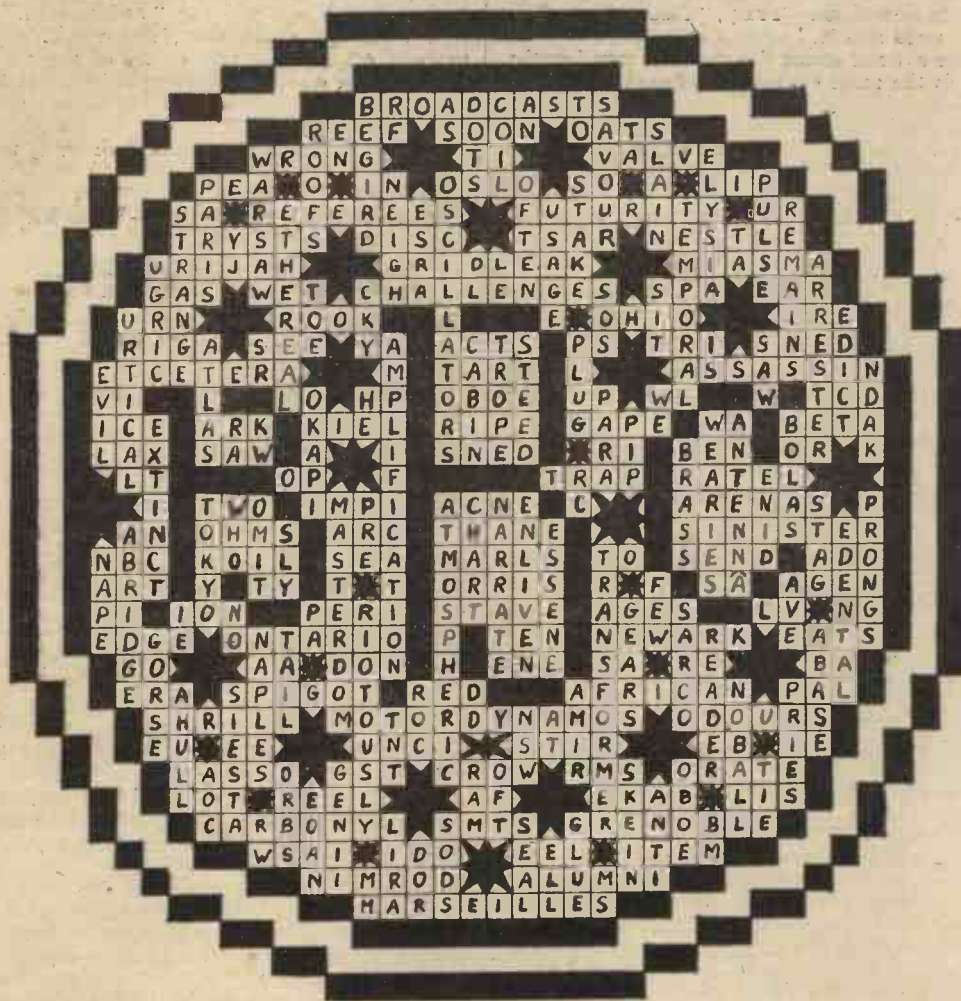
COMPETITION No. 8

The prizes offered in connection with Competition No. 8 (the syllable riddle) were won by:—

- (1) D. GILBERT,
Thornhill,
Lasswade, nr. Edinburgh.
- (2) Miss D. I. PIKE,
5 Doughty Street, W.C. 1.
- (3) P. MEADOWS,
47 Northway, N.W. 11.

The solution of the competition was as follows:—

Prokofieff; Rochester; Organ; General Electric Company; Reliability; Australia; Makushina; Maritana; Experimental; Simiramide. Initial letters, Programmés.



Solution of Competition No. 7.

(The name of the winner of this competition appeared in our last issue.)

COMPETITION No. 9

This week's competition is specially intended for British readers who have been following M. Stéphan's course of French lessons on Monday evenings. Prizes of £3, £2, and £1 are offered for the three most meritorious entries.

FRENCH COMPETITION

Answer in French the following questions:—

- (1) Expliquez l'expression "Excusez du peu."
- (2) Que signifie "nuitamment"?
- (3) Qui était Murat?
- (4) Pourquoi la lettre "s" se prononce-t-elle "z" dans le mot "Strasbourg"?
- (5) Que signifie "se mettre en quatre"?
- (6) Dans la terminaison "il" la consonne "l" se prononce-t-elle toujours? Donnez 6 mots en "il" dans lesquels la lettre "l" est muette.

(7) Expliquez l'emploi de "où" dans la phrase: "Les jours où il travaille."

(8) D'où sont tirés les vers suivants?

"Poète, prends ton luth et me donne un baiser;
La fleur de l'églantier sent ses bourgeons éclore,
Le printemps naît ce soir . . ."

(9) Qui est l'auteur de "La Lettre Chargée"?

(10) Quelle différence y a-t-il entre: "Il n'y a que vous," et "Il n'y a pas que vous"?

(11) Complétez les phrases suivantes:

- (a) Il est revenu sain et—.
- (b) Le bateau s'est perdu—et—.
- (c) Il est toujours tiré à—.
- (d) Elle se promenait de—en large.
- (c) Nous l'avons échappé—.

(Continued from Page 443.)

ing stations on a simple variometer-tuned crystal set:—

Cardiff, Daventry (5XX), Daventry Experimental (5GB), Bournemouth, London (2LO), Marconi House, London (Experimental transmission), Langenberg, Frankfurt-am-Main, Hamburg, Cologne, Toulouse, Madrid (Union-Radio).

Apart from the first three the best undoubtedly is Madrid, which can be heard quite plainly almost any night after Cardiff has closed down. —Yours faithfully, B. I. NEWTON.

Barry, March 6.

A Portable Set in Switzerland

To the Editor of WORLD-RADIO.

SIR,—I was very interested in the article by your correspondent in Lausanne on S.W. reception in Switzerland, for during last summer I carried out the many interesting experiments with a portable set on the medium wavelength band. Perhaps a short account might interest your readers.

I had a home-made 1-V-1 set built into a fibre suit-case with a frame aerial in the lid. With this set I tuned in several English stations in broad daylight, and using 6 ft. of coil wire for an aerial I received the running commentary of the Derby from 2LO early in the afternoon, whilst I was in a small boat on the Lake of Geneva. On the summit of the Rocher de Naye above Montreux I obtained extremely good reception on the frame alone, whilst an earth connection greatly improved results.

I found that Lausanne was much better for radio reception than any place I know in England, in spite of the surrounding Alps. —Yours faithfully, P. D. WALTERS.

St. John's Wood, N.W. 8.

(Continued from Page 447.)

(Birmingham); Redbreast (York); D.X. 2 (Hulme); Haven (Norwich); W. H. Lakeman (Newmarket); H. Newitt (Brigg); "491" (Bristol); T. Allsop (Leicester); Myra Gray (Pontefract); Two and Four (Barrow-in-Furness); Busman (Mitcham); Bobbie (Walthamstow); P.P.V. 3 (Anstruther); Mick (Addiscombe); Own Set (Northwick); Web (Bourne); M.T. (West Melton); Rotherham Three Valve; F. F. (Wandsworth Common); Interested (New Cross); Interested (Sheringham); Franceman (Newbury); T. H. T. D. (Manchester); Midnight (Tadmorden); Leatfield (Dublin); Pusser (Portsmouth); Anti Yank (Manchester); Manhattan; W. E. M. (Eastminster); Sparks (Dewsbury); Flashlight (Rainford); Diesel (Lincoln); Ether Searcher (Glamorgan); D.E. Two Valve (Northampton); H. G. A. (Doncaster); Territorial (Maidstone); Elsa (Ilkeston); Midnight (Tadmorden) 2; Anxious (Levenshulme); Night Hawk (High Warrington); Straight Two (nr. Manchester); H. P. (Oldham); 3 Valves (Gould (Brockley); M. J. Moore (nr. Stoke-on-Trent); E. Gold (W.1.); D. J. D. (Merthyr Tydfil); 33 (Crosshills); Three Valve (Gorse Hill); M. M. (E. 14).

The above broadcast was heard by the following listeners, through Cologne: Ludo (Graydon); Transatlantic 5 (Brighton); M. C. 3 (Liverpool); H. B. (Liverpool); G. M. M. (Budington); First Try (Bulwell); through Langenberg by: J. W. Parks (N. 11); L. O. U. (Abertillery); Grapho (Liverpool); Super 7 (Pendleton); Keen Observer (Shrewsbury); Two Valve (Redfield); Three Valves (North Finchley); Query (Enfield); 3 Valve (Barnsley); Wash (Inverness); Portland Bill (Dorset); Tilly (Cotteridge); Pat (Wood End). Through Stuttgart by: Glencone (West Ealing); N. D. P. Popular Two (Dereham); Sheeting (Blackheath); Limbergo (N. 19); New Fan (East Sheen); Midnight Owl (Sheffield) Through Breslau by: F. H. E. (Heaton Moor); Cowley (Thornton Heath); Twiddler (Harrogate). Through Münster by: Anti-Oscillator (Wimbledon); Beginner (Scarborough); A. Smith (Hyndland); Gargory (Banbridge). Through Berlin (Königsplatz) by: N. Gilder (Blackburn); Dusty Dave (Spring View); Brownie (Ramsgate). Through Hamburg by: C. W. Russell (Hull); Whiskers (Balham); C. W. Lewin (Plymouth); Bluebird (Cardiff). Through Berlin (Witzleben) by: Jay (Colnbrook); Interested (Gravesend); E. G. Eaton (Stamford Hill); Anode Tuned 4 (Norwich); Tic Toc (Birmingham); Toby (Battersea); Interested (North Allington). J. E. Blakeley, music seller: please send us your address.

NOTE.—Those who wish to take advantage of our free service by means of these columns must give a NOM DE PLUME, in addition to their own name and address. PROPRIETARY TRADE NAMES MUST NOT BE USED AS NOMS DE PLUME.

WORLD-RADIO (No. 139)

For replies to questions concerning the identity of stations heard, this coupon should be cut out and forwarded, together with particulars, written on a separate sheet of paper, to Editor, World-Radio, Savoy Hill, London, W.C.

Particulars should include: Date and time, approximate frequency (or wavelength), call (if heard), fading or not, signal strength, and details of programme. N.B.—Each inquiry must be accompanied by a separate coupon.

"World-Radio" Competition Coupon.

No. 9

March 23, 1928

The Editor's decision is final.

Broadcasting and Languages

FRENCH

(To be broadcast through Daventry from the London Station by M. E. M. Stéphan, on Monday, March 26, at 7.25 p.m.)

LA LETTRE CHARGÉE,

Par EUGÈNE LABICHE

SCENE VIII. (continued).

HORTENSE, FOUGASSON.

FOUGASSON : Et maintenant, madame, vous connaissez ma vie, mes aventures, je vous ai raconté mon règne . . . puis-je espérer que vous accueillerez ma demande d'un regard favorable ?

HORTENSE : Voyons, écoutez-moi . . . Vous êtes sous l'empire d'une idée fixe . . . vous prétendez que je ressemble à Betsy . . .

FOUGASSON : Oh ! oui !

HORTENSE : C'est une erreur . . . elle est bien mieux que moi . . . elle a le nez . . . adorablement incliné à gauche.

FOUGASSON : C'est vrai . . . pauvre Betsy !

HORTENSE : Sa bouche est majestueusement plus grande, ses yeux plus petits, son menton plus carré . . .

FOUGASSON : Oui, mais l'ensemble est frappant.

HORTENSE : Et puis il y a un obstacle.

FOUGASSON : Tant mieux ! je le briserai !

HORTENSE : Ah ! non, c'est mon cousin !

FOUGASSON : Quel cousin ?

HORTENSE : M. Hector de Courvalin . . . un homme charmant . . . que j'aime.

FOUGASSON : Oh ! taisez-vous !

HORTENSE : Et que je dois épouser dans quelques mois . . . Il est en ce moment à votre hôtel pour vous en faire part.

FOUGASSON : Ah ! Hortense ! . . . Non ! madame ! . . . vous venez de me porter un coup . . . de ruiner toutes mes espérances.

HORTENSE : Je le regrette, mais . . .

FOUGASSON : Ainsi c'est bien décidé . . . vous refusez ma main . . .

HORTENSE : Je vous l'ai dit, je ne suis pas libre.

FOUGASSON (tirant de sa poche sa pelote de ficelle) : Allons, c'est vous qui l'aurez voulu.

HORTENSE (effrayée) : Monsieur ! . . . que voulez-vous faire ?

FOUGASSON : Je reprends mon projet . . . (Montant sur une chaise et regardant au plafond.) J'ai aperçu un petit cloû par là, tantôt . . .

HORTENSE (appelant et sonnant) : Francine ! au secours ! au secours !

SCENE IX.

HORTENSE, FOUGASSON, FRANCINE.

FRANCINE (entrant vivement) : Madame . . .

HORTENSE : Monsieur veut attenter à ses jours !

FRANCINE : Ah bah !

HORTENSE : As-tu tes ciseaux ?

FRANCINE (les tirant de sa poche) : Les voici !

HORTENSE (en prenant une paire dans la corbeille à ouvrage) : Moi les miens !

(Les deux femmes sont armées de ciseaux.)

FOUGASSON : Que voulez-vous faire ?

HORTENSE (résolument) : Monsieur, nous vous prévenons qu'à chaque tentative que vous ferez, nous couperons la corde !

FRANCINE : Oui, à toutes les fois . . . crac !

FOUGASSON : Mais vous attendez à ma liberté.

FRANCINE : C'est comme ça ! essayez . . . crac !

(Continued on Page 446.)



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(Continued from Page 445.)

SCENE X.

LES MÊMES, HECTOR.

HECTOR: M. Fougasson n'était pas chez lui.

FRANCINE (le montrant sur la chaise): Le voici... il est en train de se pendre...

HECTOR (à Fougasson): Ah! monsieur, j'espère que ce n'est pas irrévocablement.

HORTENSE: Allons, bon! les adverbess!

FOUGASSON (sur sa chaise): Désolé, monsieur, mais quand j'ai décidé une chose...

HECTOR: Attendez donc! voici un télégramme d'Amérique qui vient d'arriver pour vous au Grand-Hôtel. (Il le lui donne.)

FOUGASSON: Un télégramme! (Sautant à terre.) Est-ce que les cotons sont en baisse? (Lisant sa dépêche.) "Betsy pas morte..."

TOUS: Hein?

FOUGASSON (lisant): "Tombée sur un lit de roseaux... dans la vase jusqu'aux épaules... prend des bains..." (Embrassant la dépêche.) Oh! Betsy! ma chère Betsy! (A Hortense.) Vous le voyez, madame, ça ne se peut plus... Je le regrette, mais si jamais je deviens veuf...

HORTENSE: Je ne serai probablement pas libre, moi.

FOUGASSON (examinant Hector): Oh! on ne sait ni qui vit, ni qui meurt.

HECTOR: Merci bien.

HORTENSE: Veuillez reprendre votre chèque de trente mille francs.

FOUGASSON: Non, madame... Ce qu'on donne aux orphelins ne se reprend jamais...

FRANCINE (à part): S'il pouvait m'en faire un aussi.

FOUGASSON (lui donnant sa pelote de ficelle): Tiens! Je te la donne... la corde de pendu, ça porte bonheur.

HECTOR (à Hortense): Cousine, vous m'avez promis une réponse...

HORTENSE (lui tendant la main): La voici!

HECTOR: Ah! je vous le jure, vous serez heureuse!

HORTENSE: In-du-bi-n-ble-ment!

RIDEAU.

N.B.—Listeners are advised to provide themselves beforehand with paper and pencil, as a short dictation test in French and two English sentences for translation will be given at the end of the talk.

The text of the dictated matter and the translation of the sentences will appear in the next issue of "World-Radio."

GERMAN

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Nach einer astronomischen Vorlesung ging ein Herr zu dem Redner und sagte: "Wenn ich recht verstanden habe, so sagten Sie, dass es möglich sei, dass lebende Wesen auf dem Monde seien?" "Ja, das ist schon möglich!" "Aber erlauben Sie mir eine Frage," sagte der Herr, "was machen diese Wesen, wenn der Mond abnimmt?"

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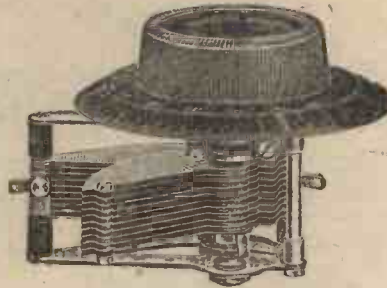
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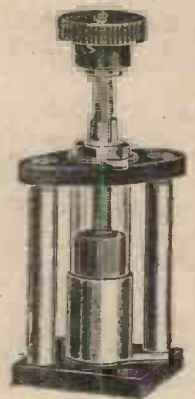
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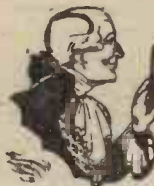
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Which Station Was That?

ANSWERS TO CORRESPONDENTS

A. J. S. (Street): No doubt an American station, but as you give no WL we cannot trace; possibly WGY (Schenectady). Banjo: Posen, giving election results (gramophone records in the intervals). 3 Valve (Malton): Motala (now on 1,380 m.) relaying dance music from Stockholm until 10.15 p.m. G.M.T. Searcher (Lurgan): Possibly Kalundborg, working later than advertised in programme. Novice: Kalundborg, relaying Copenhagen. A relay of foreign stations including 5GB. Screened Grid (Leeds): Kattowitz and Posen giving election results with gramophone records in the intervals. Pip (Chatham): (1) Yes, this tallies with the transmission; (2) Yes, Posen. Gamma (Southend-on-Sea): Warsaw. Sir Toby (Yorks.): Posen and Kattowitz broadcasting election results (gramophone records in the intervals). S. D. Ingham (Bradford): Kalundborg, relaying Copenhagen (a relay of foreign stations including 5GB) see programme for latter station in *World-Radio*. Wireless Wauchope (Burntisland): We know of no French station on this WL, but possibly one of the PTT relays may have made some alteration; we are investigating. 3VHV (40 and 41): Fog beacons GGG, Round Island Lighthouse, Scilly Isles; GGM, Bar Lightship (Mersey). W. I. S. (Liverpool): Yes, WGY (Schenectady) received direct. Enos (Radstock): Bremen, relaying Hamburg (a relay of foreign stations); see programme for latter station in *World-Radio*. Amorphous Q (Taunton): 2XG, Rocky Point, Long Island, New York; this station works on wavelengths varying from 16-40 m. M. J. N. (Oldham): Kaiserslautern (204.1 m.) relaying *The Merry Wives of Windsor* (Nicola) from the National Theatre at Munich. Valvian (Swindon): This was Motala (now on 1,380 m.) relaying church service from Stockholm, followed by concert of Belgian songs and music and organ recital. Beau (Margate): (1) No, this was Huizen (Holland), (2) Yes, Norddeich (weather report), (3) Scheveningen-Haven (Holland), stock exchange quotations, market prices, etc. Thunderbug (S.E.27): Milan (Vigentino) now on 526.3 m. Symphony concert. Istam (East Grinstead): Cologne (chimes from the studio), concert of classical and dance music until 1 a.m. (midnight G.M.T.); also relayed by Langenberg. Nelsonia (Southport): This was Kalundborg, relaying church service from Copenhagen. Justim (Cheltenham): We regret, but it is impossible to trace stations heard from your condenser readings; some estimate of WL must be given. BM/EBVB (W.6): Hanover, Bremen or Kiel, relaying Hamburg (a relay of foreign stations); see programme for latter station in *World-Radio*. Ponteland 3 Valve (Newcastle-on-Tyne): Yes, WGY (Schenectady) received direct. Bon (Birmingham): Are you sure this was a Bach recital, for it is not mentioned in programmes? Details of time and approximate WL would tally with the broadcast from Copenhagen (*vid.* Kalundborg) of chamber music (Beethoven and Handel). The Globe (Kidderminster): (1) KDKA (East Pittsburgh) received direct; (2) possibly WBZ (Springfield), (3) possibly WCBZ (Zion, Ill.), (4) cannot confirm, but KFI (Los Angeles) has been picked up on several occasions, (5) WBAL (Baltimore). Realisation (Stamford Grove): We cannot confirm that you had WGY (Schenectady) direct, as this station was relayed by Germany on that night. KDKA (East Pittsburgh) may have been direct. C. E. J. (Purley): (1) Yes, PTT Grenoble, (2) an amateur transmitter, but cannot trace as you give no call sign, (3) regret, cannot say as so many dance bands were working at that time. Yarnold (Gloucester): Yes, KDKA (East Pittsburgh) and WGY (Schenectady) received direct. Your last query refers to Posen (Poland), gramophone records and election results (metronome as interval signal). RTZ/O. V. 2./J. W. F.: (1) Regret, but details are too vague to allow of identification, (2) possibly PTT Lyons on 40.20 m.; frequently relays Ecole Supérieure or the local Lyons (La Doua) station. Pongo (Doncaster): Kattowitz, election results with gramophone records in the intervals (metronome as interval signal). Enquiry (Lancaster): Details would tally with Leningrad. C. A. Brooks (Mistley): PTT Lille. Loud Speaker Three (Forest Gate): Surely this was an amateur transmitter. Symbol (Whitecraigs): Yes, Jan Klepura was booked to give a recital, but the programme was altered; we do not know the name of the violinist who broadcast. Punch (Glapham Common): Warsaw, gramophone records and election results. Grid Bias (Nottingham): (1) Yes, Münster, relaying dancing lesson from Cologne, (2) we have had many reports of this dance transmission, but cannot trace origin. Signal Box 1L (Bedford Park): PTT Lille. E. O. M. (Preston): Yes, Kootwijk (Holland). Atta Boy Two (Cardiff): We know of no German station on this WL; possibly an amateur. A. E. W. Davies (Alderney): Yes, WGY (Schenectady) received direct. W. F. C. (Loughborough): (1) Yes, Huizen (Holland) which transmits on 1,950 m. all day on Sundays, (2) Scheveningen-Haven, (3) Motala, relaying church service from Stockholm, (4) cannot trace; coupon must be sent with each enquiry. J. G. (Newport, Mon.): An amateur transmission of gramophone records, but cannot trace as you give no call sign. Rekwa (Swansea): Apparently WJZ (Boundbrook) received direct. Prestwick (Ayrshire): (1) 5YZ, experimental transmitter at Charlton, near Woolwich. Four Valves (Hexham): No, Cardiff was broadcasting a church service at that time. Drummer (Maltby): (1) Kovno (Lithuania); call: *Radio Kaunas*; (2) Leningrad, now working on 995 m.; (3) yes, Cork (own programme); (4) either PTT Rennes, or PTT Lille; (5) yes, details would tally with Stamboul; (6) Leningrad; (7) Moscow Comintern (RDW); (8) Kharkov (Narkompostshtel). Searcher (Rusholme): (33) Moscow Comintern (RDW); (34) no, this was Kovno (Lithuania) relaying opera *Rigoletto* (Verdi) from opera house; (35) regret, cannot trace. BM/KVCP (Derby): Regret, but we can trace no organ recital in programmes at 1.15 p.m. H. S. (Wallington): Warsaw (a lady announcer). A. M. J. (Manchester): Moscow Comintern (RDW). Fuzzi (Forest Hill): Oslo (variety programme). M. C. (Derry): Apparently WPG (Atlantic City) received direct. M. E. (Rottingdean): Posen (Poland) election results with gramophone records in the intervals. Alannah (Hull): Kattowitz (Poland) broadcasting election results with gramophone records in the intervals. Veronique (Kettering): Motala, relaying concert from Stockholm. Shamrock (Londonderry): (1) San Sebastian relaying Madrid; (2) WL, wrong; Norddeich (Germany) weather report; (3) Langenberg relaying the Lindbergh broadcast, *q.v.* RAJB (Coshamb): (1) KHJ (Los Angeles) on 405.2 m.; (2) WKBC (Birmingham) 218.8 m.; (3) WSOE (Milwaukee, Wisconsin) on 270.1 m.; (4) GNRW (Winnipeg) 384.4 m.; (5) (a) cannot trace (b) WABC (Rich-

mond Hill, N.Y.) on 325.9 m.; (c) WCCO (Minneapolis) 405.2 m.; (6) 4QG Brisbane (385 m.); (7) possibly Radio-sud-Ouest, Bordeaux; (8) regret, cannot trace. Pigs Pay (Wandswoth): Regret, but cannot possibly identify transmission from condenser readings; some estimate of WL must be given. Rolls (Hazeldean Lodge): Apparently a British amateur in India, but do not know name and address. Max (Oxford): Kattowitz, election results with gramophone records in the intervals. Sailor: We feel sure you were mistaken, as this was Union Radio, Madrid (two musical plays). C. C. Hunt (Luton): Regret, but we cannot recognise this melody in connection with any German transmitter. Anita (Crock): All German stations use the melody known as "Austria" (music by Haydn) which is the National Anthem of that country. Retlaw (Woodford Green): (1) Motala, relaying Children's Hour from Stockholm. Muggins (Glapham): Kattowitz, broadcasting election results with gramophone records in the intervals. Bunny (Whitstable): Yes, Leningrad. Earlyriser (Thorpe Bay): Frankfurt-on-Main (Nelson Revue). Domino (Waterford): Cannot trace as you give no estimate of WL; condenser readings do not help. Hugo (Wimbleton Park): Moscow Comintern (RDW). Wafo (Burton-on-Trent): An amateur transmitter, but cannot trace call sign. Knob Twister (Lincs.): Koenigsruherhaus (Press). Ultra-Audion (Birmingham): (1) Koenigsberg and Danzig; (2) PTT Lille; (3) Cork relaying Dublin; (4) Rome (a lady announcer). Kene: Posen (Poland) gramophone records and election results. Night Hawk (Lincoln): Belfast, relaying from the Carlton Ball Room; (2) details are too vague, regret, cannot trace. L. G. K. (E.6): Apparently Langenberg; tests were made with a view to future U.S.A. relays. Jig Saw (Southampton): (1) Frankfurt-on-Main (The Nelson Revue); (2) and (3) coupon must be sent with each enquiry. Myra Gray (Pontefract): Stuttgart (variety programme). Dinas (Cornwall): (1) WL, apparently wrong; details tally with Frankfurt-on-Main (The Nelson Revue); (2) Motala, relaying church service from Stockholm. D. W. L. (Barrosa Barracks, Aldershot): You give no estimate of WL; regret cannot trace; many Continental stations gave dance music at that time. Delta (Paignton): It is almost impossible to trace transmitter from your condenser readings, but we suggest that the station you heard taking the same programme as Langenberg was Cologne. Many Continental stations close down with chimes. Eaton Three (Norwich): (1) Berlin (Zeelen) relaying a radio matinee from the Grosses Schauspielhaus (theatre), Berlin, (2) cannot trace from condenser settings, but might tally with gramophone recital from the same station. Tona and 001.3 V.: Cologne, which later relayed the Lindbergh broadcast. W. R. A. (East Finchley): Cannot trace; your estimate of WL covers the entire short wave band. The letters EE stand for Spain. Slow Motion (N.W.2.): No doubt PTT Lille, which has recently experimented in the relay of foreign stations. Selenite (Notion): (1) Strength certainly suggests PCJJ (Holland); (2) PTT Lyons on 40.20 m.; (3) cannot publish information; times of transmissions of 2ME (Sydney) are irregular. Wobbler (Chatham): (1) Posen, broadcasting election results with gramophone records in the intervals; (2) Hamburg. Gamma (Southend-on-Sea): (a) Linkoeper or Uppsala, relaying church service from Stockholm, (b) and (c) coupons must be sent with each enquiry. Lady Enthusiast (Rickmansworth): (1) Lindbergh broadcast, received through Münster; (2) Posen (Poland) election results with gramophone records in the intervals. Scotsoph (Middleham): (1) Cologne, relaying the Lindbergh broadcast; (2) Leningrad, now working on 995 m. D. O./B. (Kings Heath): (1) Hamburg, broadcast of the Lindbergh reception at Washington, D.C.; (2) Posen (election results with gramophone records in the intervals). Froggatts (Sutton Coldfield): (1) An amateur transmission, but cannot trace as call sign is incomplete. KRO (Norbury): Regret, cannot trace; most stations were giving a Belgian programme at that time. Arosta Pencoed: PTT Lille. H. B. 3. (S.W.2): (1) Langenberg; (2) Aachen; (3) regret, cannot trace; (4) Kattowitz (Poland) broadcast of election results with gramophone records in the intervals; (5) Posen; (6) Wilno; (7) Cracow; (8) regret, cannot trace. Leo (Somerset): If on 1,450 m. Moscow Comintern (RDW); your details do not tally with any other station, but the Moscow programme items are not published. Nulla Bona (Sligo): Yes, WGY (Schenectady) received direct. L. M. R. D. (Winchester): It is impossible to trace transmissions from condenser readings only; some estimate of WL must be given; many stations broadcast dance music on Sunday nights. Spooner (Norfolk): Apparently PTT Lille, but not advertised in programmes. Fretwork (Ken): PTT Lille. Curious (Cardiff): An amateur transmitter, but cannot trace as you give no call sign. Spencer Park (Coventry): This appears to have been Hanover (probably relaying Hamburg) which later took the Lindbergh broadcast from WGY (Schenectady). Auctions (Thirsk): We regret, but cannot trace; many short wave stations are now experimenting. Sligachau (Ches.): We cannot confirm from the foreign programmes that Jan Klepura broadcast from any Continental station on that evening; possibly gramophone records. Francisus: A Polish station broadcasting election results with gramophone records in the intervals, but cannot say which as you give no estimate of WL, and condenser readings do not help. Caret Cross (Carlisle): Moscow Comintern (RDW). Westgate (Wolverhampton): Do not recognise call sign, but an amateur experimental transmitter. Clego (Blackheath): Cannot confirm as you do not give WL, but would tally with Kalundborg, relaying Copenhagen. Investigator (Malvern): PTT Paris, relaying dance music from the Coliseum. Four Valves (Bromboro Port): PTT Rennes, relaying PTT Paris. *Le Chaudelier* (Alfred de Musset). New Imp (Goodmayes): We believe that Stockholm relayed on that night. Viking (Dronfield, nr. Sheffield): Warsaw (concert of gramophone records). I.V.I. (Liverpool): A relay of Stockholm; opera *La Bohème* (Puccini), relayed from the Royal Opera House. Tombo (Bayswater): Münster. BM/EBVB (W.6.): (1) PTT Rennes; (2) the nearest German station above Cologne is Hanover; (3) it was Stettin, relaying the Berlin programme (chamber music). Levedge (Bolton): WL, wrong; English lesson from Cologne, you may have picked this up direct, or from Aix-la-Chapelle. Ambulator (Eastbourne): Breslau, relaying from the Café Hindenburg at Beuthen (Silesia). Caret Cross (Carlisle): Probably an amateur transmission; regret, cannot trace. Gran (Doncaster): A test through 2LO. Beacon Radio (S.E.5): Malmö relaying Stockholm; also Göteborg on 416 m. H.F. 42: (a) AFK (Doberitz) on 37.95 m.; (b) this was 2FC testing through

Keston, but not using 45 m. Wanderer (East Sheen): (1) Warsaw; (2) PTT Rennes (280 m.); (3) Moscow Comintern (RDW). Midnite Oil (Bognor): Apparently a test, but cannot trace. Tempus Fugit (Bristol): (1) Frankfurt-on-Main (Nelson Revue); (2) details are too vague, regret, cannot trace. Solo 4 (N.16): Not advertised in programme, but possibly Dublin. 3 Valve (Chatham): Berne (a lady announcer) organ recital followed by orchestral concert relayed from the Kursaal. Cardboard Horn (London): Hilyersum. *The Beautiful Cuban Girl*, relayed from the Casino at Rotterdam. E. Hayward (Dorchester): Langenberg, relaying variety programme from Cologne. Blue Bird (Glam.): Moscow Comintern (RDW). Snowdrop (Tooting Common): PTT Marseilles Skinner (Harrow): Quite possibly 2FC or 2ME (Sydney). Pour Apprends (Burnley): A Spanish station, but cannot say which as you give no estimate of WL. W. W. (Boscombe): Studio clock (Westminster Chimes). Positive Terminal (Blackrock): Would appear to be WJZ (Boundbrook) on 454 m. ALS (Coventry): (a) AGJ is stated to be on 56.7 m.; (b) AFK (37.65 m.), *comma sechis*; do not know of any other on that WL; (c) PTT Lyons. Alpha (Llanely): (a) Which Daventry do you mean? If 5XX, we cannot find any programme tallying with your details; a further search is not possible as your condenser readings do not establish WL. Two and Four: (1) Cardiff religious service in Welsh from Bethlehem Welsh Congregational Church. Burgess (Totley): (1) PTT Lyons (40.20 m.); (2) Possibly Eiffel Tower, Paris, testing. Midnight Oil (Bognor): Regret, but cannot trace short wave transmissions unless the estimate of WL is much more definite. R.M.M. (Worlington): Possibly Warsaw (dance music, etc.). J.C.: (1) Surely Norddeich (Germany) weather report; (2) Huizen (church service). D.X. Ham: Your estimate of WL is wrong; but this was a relay of PTT Paris. Brooke (Kings Lynn): 2ME (Sydney) on 32.5 m. Norwood (Knaresborough): Eiffel Tower, Paris. Nelson P.M. (N.W.5): PTT Rennes. E. Smith: PTT Rennes, relaying from PTT Paris (English lesson by the Berlitz School). M. Wyatt (Chapel-en-le-Frith): AFK (Döberitz) working on Mondays, Wednesdays and Fridays from 11.30 a.m.—12.30 p.m. and 7.20—8.20 p.m. G.M.T. without doubt relayed by Zeelen. Clego (Blackheath): Cannot confirm, as you do not estimate WL, but would tally with Kalundborg, relaying Copenhagen. J. G. Laris (Dundalk): WGY (Schenectady) on 379 m. A. H. M. (Old Kent Road): Your WL must be wrong; regret, cannot trace. Radio France (Southampton): (1) Kattowitz (male and female announcers); (2) Warsaw; W. (-) in Morse; (3) Yes, Frankfurt-on-Main relaying Stuttgart. Opera: *Dabbro* (Smetana). I. W. Patser (Glos.): Frankfurt-on-Main, gramophone records following the relay of a musical play from Stuttgart. W.P.G. (Fife): Norddeich (Germany) weather report. Menard (Eltham): Langenberg relayed 5GB on that date; this was also taken by Cologne and Münster, but as you give no estimate of WL, we cannot say from which station you heard this. Tug (Camberwell): PTT Paris. English lesson by the Berlitz School. St. Leger (Doncaster): Apparently an amateur transmission, but cannot trace tests. Kilocycle (Reading): Eiffel Tower testing on short waves. Busybody (Barnsley): Some estimate of WL must be given; do you mean midday or midnight? details are too vague; regret, cannot trace. Zug: Kalundborg, relaying London. Reddens (Blackburn): An amateur transmission, but cannot trace as you give no call sign. L. Etherite: Berlin (Witzleben) 483.9 m. dance music until 11.30 p.m. G.M.T. L.O.J. (Belfast): No, more likely to be PTT Lille, relaying dance music from the Coliseum at Paris. Rose (Brighton): PTT Paris, call: *Allo! Ici le Poste Radiophonique de l'Ecole Supérieure des Postes et Telegraphes de Paris*, but many continental stations use the word *Radio* in their calls. Ignor (Grimsby): No, this was Huizen, relaying church service from Amsterdam. Sandy (Glasgow): Bremen, Hanover and Kiel were the only stations advertised to relay Hamburg on that date; possibly a harmonic. Donnachie: It is impossible to trace without some estimate of WL, quite possibly an amateur transmission. Oidar: This was the new experimental station at Toronto, Ontario (Canada), on 312.3 m. Call CKGW (Bowmanville). Sparkes Madge (Bedford): Breslau (gramophone records). Made Up Three: Milan (526.3 m.) on March 13, variety concert; see detailed programme in *World Radio*. On March 14, 7-7.30 p.m. French lesson. Norma (Hford): Malmö, relaying Stockholm. Wowski (Kirkby Stephen): Fog beacons (1000 m.) GGG, Round Island Lighthouse, Scilly Isles. GGM, Bar Lightship at the entrance of the Mersey. Par Rush (Lidger Green): You give no estimate of WL, but apparently an amateur transmission of gramophone records. Townite (Birkby): (1) Frankfurt-on-Main, the early morning broadcast of physical exercises (gramophone records in the intervals); (2) Hamburg, the early morning broadcast of weather and news. Coupon must be sent with each enquiry. Newo (Stanlytown): Your details are too vague; regret, cannot trace. BM/BYWO: Frankfurt-on-Main concert of gramophone records following the relay of a musical play from Stuttgart. A.Z. (W.10): WL, surely wrong; Nürnberg (303 m.) was relaying Munich at that time. Diogenes (Clapton): Much as we should like to give you the desired information, we regret that we cannot do so, as you give no indication of WL. You may have heard these items from Hamburg, which at that time was relaying a concert from the Café Wallhof in that city; most of the other stations were giving dance music; details of the programmes were not published. Lancasterian (Rotherham): Frankfurt-on-Main (gramophone records). E. T. T. Bon (Netherton): (a) possibly, but we have no confirmation that Stockholm took this relay; (b) Cologne; (c) Langenberg. Temple Fortune (PTT Lille. Amateur: We cannot trace these amateur transmitters. Molve (Llandudno): PTT Lille, English lesson given by the local Berlitz School. Bargee (Newport): Possibly Kalundborg took one of the German relays of WGY (Schenectady). A. Schubert (Naples): No, KDKA (East Pittsburgh) received direct. E. Finburgh (N.W.8.): (1) Yes, WGY (Schenectady) received direct; (2) yes, Moscow Comintern (RDW); (3) San, Sebastian (4) yes, but Lausanne is a very weak station, but rarely heard in the United Kingdom. Omega (Trowbridge): We regret, but it is impossible to trace as you give no estimate of WL, condenser readings do not help. Merdow (Hanwell): Königs-wusterhausen, relaying concert from the Grand Play House at Berlin. Festing (Southsea): Regret, cannot trace.

The queries received from the following readers refer to the Colonel Lindbergh transmission from Washington, U.S.A., which was rebroadcast by many German stations. As but a vague estimate of wavelength was indicated, it is impossible to state from which of the German transmitters the broadcast was heard.—For details see paragraph in "Via Ether"—R. H. W. (West Bromwich): Francis Danks (Temple Fortune); T. Coupe (Gorton); M. Everett (Northam); E. Storey (Mansfield); M. A. W. P. (Bexley Heath); J. W. M. (Edmonton); Milton

(Continued on Page 444.)

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DAVENTRY PROGRAMME

(March 25-31) (25 kw.)

SUNDAY

10.30 a.m.—Time Signal (Greenwich), Weather Forecast.
3.30 p.m.—An Afternoon Concert of Music by Dr. W. G. Whittaker. (S.B. from Newcastle). The Newcastle-upon-Tyne Bach Choir (Hon. Conductor, Dr. W. G. Whittaker). Set for unaccompanied mixed choir and semi-chorus.
4.0 p.m.—Ernest J. Potts (Bass).
4.30 p.m.—A Recital, Sarah Fischer (Soprano), Elsa Karen (Pianoforte).
5.20-5.30 p.m.—Readings from the Old Testament, "The Mysteries of Wisdom," Ecclesiastes viii, v. 16 to Ecclesiastes ix, v. 16.
8.0 p.m.—A Religious Service, from the Studio, conducted by the Rev. Harry Miller.
8.45 p.m.—The Week's Good Cause; Appeal on behalf of the Crusade of Rescue, by Father Ronald Knox.
8.50 p.m.—Weather Forecast, General News Bulletin, Local Announcements, Shipping Forecast.
9.5 p.m.—A Recital of Bach Chorales and Orlando Gibbons' Tunes, from the Revised Hymnary. Carried out by the Glasgow Bach Society's Choir, conducted by Mr. J. Michael Diack. (S.B. from Glasgow).
9.30 p.m.—A Choral and Orchestral Concert. (S.B. from Glasgow). The Station Orchestra, and Glasgow Bach Society's Choir, conducted by Mr. J. Michael Diack, James Wood (Tenor), Miss Margaret Barrett (Soprano), Miss Elsie Black (Contralto), Mr. John Morton (Bass).
10.30 p.m.—Epilogue.

MONDAY

10.15 a.m.—A Short Religious Service.
10.30 a.m.—Time Signal (Greenwich), Weather Forecast.
11.0 a.m.—Gramophone Records.
12.0 noon.—A Ballad Concert, Muriel Herbert (Soprano), Pamela Norris (Pianoforte).
12.30 p.m.—The B.B.C. Dance Orchestra, personally conducted by Jack Payne.
1.0-2.0 p.m.—An Organ Recital, from Southwark Cathedral, by Edgar T. Cook. Soloist: Helen Just.
2.30 p.m.—Miss Rhoda Pöcher, "Boys and Girls of Other Days"—XI, Two Great Adventures."
3.0 p.m.—Musical Interlude.
3.5 p.m.—Great Stories from History and Mythology—"Arthur's Last Great Battle."
3.20 p.m.—Musical Interlude.
3.30 p.m.—Olivia Hilder (Soprano), Dorothy Tresseder (Pianoforte).
4.0 p.m.—Frank Ashworth's Park Lane Hotel Dance Band, from the Park Lane Hotel.
5.0 p.m.—Household Talk, Mrs. Cottingham-Taylor, "The Making of Easter Cakes."
5.15 p.m.—The Children's Hour.
6.0 p.m.—An Organ Recital, by Pattman, from the Astoria Cinema.
6.20 p.m.—Girls and Boys Clubs' Bulletin.
6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.
6.45 p.m.—Organ Recital (Continued).
7.0 p.m.—Mr. Desmond MacCarthy, Literary Criticism.
7.15 p.m.—The Foundations of Music. Bach's Sonatas for Viola da Gamba and Cembalo, played by Howard Bliss (Violoncello) and Gordon Bryan (Pianoforte).
7.25 p.m.—M. E. M. Stéphan, French Talk, including a reading from "La Lettre Chargée," Scene VIII.
7.45 p.m.—A Pianoforte Recital, by Iturbi.
8.15-9.0 p.m.—"The Night Fighters," A Radio Play by Cecil Lewis.
9.0 p.m.—Weather Forecast, Second General News Bulletin.
9.15 p.m.—The Gershwin Parkington Quintet.
9.35 p.m.—Local Announcements, Shipping Forecast.
9.35 p.m.—A Light Orchestral Concert. Hilda Blake (Soprano), Leonard Gowings (Tenor), The Wireless Orchestra, conducted by John Ansell.

TUESDAY

10.15 a.m.—A Short Religious Service.
10.30 a.m.—Time Signal (Greenwich), Weather Forecast.
11.0 a.m.—Gramophone Records.
12.0 noon.—Light Music; Andrew

Brown's Quintet. Marjorie Hovord (Soprano).
1.0 p.m.—2.0 p.m.—Moschetto and his Orchestra, from the Savoy Hotel.
2.30 p.m.—Sir H. Walford Davies: "Elementary Music—XI, Final Examination."
3.15 p.m.—Musical Interlude.
3.20 p.m.—M. E. M. Stéphan: "Elementary French."
3.50 p.m.—Musical Interlude.
4.0 p.m.—William Hodgson's Marble Arch Pavilion Orchestra, from the Marble Arch Pavilion.
4.15 p.m.—Mr. J. H. Driberg: "The Proper Study of Mankind—An Introduction to Anthropology."
4.30 p.m.—William Hodgson's Marble Arch Pavilion Orchestra (Continued).
5.0 p.m.—Miss Ann Spice: "A Bookshelf of Old Favourites: 'Tess of the D'Urbervilles,' by Thomas Hardy."
5.15 p.m.—The Children's Hour.
6.0 p.m.—A Recital of Gramophone Records, arranged by Mr. Christopher Stone.
6.30 p.m.—Time Signal (Greenwich), Weather Forecast; First General News Bulletin.
6.45 p.m.—A Recital of Gramophone Records.
7.0 p.m.—St. William Lawrence: "A Garden in a Window Box."
7.15 p.m.—The Foundations of Music: Bach's Sonatas for Viola da Gamba and Cembalo, played by Howard Bliss (Violoncello) and Gordon Bryan (Pianoforte).
7.25 p.m.—Prof. A. Y. Campbell: "Greek Plays for Modern Listeners—V, Aristophanes and his 'Frogs'" (S.B. from Liverpool).
7.45 p.m.—A Song Recital by Frank Titterton (Tenor).
8.0 p.m.—Mrs. Mary Adams: "Problems of Heredity—V, The Inheritance of Personality or Temperament."
8.30 p.m.—Vaudeville. Teddy Brown (Xylophone), Johnson Brothers and Greenop (Syncopated Harmony), Doris Palmer (Entertainer), Wolseley Charles (at the piano), Leslie Paget (Entertainer), The B.B.C. Orchestra, personally conducted by Jack Payne.
9.0 p.m.—Weather Forecast, Second General News Bulletin.
9.15 p.m.—Sir H. Walford Davies: "Form and Phrase in Music."
9.35 p.m.—Local Announcements; Shipping Forecast.
9.40 p.m.—A Musical Comedy Programme: Vivien Lambelet (Soprano); George Pizzy (Baritone). The Wireless Orchestra, conducted by John Ansell.

WEDNESDAY

10.15 a.m.—A Short Religious Service.
10.30 a.m.—Time Signal (Greenwich) and Weather Forecast.
11.0 a.m.—Gramophone Records.
12.0 noon.—A Ballad Concert. Alan Johnstone (Tenor), Samuel Clifford (Violoncello).
12.30 p.m.—The B.B.C. Dance Orchestra. Personally conducted by Jack Payne.
1.0-2.0 p.m.—Frascati's Orchestra. Directed by Georges Haeck, from Restaurant Frascati.
2.30 p.m.—Mr. A. Lloyd James: "Speech and Language."
2.50 p.m.—Musical Interlude.
3.0 p.m.—Mr. J. C. Stobart and Miss Mary Somerville: "Stories in Poetry—XI, Victorian Poetry."
3.30 p.m.—Musical Interlude.
3.45 p.m.—Captain L. F. Ellis: "Our Interest in Good Government—V, Our Part in Making Laws Work."
4.0 p.m.—A Light Classical Concert. Mary Hilliard (Soprano); The Stratton String Quartet; George Stratton (1st Violin), William Manuel (2nd Violin), Lawrence Leonard (Viola), John Moore (Violoncello).
5.15 p.m.—The Children's Hour.
6.0 p.m.—Musical Interlude.
6.20 p.m.—The Week's Work in the Garden, by the Royal Horticultural Society.
6.30 p.m.—Time Signal (Greenwich), Weather Forecast and First General News Bulletin.
6.45 p.m.—Musical Interlude.
7.0 p.m.—Ministry of Agriculture Talk: Mr. J. M. Venn, "A Retrospect of British Agriculture."
7.15 p.m.—The Foundations of Music. Bach's Sonatas for Viola da

Gamba and Cembalo, played by Howard Bliss (Violoncello) and Gordon Bryan (Pianoforte).
7.25 p.m.—Prof. A. V. Hill: "Speed, Strength, and Endurance in Sport—V, Skill and Efficiency in Running."
7.45 p.m.—The Catterall Quartet Chamber Music Concert. Relayed from the Memorial Hall, Manchester. Arthur Catterall (1st Violin), John Bridge (2nd Violin), Frank Park (Viola), Johan C. Hock (Violoncello), The Catterall Quartet, assisted by Stewart Redfern (Viola), Carl Fuchs (Violoncello).
8.15 p.m. (approx.).—In the Manchester Studio. Edna Isherwood (Soprano): The Star (Rogers), Songs my Mother Taught Me (Dvorak), At Dawning (Cadman), Wind in the Trees (Thomas).
8.25 p.m. (approx.).—Concert (contd.).
9.0 p.m.—Weather Forecast and Second General News Bulletin.
9.15 p.m.—Mr. Vernon Bartlett: "The Way of the World."
9.30 p.m.—Local Announcements, and Shipping Forecast.
9.35 p.m.—A Chopin Recital, by Virginia McLean.
9.45 p.m.—The Madonna Players in "The Man of Destiny," by George Bernard Shaw.
11.0 p.m.—12.0 midnight.—Dance Music. Jay Whidden's Carlton Hotel Band, from the Carlton Hotel.

THURSDAY

10.15 a.m.—A Short Religious Service.
10.30 a.m.—Time Signal (Greenwich) and Weather Forecast.
11.0 a.m.—Gramophone Records.
12.0 noon.—Light Music. Alice "Eliason" Trio, Evelyn Roselle (Soprano).
1.0-2.0 p.m.—The Week's Concert of New Gramophone Records.
2.30 p.m.—Mr. Eric Parker: "Out of Dodge from Week to Week—XI, The Return of the Migrants."
3.0 p.m.—Evensong. Relayed from Westminster Abbey.
3.30 p.m.—The Rev. W. H. Elliott: "The Seamy Side of Life"—VI.
3.45 p.m.—Miss Violet Brand: "Something New from Something Old—A Use for all Scraps."
4.0 p.m.—The Astoria Orchestra. Directed by Fred Kitchen, from the Astoria Cinema.
5.0 p.m.—Organ Recital by Pattman, from the Astoria Cinema.
5.15 p.m.—The Children's Hour.
6.0 p.m.—The B.B.C. Dance Orchestra. Personally conducted by Jack Payne.
6.15 p.m.—Market Prices for Farmers.
6.20 p.m.—Musical Interlude.
6.30 p.m.—Time Signal (Greenwich), Weather Forecast and First General News Bulletin.
6.45 p.m.—Musical Interlude.
7.0 p.m.—Mr. Francis Toye: "Music in the Theatre."
7.15 p.m.—The Foundations of Music. Bach's Sonatas for Viola da Gamba and Cembalo. Played by Howard Bliss (Violoncello) and Gordon Bryan (Pianoforte).
7.25 p.m.—Mr. R. S. Lambert: "Pioneers of Social Progress—V, Edwin Chadwick and the Rule of the Blue-Book."
7.45 p.m.—A Military Band Concert. The Wireless Military Band, conducted by B. Walton O'Donnell, Joseph Farrington (Bass).
8.0 p.m.—"A Woman's Reason"—A Dramatic Play by Jeffery Farnol. Characters: Andromeda (Dorothy Holmes-Gore), The Bosun (Eric Derwent), Capt. Sir John Pettigrew, R.N. (Ben Webster), Dr. Angus McTavish (J. Nelson Ramsay), Major O'Brien (Ernest Digges), Parson Thurlow (Wyn Weaver), Jason Pettigrew (John Wycse), Warder (Charlton Hobbs).
8.35 p.m.—Military Band Concert (continued).
9.0 p.m.—Weather Forecast, and Second General News Bulletin.
9.15 p.m.—"I Remember": Sir Landon Ronald, "Reminiscences of Sir Herbert Tree, Sir Charles Santley, and Caruso."
9.30 p.m.—Local Announcements and Shipping Forecast.
9.35 p.m.—Charlot's Hour—X. A Light Entertainment specially designed and arranged by the well-known theatrical director André Charlot. Music by the B.B.C. Dance Orchestra, personally conducted by Jack Payne.
10.30 p.m.—12.0 midnight.—Dance Music: The Savoy Orpheans and Fred Elizalde and his Music, and The Savoy Tango Band, from the Savoy Hotel.

FRIDAY

10.15 a.m.—A Short Religious Service.
10.30 a.m.—Time Signal (Greenwich) and Weather Forecast.
11.0 a.m.—Gramophone Records.
12.0 noon.—A Sonata Recital. Sheridan Russell (Violoncello), Adelina de Lara (Pianoforte).
12.30 p.m.—An Organ Recital by Albert Howe, Organist and Director of the Choir, "St. Augustines, Kilburn, N.W." Relayed from St. Mary-le-Bow Church.
1.0-2.0 p.m.—Lunch-Time Music by the Hotel Metropole Orchestra (Leader, A. Mantovani), from the Hotel Metropole.
2.45 p.m.—The Grand National described by Geoffrey Gilbey, assisted by Mr. H. W. Hobbiss. Relayed from Aintree.
3.20 p.m. (approx.).—Musical Interlude.
3.30 p.m.—Mr. Allen Walker: "London's Great Buildings—XI, The Houses of Parliament."
3.45 p.m.—Musical Interlude.
3.50 p.m.—Concerts for Schoolchildren. Arranged by the People's Concert Society in co-operation with the B.B.C. Sixth Concert of Eight series relayed from the Hammer-smith Town Hall. The People's Concert Society's Orchestra, conducted by Charles Woodhouse. Principal Violin, George Stratton.
4.45 p.m.—Musical Interlude.
5.0 p.m.—Mr. C. Gendall Hawkins: "Easter Traditions."
5.15 p.m.—The Children's Hour.
6.0 p.m.—Frank Westfield's Orchestra, from the Prince of Wales Playhouse, Lewisham.
6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.
6.45 p.m.—Frank Westfield's Orchestra (continued).
7.0 p.m.—Mr. Percy Scholes, the B.B.C. Music Critic.
7.15 p.m.—The Foundations of Music: Bach's Sonatas for Viola da Gamba and Cembalo. Played by Howard Bliss (Violoncello) and Gordon Bryan (Pianoforte).
7.25 p.m.—Professor C. H. Desch: "Metals in the Use of Man—V, The New Metals." (S.B. from Sheffield).
7.45 p.m.—A Song Recital by Gertrude Johnson.
8.0 p.m.—National Symphony Concert. Elgar. Relayed from the People's Palace, Walter Widdop (Tenor), The National Symphony Orchestra (Leader, S. Kneale Kelley), conducted by the Composer. Orchestra: Overture, "Froissart."
8.25 p.m.—Walter Widdop and Orchestra: Scena from "King Olaf."
8.32 p.m.—Orchestra: First "Wand of Youth" Suite. Tone Poem "Polonia."
9.0 p.m.—Weather Forecast, Second General News Bulletin.
9.15 p.m.—National Symphony Concert (continued). Orchestra: Overture, "In the South." Contrasts—The Gavotte, 1700-1900.
9.38 p.m.—Walter Widdop and Orchestra: Meditation and Scena from "The Light of Life."
9.48 p.m.—Orchestra: Second "Wand of Youth," Suite "Pomp and Circumstance"—Marches, Nos. 2 and 4.
10.15 p.m.—Local Announcements; Shipping Forecast.
10.20 p.m.—Topical Talk.
10.35-11.0 p.m.—Variety: Muriel George and Ernest Butcher (Folk Songs and Duets), Elsie Carlisle (Syncopated Songs).
11.0 p.m.—12.0 midnight.—Dance Music. Ambrose's Band from the Mayfair Hotel.

SATURDAY

9.35-10.10 a.m.—The Boat Race. A Running Commentary on the famous Inter-Varsity Race.
10.15 a.m.—A Short Religious Service.
10.30 a.m.—Time Signal (Greenwich) and Weather Forecast.
1.0-2.0 p.m.—The Carlton Hotel Octet, directed by Renee Tappanier, from the Carlton Hotel.
2.40 p.m. (approx.).—England v. Scotland. A Running Commentary on the Second Half of the Association Football Match. Relayed from Wembley. Commentator, Mr. George F. Allison.
4.45 p.m.—A Ballad Concert. Dunstan Hart (Baritone), Hildegard Arnold (Violoncello), Dunstan Hart: Sombre Woods (Lully, arr. A. L.), Cornish Emigrant's Song (J. R. Dear), I know of two bright eyes (Myrra) (Clutsam),

4.52 p.m.—Hildegard Arnold: La Provencale, La Musette, La Matototte (Maraix).
5.0 p.m.—Dunstan Hart: The Jolly Plough Boy (Folk Song) (arr. Vaughan Williams), The Rio Grande (Sea Shanty) (arr. R. R. Terry), The Three Sons (Folk Song), Oh, no, John! (Folk Song) (arr. C. Sharpe).
5.8 p.m.—Hildegard Arnold: Roundelay (Trowell), Minuetto (Becker).
5.15 p.m.—The Children's Hour.
6.0 p.m.—A Ballad Concert. Hildegard Arnold (Violoncello). The Welsh Miners' Quartet.
6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.
6.50 p.m.—The Welsh Miners' Quartet.
7.0 p.m.—Mr. Basil Maine: "Next Week's Broadcast Music."
7.15 p.m.—The Foundations of Music. Bach's Sonatas for Viola da Gamba and Cembalo. Played by Howard Bliss (Violoncello) and Gordon Bryan (Pianoforte).
7.25 p.m.—Commander the Hon. J. M. Kenworthy, M.P., "The Position of Britain in the World of Boxing."
7.45 p.m.—An Operatic Programme. The Wireless Chorus and The Wireless Orchestra, conducted by Stanford Robinson. Mavis Bennett (Soprano), Frank Almgill (Flute Obligato), Herbert Simmonds (Baritone). Orchestra: Overture to "Zampa" (Hérold).
7.50 p.m.—Mavis Bennett (Soprano) and Orchestra. The Mad Scene (from "Lucia di Lammermoor") (Donizetti). (Flute Obligato: Frank Almgill).
8.0 p.m.—Chorus and Orchestra: Bell Chorus (from "I Pagliacci") (Leoncavallo).
8.5 p.m.—Herbert Simmonds (Baritone) and Orchestra: Madamina "Don Giovanni" (Mozart).
8.12 p.m.—Male Chorus and Orchestra: Hush, hush, silent, Unto a lonely abode directed (from "Rigoletto") (Verdi).
8.18 p.m.—Orchestra: Meditation (from "Thais") (Massenet).
8.24 p.m.—Chorus: Spread forth the sails (from "Mignon") (Ambrose Thomas).
8.28 p.m.—Orchestra: Dance of Bacchantes (from "Philemon and Baucis") (Gounod).
8.33 p.m.—Mavis Bennett and Herbert Simmonds and Orchestra: Duet from "Rigoletto," Act. II. (Verdi).
8.44 p.m.—Chorus and Orchestra: Palanca: Chorus of Maidens of Sandomir; Coronation Scene (from "Boris Godounov") (Moussorgsky).
9.0 p.m.—Weather Forecast, Second General News Bulletin.
9.15 p.m.—Mr. G. Watson Parker: "Let's get a Car—VII, Road Manners."
9.30 p.m.—Local Announcements, Shipping Forecast.
9.35 p.m.—"A Piccadilly Dally." A Revue arranged by Gordon McConnell. Miscellaneous Songs, Scenes and Sketches, including "Green Chartreuse, A Modern Murder Mystery, by Chester D. Heywood (by special arrangement with Norman Lee Swartout, Summit, New Jersey, U.S.A.). The Wireless Chorus and the B.B.C. Dance Orchestra, personally conducted by Jack Payne. The following artists will meander through the Metropolis: Vivienne Chatterton, Fred Gibson, Florence Bayfield, Frank Denton, Cyril Lidington and Tommy Handley.
10.30 p.m.—12.0 midnight.—Dance Music: The Savoy Orpheans, Fred Elizalde and his Music, and The Savoy Tango Band, from the Savoy Hotel.

CONTINUED FROM PAGE 450

6.50 p.m.—Light Music. The Henry Sensile Quintet, Herbert Thorpe (Tenor), Harry Brindle (Baritone).
8.0 p.m.—Chamber Music. Robert Maitland (Baritone), The London Flute Quartet: Robert Murchie, Gordon Walker, Frank Almgill, Charles Stainer (Bass Flute).
9.0 p.m.—Dance Music. The Belgravian from the Café de Paris, with Interludes from the Studio by George Lister (Entertainer).
10.0 p.m.—Weather Forecast and Second General News Bulletin.
10.15 p.m.—Sports Bulletin.
10.20-11.15 p.m.—A Mozart Programme. (From Birmingham.) The Birmingham Studio Augmented Orchestra (Leader, Frank Cantell). Conducted by Joseph Lewis. Noel Eadie (Soprano), Edna Iles (Pianoforte).

DAVENTRY (EXPERIMENTAL) PROGRAMME

(5 GB) (491.8 metres: 610 kc.) (25 kw.) (March 25-31)

SUNDAY

- 3.30 p.m.—*A Military Band Concert*: The Wireless Military Band, conducted by B. Walton O'Donnell, Gwladys Naish (Soprano). Sinclair Logan (Baritone).
 5.0 p.m.—*A Violin Recital* by Marjorie Hayward.
 5.20-5.30 p.m.—*Readings from the Old Testament*. (See 5XX.)
 7.50 p.m.—*Birmingham Cathedral*: The Bells. Followed by a Religious Service, conducted by the Rev. Canon S. Blofield, relayed from the Cathedral, Birmingham.
 8.45 p.m.—*The Week's Good Cause*. (See 5XX.)
 8.50 p.m.—Weather Forecast, General News Bulletin.
 9.0 p.m.—*A British Composers' Programme*. (From Birmingham.) The Birmingham Studio Augmented Orchestra (Leader, Frank Cantell) conducted by Joseph Lewis, Harold Williams (Baritone). Albert Sammons (Violin).
 10.30 p.m.—*Epilogue*.

MONDAY

- 3.0 p.m.—*Dance Music*: The B.B.C. Dance Orchestra, personally conducted by Jack Payne, Delys and Clarke (Entertainers).
 4.0 p.m.—*Lozells Picture House Organ*. (From Birmingham.) Frank Newman (Organ). Arthur Wrigglesworth (Baritone).
 5.0 p.m.—*A Ballad Concert*: Olive Goff (Soprano), Harry Costigan (Baritone), Mabel Rutland (Pianoforte).
 5.45 p.m.—*The Children's Hour*.
 6.30 p.m.—Time Signal, Greenwich; Weather Forecast, First General News Bulletin.
 6.45 p.m.—*Light Music*. (From Birmingham.) The Birmingham Studio Orchestra, conducted by Frank Cantell, Geoffrey Dams (Tenor).
 8.0 p.m.—*A Military Band Concert*. Linda Seymour (Contralto). The Wireless Military Band, conducted by B. Walton O'Donnell.

- 9.0 p.m.—*A Song Recital*, by Joan Elwes (Soprano) and Keith Falkner (Baritone).
 9.30 p.m.—Mr. Trevor Clarke reading "The New Accelerator," by H. G. Wells.
 10.0 p.m.—Weather Forecast, Second General News Bulletin.
 10.15 p.m.—*Dance Music*: The Lyricals, from the Café de Paris.
 11.0-11.15 p.m.—*George Fisher's Kit-Cat Band*, from the Kit-Cat Restaurant.

TUESDAY

- 3.0 p.m.—Paul Moulder's Rivoli Theatre Orchestra. From the Rivoli Theatre.
 4.0 p.m.—*A Military Band Concert* (from Birmingham). The City of Birmingham Police Band, conducted by Richard Wassell. John Booth (Tenor). Solo: Oboe, P. C. Saull. Sidonie Wasserman (Pianoforte).
 5.45 p.m.—*The Children's Hour*.
 6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.
 6.45 p.m.—*Dance Music*: The B.B.C. Dance Orchestra. Personally conducted by Jack Payne. Ursula Hughes (Light Songs).
 7.45 p.m.—*A Symphony Concert*. Relayed from the Colston Hall, Bristol. (S.B. from Cardiff). Flora Woodman (Soprano), Maurice Cole (Pianoforte). The Cardiff Station Orchestra, augmented by The Bristol Symphony Orchestra. Conducted by Sir Henry J. Wood.
 9.0 p.m.—*Owen Mase* (Pianoforte): Sonata No. 7 (Haydn).
 9.15 p.m.—*Symphony Concert* (continued). (S.B. from Cardiff).
 10.15 p.m.—Weather Forecast, Second General News Bulletin.
 10.30-11.15 p.m.—*In Chinese Waters*. (From Birmingham.) A Play by Vivian Tildmarsh. Produced by Stuart Vinden.

WEDNESDAY

- 3.0 p.m.—*Chamber Music*. (From Birmingham.) Nigel Dallaway (Pianoforte), Edgar Clarke (Oboe), S. C. Cotterell (Clarinet), W. A. Clarke (Bassoon), W. S. Yorke (Horn), Walter Heard (Flute), Alice Vaughan (Contralto).
 4.0 p.m.—*Dance Music*: The B.B.C. Dance Orchestra, personally conducted by Jack Payne, Ursula Hughes, Delys and Clark (Entertainers).
 5.45 p.m.—*The Children's Hour*.
 6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.
 6.45 p.m.—*Light Music*: The Birmingham Studio Orchestra, conducted by Frank Cantell.
 7.5 p.m.—Olive Sturgess (Soprano).
 8.0 p.m.—*Barclays Bank Musical Society's Concert*, relayed from the Queen's Hall. The National Anthem (Stanford Version).
 9.15 p.m.—*Vaudeville*. (From Birmingham.) Cyril Lidington (Light Songs), Stainless Stephen (Entertainer), Helen Alston (Entertainer at the Piano), Jack Venables (Syncopated Pianisms).
 10.0 p.m.—Weather Forecast, Second General News Bulletin.
 10.15 p.m.—*Dance Music*: Jack Hylton's Ambassador Club Band, directed by Ray Starita, from the Ambassador Club.
 11.0 p.m.—11.15 p.m.—*Jay Whidden's Band*, from the Carlton Hotel.

THURSDAY

- 1.10 p.m.—1.50 p.m.—*Dinner Hour Service*. (From Birmingham), relayed from St. Martin's Parish Church, Speaker, Canon Guy Rogers.
 3.0 p.m.—*A Symphony Concert*, relayed from the Winter Gardens, Bournemouth. The Bournemouth Municipal Symphony Orchestra (50 Performers), Solo Trumpet, Phil Ledington; Solo Flute, Jean Gennin; Solo Oboe, Joseph Craen; Solo Violin, Bertram Lewis. Soloist Niedzielski.
 4.30 p.m.—*An Afternoon Concert*.

FRIDAY

- 2.45 p.m.—*The Grand National*. Described by Geoffrey Gibbey, assisted by Mr. H. W. Hobbs. Relayed from Aintree.
 3.20 p.m.—*An Organ Recital* by Allan Brown, Organist and Musical Director, The City Temple, E.C. Relayed from St. Mary-le-Bow Church. Mona Quayle (Contralto).
 4.0 p.m.—*Dance Music*. The B.B.C. Dance Orchestra, personally conducted by Jack Payne. Ursula Hughes (Light Songs), Delys and Clark (Entertainers).

- (From Birmingham), relayed from Lozells Picture House. The Orchestra, conducted by Paul Rimmer. Henry Tooth (Bass). Frank Newman (Organ).
 5.45 p.m.—*The Children's Hour*.
 6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.
 6.45 p.m.—*Dance Music*: The B.B.C. Dance Orchestra, personally conducted by Jack Payne.
 7.30 p.m.—*A Choral Concert*, relayed from the Town Hall, Birmingham. The Birmingham Festival Choral Society's performance of the Mass in B minor (Bach). Artists: Carolin Hatchard (Soprano), Margaret Balfour (Contralto), Archibald Winter (Tenor), Harold Williams (Bass). The City of Birmingham Orchestra, conducted by Adrian C. Boulton. G. D. Cunningham (Organ).
 8.45 p.m.—*Studio Interlude*: Mary Willetts (Dramatic Recital).
 9.0 p.m. (approx.)—*Choral Concert* (continued).
 10.0 p.m.—Weather Forecast, Second General News Bulletin.
 10.15 p.m.—11.15 p.m.—*Spring* (From Birmingham). A Programme of Music, Song and Verse, introduced by Gladys Ward. The Birmingham Studio Orchestra, conducted by Joseph Lewis. Gwladys Naish (Soprano). Flute Obligatos by Walter Heard. The Birmingham Studio Chorus.

- 5.45 p.m.—*The Children's Hour*.
 6.30 p.m.—Time Signal (Greenwich), Weather Forecast and First General News Bulletin.
 6.45 p.m.—*Light Music*. The Dezso Kordy String Sextet, Catherine Stewart (Contralto), Glyn Dowell (Tenor).
 8.0 p.m.—*The Ballad of Black-Eyed Susan*. (From Birmingham.) Words by John Gay. Music by Alfred Reynolds.
 8.35 p.m.—*The Blind Beggars*. An Operetta in One Act. Words by H. B. Farnie. Music by Offenbach. The Birmingham Studio Orchestra, conducted by Joseph Lewis.
 9.0 p.m.—*Vaudeville*. (From Birmingham.) The Emile Grimshaw Banjo Quartet, Lena Copping and Partner (The Syncopated Two), Gwen Lewis (Entertainer at the Piano), Harry Hemsley (Child Impersonations), Leslie Taylor and his "Miami" Band.
 10.0 p.m.—Weather Forecast and Second General News Bulletin.
 10.15 p.m.—*Dance Music*. Kettner's Five, directed by Geoffrey Gelder, from Kettner's Restaurant.
 11.0-11.15 p.m.—*Ambrose's Band*, from the Mayfair Hotel.

SATURDAY

- 9.35-10.10 a.m.—*The Boat Race*. A Running Commentary on the famous Inter-Varsity Race by Mr. G. O. Nickalls and Mr. J. C. Squire.
 3.30 p.m.—*The Midland Pianoforte Sextet*. (From Birmingham.) Leader, Frank Cantell. Emilie Waldron (Soprano).
 4.30 p.m.—*Thé Dansant*. (From Birmingham.) Harold Turley and his Band. Relayed from Wimbush's Prince's Café. Wallace Cunningham (Entertainer).
 5.45 p.m.—*The Children's Hour*.
 6.30 p.m.—Time Signal (Greenwich), Weather Forecast and First General News Bulletin.

CONTINUED ON PAGE 449.

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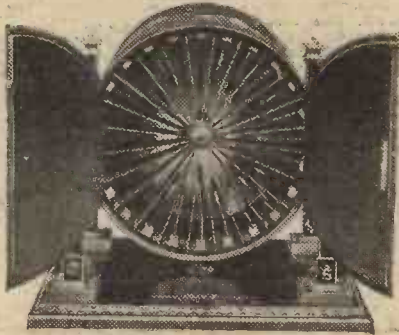
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PROGRAMMES FOR SUNDAY (March 25)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME.

BARCELONA (Spain)
Radio-Barcelona (EAJ1). WL. 344.8 m. (870 kc.); 1.5 kw.
11.0 a.m.—Chimes and Weather.
1.30 p.m.—Variety Concert.
5.0 p.m.—Symphony Concert from the "Gran Teatro del Liceo." Exchange in the Interval.
8.0 p.m.—Recitations.
8.20 p.m.—Quintet Selections. 1. "The Barber of Seville"—Overture (Rossini). 2. Doux Murmure (Gillet). 3. Moment Musical (Schubert).
8.40 p.m.—Sports Notes.
9.0 p.m.—Close Down.

BARCELONA (Spain)
Radio Catalana (EAJ13). WL. 462 m. (649 kc.); 1 kw.
9.0 p.m.—First Concert for foreign residents in Barcelona. Swiss Programme: 1. Opening Ceremony by the Swiss Consul, Mr. Frederic A. Ernest Nippel. 2. Pianoforte Solo by Professor Walter. 3. Song Recital by Pupils of the Swiss School: (a) Wanderlust (Richter); (b) Gebet! (Weber); (c) Mon beau pays, debout! (Attenhofer); (d) Abendlied (Huber); (e) Helvetia (Naegeli); (f) Reiters Morgenlied—Folk Song; (g) Roulez, tambours! (Amiel). 4. Programme of Popular Swiss Songs by members of the "Helvetia Club"—Soloists—Mr. Theodore Schuppisser and Miss Lina Goerner. 5. Orchestral Concert: (a) Turkish March (Theimer); (b) All round the world—Pot pourri (Yoshitomo); (c) Aisha-Indian Interlude (Lindsay); (d) Serenade (Galkine); (e) Temple Dance (Profés); (f) Suleika—Arab Interlude (Lindsay); (g) Swiss and Spanish National Anthems.

BERLIN (Germany)
Königswusterhausen. WL. 2,250 m. (240 kc.); 35 kw.
8.0 a.m.—1.0 p.m.—Programme from Voxhaus.
1.0 p.m.—Photography Talk.
1.30—5.0 p.m.—Programme from Voxhaus.
5.0 p.m.—Health Talks.
6.0 p.m.—Talk, "The Tragic and Suffering."
7.0 p.m.—Programme from Voxhaus.

BERLIN (Germany)
Voxhaus. WL. 484.6 m. (619 kc.); 4 kw.
8.0 a.m.—Morning Recital.
10.30 a.m.—Symphony Concert.
1.0 p.m.—Agricultural Talks.
2.30 p.m.—Children's Corner.
3.0 p.m.—Talk, "Animals in Legend and Poem."
3.30 p.m.—Concert: 1. "Il Guarany"—Overture (Comes). 2. Waltz from "Der Opernball" (Hueberger). 3. Selection from "The Girl of the Golden West" (Puccini). 4. Minuet (Beethoven). 5. Viennese Dance No. 2 (Friedmann-Gärtner). 6. Selection from "Der Evangelist" (Kienzl). 7. Longing-Song (Tosti). 8. Rhapsody No. 2 (Liszt).
5.40 p.m.—Talks.
7.0 p.m.—"Die Gold'ne Meisterin"—Operetta (Eysler). From the Künstler-Theater. News in the interval. Followed by Dance Music from the Restaurant Burgund.
11.30 p.m. (approx.)—Close Down.

BERNE (Switzerland)
Radio-Berne. WL. 411 m. (730 kc.); 1.5 kw.
10.0 a.m.—Protestant Address.
12.0 (noon)—Time and Weather.
12.5 p.m.—Concert.
1.30 p.m.—Talk on "The Choice of a Career."
2.30 p.m.—The Kursaal Orchestra.
6.30 p.m.—Time and Weather.
6.35 p.m.—Sports Talk.
7.0 p.m.—A Fairy Tale for Violin and Bells (Kämpfert).
8.0 p.m.—The Kursaal Orchestra. Sports Notes and News in the interval.
9.30 p.m. (approx.)—Close Down.

BRESLAU (Germany)
Schlesische Funkstunde. WL. 322.6 m. (930 kc.); 4 kw. Relayed by Gletwitz on 250 m. (1,200 kc).
6.50 p.m.—Talk, "Spring is here!"
7.30 p.m.—"Das Frühstück in Genoa"—Play (Harlan). News.
9.30 p.m.—Dance Music.
11.0 p.m. (approx.)—Close Down.

BRÜNN (Czechoslovakia)
Komarov. WL. 441 m. (680 kc.); 3 kw.
Transmits at intervals from 7.55 a.m.
5.0 p.m.—German Transmission.
5.20 p.m. (approx.)—Selection from "Lohengrin" (Wagner).
6.0 p.m.—Concert by Blind Artists.
7.0 p.m.—Programme from Prague.
9.20 p.m.—Military Concert.

BRUSSELS (Belgium)
Radio Belgique. WL. 508.5 m. (590 kc.); 1.5 kw.
3.0 p.m.—Concert arranged by "Le Rappel," of Charleroi, relayed from the Conservatoire de Charleroi. 1. Requiem (Brahms). 2. Judith (Honegger).
7.45 p.m.—Le Radio Chronique.
8.15 p.m.—Last Concert arranged by "La Meuse," at Liège, in commemoration of the Second International Wireless Exhibition at Liège. 1. "Le Roi d'Ys"—Overture (Lalo). 2. Mlle. J. Henrad. 3. "William Tell"—Selection (Rossini). 4. Elegy (Faure)—Cello Solo. 5. Petite Suite (Bizet). 6. M. Delpiesants. 7. Suite Caucasiennne (Ivanoff). 8. Mlle. Henrad. 9. En bateau (Debussy). 10. Hungarian Rhapsody, for Cello (Popper). 11. Yzel (Pierné). 12. M. Delpiesants. 13. Nut-Cracker Suite (Tchaikovsky).
10.15 p.m.—News.
10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)
Magyar Radio Ujsag. WL. 555.8 m. (540 kc.); 3 kw.
Transmits at intervals from 8.0 a.m.
9.0 a.m.—Mass, followed by Time and Orchestral Concert.
2.30 p.m.—Agricultural Talk.
3.0 p.m.—Children's Stories.
3.50 p.m.—Russian Concert.
5.2 p.m.—"Nincs ennek párom"—Play with Musical Setting (Harsányi).
6.30 p.m.—Talk.
7.10 p.m.—Sports Notes.
7.20 p.m.—Vocal and Instrumental Concert.
8.20 p.m.—Tzigane Music.
10.0 p.m.—Dance Music.

COLOGNE (Germany)
Westdeutscher Rundfunk. WL. 283 m. (1,060 kc.); 4 kw.
8.0 a.m.—Morning Recital.
10.0 a.m.—Talk on "Goethe."
10.20 a.m.—Agricultural Talk.
10.40 a.m.—See Langenberg.
11.10 a.m.—Recitations.
12.0 noon.—Chamber Music. 1. Trio in D minor (Thomas). 2. Variations on a Viennese Drinking Song (Gal). 3. Trio in B flat major (Schubert).
1.30 p.m.—Literary Talk.
1.55—2.40 p.m.—See Langenberg.
2.40 p.m.—Reading.
3.10 p.m.—Talk, "Exploration in Unknown Dalmatia."
3.30 p.m.—Pianoforte Recital. 1. (a) Dämmerung, (b) Vale carissima (Kau). 2. Wie glänzt der helle Mond (Woyrsch). 3. Pianoforte Fantasia, Op. 77 (Beethoven). 4. (a) Schweigende stille Nacht, (b) Schwefelholzle (Trunk). 5. (a) Minnelied (de la Hale, arr. Schreiber), (b) Wiegenlied (Brahms, arr. Zander). 6. (a) Mädlein, so schön und hold (Kirch), (b) Zieh hinaus beim Morgengraun (Dregert). 7. G'schichten aus dem Wiener Wald (Strauss-Schütt). 8. (a) Horch was kommt (arr. Wolfrum), (b) O wie herbe ist das Scheiden (Silcher), (c) Meister und Gesell (Zelter).
5.0 p.m.—Sacred Music.
6.5 p.m.—See Langenberg.
6.30 p.m.—Reading.
7.0 p.m.—Sports Notes.
7.15 p.m.—Dance Concert. 1. Polonaise in A major (Liszt). 2. Minuet (Boccherini). 3. Die Schönbrunner—Waltz (Lanner). 4. Gavotte Louis XIII. (Lanner). 5. An der Elbe—Waltz (Strauss). 6. Klänge aus der Heimat—Ländler (Gungl). 7. Krolls Balklänge—Waltz (Lumbye). 8. Die Zann—Mazurka (Ganne). 9. Frühling-kinder Waltz (Waldteufel). 10. "Torch Dance" (Meyerbeer). 11. Alt-Wien—Waltz (Kremsler). 12. (a) Blues from "Jonny spielt auf" (Krenek), (b) Shimmy (Eysoldt). 13. Wiener Blut—Waltz (Strauss). 14. (a) Tausend rote Rosen—Boston (Benatzky), (b) Donna Vatra—Tango (Köpping). 15. Mondnacht auf der Alster—Waltz (Fétras). 16. (a) Foxtrost from "Nur du" (Kollo), (b) Blues from "Nur du" (Kollo). 17. Nach dem

Ball—Valse-intermezzo (Gillet). 18. Salve Colonia—March (Kuhn). Followed by Sports Notes, Concert and Dance Music.
11.0 p.m. (approx.)—Close Down.

COPENHAGEN (Denmark)
Copenhagen Radio. WL. 337 m. (890 kc.); 1 kw. Relayed by Kalundborg on 1,153.8 m. (260 kc).
9.0 a.m.—Divine Service.
10.30 a.m.—German Lesson.
2.0 p.m.—Concert.
4.0 p.m.—Divine Service.
5.30 p.m.—Children's Corner.
6.30 p.m.—Talk on "Sweden."
7.0 p.m.—"Holiday Guests"—Musical Play (Hostrup).
8.30 p.m.—News.
8.45 p.m.—Concert from the Works of Johann Strauss. 1. "Die Fledermaus"—Overture. 2. Tales of the Vienna Woods—Waltz, Op. 325. 3. Selection from "The Gipsy Baron." 4. (a) The Blue Danube, Op. 314, (b) Czardas from "Die Fledermaus." 5. Gallop from "Die Fledermaus."
9.45 p.m.—Dance Music from Nimb's Restaurant.
11.30 p.m. (approx.)—Close Down.

CORK (Ireland)
Cork Broadcasting Station (6CK). WL. 400 m. (750 kc.); 1.5 kw.
8.30 p.m.—The Station Quintet.
8.45 p.m.—May Dobbs (Mezzo-Soprano).
9.0 p.m.—T. J. O'Leary (Baritone).
9.15 p.m.—Frau T. Fleischmann (Pianist).
9.35 p.m.—Keith Falkner (Bass).
9.45 p.m.—May Dobbs.
10.0 p.m.—T. J. O'Leary.
10.10 p.m.—"Sonata for Violin and Pianoforte, Op. 13" (Grieg), by Elza and Ursula Hüser.
10.30 p.m.—Keith Falkner.
10.45 p.m.—Station Quintet.
11.0 p.m.—National Anthem and Close Down.

CRACOW (Poland)
Polskie Radio. WL. 566 m. (530 kc.); 1.5 kw.
9.15 a.m.—Divine Service, relayed from the Cathedral of Posen.
11.0 a.m.—Carillon from Notre Dame, Time and Weather.
11.10 a.m.—Programme relayed from Warsaw.
2.0 p.m.—Weather.
4.20 p.m.—Variety.
6.10 p.m.—Talk.
6.35 p.m.—Talk on "The Polish Soldier, and Soldier Songs."
7.0 p.m.—Carillon from Notre Dame.
7.30 p.m.—Orchestral, Vocal and Instrumental Concert.
9.0 p.m.—Programme relayed from Warsaw.
9.30 p.m.—Relay of a Concert from a Restaurant.
10.30 p.m. (approx.)—Close Down.

DUBLIN (Ireland)
Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc.); 1.5 kw.
8.30—11.5 p.m.—Programme from Cork.

FRANKFURT-am-MAIN (Germany)
Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc.); 4 kw. Relayed by Cassel on 252.1 m. (1,190 kc).
Transmits at intervals from 7.30 a.m.
5.30 p.m.—Talk, "Food in the light of Dietetics."
6.0 p.m.—"Arabia between the Continents," Talk and Reading.
7.0 p.m.—Transmission arranged by the Frankfurter Zeitung.
7.30 p.m.—Symphony Concert. 1. Symphony in D major (Ph. E. Bach). 2. Concerto grosso in B flat major, Op. 3, No. 1 (Handel). 3. Symphony in C major (Mozart). Sports News, followed by Dance Programme.
11.30 p.m. (approx.)—Close Down.

HAMBURG (Germany)
NORAG (ha, in Morse). WL. 395 m. (757 kc.); 4 kw. Relayed by Bremen on 272.7 m. (1,100 kc); Hanover, 297 m. (1,009 kc); and Kiel, 298 m. (1,076 kc).
Transmits at intervals from 7.30 a.m.
10.30 a.m. (Hamburg and Bremen).—Concert from Restaurant Ostermann.
11.30 a.m.—Talk, "The Commercial Life of German Lands."
12.50 p.m.—Talk for Stamp Collectors.
2.30 p.m.—Children's Corner.
3.0 p.m.—Concert.
4.0 p.m.—Talk, "Runholt's End and Return," from Kiel.
4.30 p.m.—Talk, "An Excursion to Pompeii with the 'Oceana,'" from

5.0 p.m.—Concert.
6.0 p.m.—Talk, "The Experimental Murder."
6.30 p.m.—Talk, "Physical Exercises."
7.0 p.m.—Passion Music, from St. Jacob's Church. 1. Psalm 137 for two a-cappella choirs, Op. 4 (Kurt Thomas). 2. St. Mark Passion Music for mixed choir, Op. 6 (Thomas).
8.30 p.m.—Concert of Wind Instruments followed by News, Topical Talk and Concert from Café Wallhof (Hamburg and Kiel).
10.30 p.m. (Hamburg, Bremen and Kiel).—Dance Music.
11.30 p.m. (approx.)—Close Down.

HILVERSUM (Holland)
Algemeene Vereeniging Radio-Omroep. WL. 1,069 m. (280.5 kc.); 5 kw.
10.10 a.m.—Divine Service.
12.10 p.m.—Trio Concert.
1.40 p.m.—Concert from a Church at Wormerveer: 1. Concerto in D minor (Handel). 2. Recitative and Aria for Soprano from "The Messiah" (Handel). 3. Sonata in G minor for Violin and Organ (Tartini). 4. The Fifth Symphony for Organ (Widor). 5. Soprano Solos with Organ Accompaniment: (a) Aria from "Il Sedecia, re di Gerusalem" (Scarlatti); (b) Hör mei Bitten, Herr neige dich zu mir—Hymn (Mendelssohn). 6. Organ Solos: (a) Réverie (Pierné); (b) Passacaglia (Röntgen). 7. Violin and Organ Duets: (a) Larghetto and Allegretto (Nardini); (b) Mieux (Porpora). 8. The Third Choral in A. (Franck).
3.10 p.m.—Recital of Dutch Songs. In the Interval, Talk.
4.25 p.m.—Sonata, op. 7 (Beethoven) and Talk.
5.40 p.m.—Concert: 1. "Vert Vert"—Overture (Offenbach). 2. Suite—printanier (Wesley). 3. Spring Serenade (Drda). 4. Variations on "s Kommt ein Vogel geflogen" (Ochs). 5. Selection from "Il Trovatore" (Verdi). 6. Lagunen Waltz (Joh. Strauss). 7. Bola Interlude (Grit). 8. March from "Der Bettelstudent" (Millocker).
7.40 p.m.—News and Weather.
7.50 p.m.—"The Seasons"—Oratorio (Haydn). In the Interval: Trio for Violin, Cello and Pianoforte (Haydn).
10.40 p.m. (approx.)—Close Down.

HUIZEN (Holland)
WL. 1,950 m. (154 kc.); 4 kw.
8.10 a.m.—Mass from the Seminary at Gulemborg.
12.10 p.m.—Trio Concert.
1.10 p.m.—Talk.
1.20 p.m.—Religious Address.
2.10 p.m.—Orchestral Concert from the "Salle de Concert," Amsterdam.
3.40 p.m.—Programme for Hospitals.
5.30 p.m.—Divine Service from the Lutheran Church, Amsterdam.
7.10 p.m.—Bible Reading.
7.40 p.m.—Orchestral and Choral Concert.
10.10 p.m.—Epilogue.

KÖNIGSBERG (Germany)
Ostmarken Rundfunk. WL. 330.3 m. (908 kc); 1 kw. Relayed by Danzig on 272.7 m. (1,100 kc).
Transmits at intervals from 8.0 a.m.
10.15 a.m.—Orchestral Concert.
2.30 p.m.—Recitations.
3.45 p.m.—Orchestral Concert.
5.45 p.m.—Esperanto Lesson.
6.15 p.m.—Chess Talk.
7.0 p.m.—"Das Dorf ohne Glocke"—Musical Play (Künnecke).
9.20 p.m.—News and Sports Notes. Followed by Programme from Voxhaus.

KOVNO (Lithuania)
Radio Kaunas. WL. 2,000 m. (150 kc); 15 kw.
2.30 p.m.—Children's Corner.
3.30 p.m.—Health Talk.
4.0 p.m.—Talk, "Agriculture and Life."
4.25 p.m.—Concert.
4.35 p.m.—Agricultural Notes.
5.0 p.m.—Vilna Programme.
5.30 p.m.—Talk for Housewives.
6.0 p.m.—Time and Weather.
6.5 p.m.—Political Review.
6.30 p.m.—"Carmen"—Opera (Bizet) from the National Theatre.

LANGENBERG (Germany)
Westdeutscher Rundfunk. WL. 470 m. (638 kc); 25 kw. Programme also for Aix-la-Chapelle, 401 m. (748 kc); Cologne, 283 m. (1,060 kc); and Münster, 241.9 m. (1,240 kc).
8.0—10.40 a.m.—Programme from Cologne.
10.40 a.m.—Taxation Talk from Münster.
11.10 a.m.—1.55 p.m.—Programme from Cologne.
1.55 p.m.—Chess Talk from Düsseldorf.
2.20 p.m.—Westphalian Ballads from Dortmund.
2.40—6.5 p.m.—Programme from Cologne.
6.5 p.m.—Talk, "Dürer's 'Apocalypse.'"
6.30—11.0 p.m.—Programme from Cologne.

LAUSANNE (Switzerland)
Société Romande de Radiophonie (RH2). WL. 680 m. (441 kc); 0.6 kw.
9.0 a.m.—Address from Geneva.
3.0 p.m.—Programme from Berne.
7.15 p.m.—News.
7.25 p.m.—Studio Address.
8.0 p.m.—Concert.

LEIPZIG (Germany)
Mitteldeutscher Rundfunk. WL. 366.3 m. (819 kc); 4 kw. Relayed by Dresden on 275.2 m. (1,050 kc).
Transmits at intervals from 7.30 a.m.
5.30 p.m.—Talk, "Dancing and Intellect."
6.0 p.m.—Astronomy Talk.
6.30 p.m.—"In the Lover Harbour"—Drama (Cecchi and Spinelli).
8.15 p.m.—Dance Music.
9.30 p.m.—Programme from Voxhaus.

MADRID (Spain)
Union Radio (EAJ7). WL. 375 m. (800 kc); 1.5 kw.
8.0 p.m.—Dance Music. Relayed from the Hotel Nacional.
10.0 p.m.—"Asturian Programme." 1. Asturian Songs—Suite (Villa). 2. Popular Songs. 3. "La Praviara"—Asturian Sketch (Aza). 4. Asturian Songs. 5. Asturian Selections for Sextet (Villa). 6. Popular Songs. 7. Selections contd. (Villa).
12.0 midnight.—Dance Music.
12.30 a.m. (approx.)—Close Down.

MILAN (Italy)
Unione Radiofonica Italiana (RMI). WL. 526.3 m. (570 kc); 7 kw.
9.30 a.m.—Sacred Music.
11.0 a.m.—Government Report.
3.0 p.m.—Variety Concert.
4.30 p.m.—Children's Corner.
7.45 p.m.—Time.
7.47 p.m.—"Carmen"—Opera (Bizet). News in the interval.
9.55 p.m.—News, Sports Notes, and Close Down.

MUNICH (Germany)
Deutsche Stunde in Bayern. WL. 535.7 m. (560 kc); 4 kw. Relayed by Nürnberg on 303 m. (990 kc); and Augsburg on 566 m. (530 kc).
Transmits at intervals from 10.0 a.m.
2.30 p.m.—Orchestral Concert.
4.35 p.m.—Talk, "The Oratorio and German People."
5.5 p.m.—Trio Concert.
6.0 p.m.—Sports Notes.
6.15 p.m.—Talk on the following transmission.
6.30 p.m.—"The Flying Dutchman"—Opera (Wagner), relayed from the National Theatre.
9.20 p.m.—News.
9.40 p.m.—Concert from the Park Hotel, Munich.
10.30 p.m. (approx.)—Close Down.

NAPLES (Italy)
Unione Radiofonica Italiana (INA). WL. 333.3 m. (900 kc); 1.5 kw.
9.0 a.m.—Concert of Sacred Music.
3.45 p.m.—Children's Corner.
4.0 p.m.—Variety Concert.
7.50 p.m.—Concert. 1. "Oberon"—Overture (Weber). 2. Bass Solo from "I masnadieri" (Verdi). 3. Soprano Solo from "Poluto" (Donizetti). 4. Baritone Solo from "The Force of Destiny" (Verdi). 5. Maria di Maddala (Pedrillo). 6. Duet for Bass and Baritone from "Rigoletto" (Verdi). 7. Le Maschere (Masagnì). 8. Duet for Soprano and Bass from "The Force of Destiny" (Verdi). 9. Baritone Solo from "Maria di Rohan" (Donizetti). 10. Soprano Solo from "Cavalleria Rusticana" (Masagnì). 11. Bass Solo from "The Damnation of Faust" (Berlioz). 12. Chorus and Wedding March from "Lohengrin" (Wagner). 13. Duet for Soprano and Baritone from "Il Trovatore" (Verdi). 14. "Le Cid"—Overture (Thomas). Time and News in the Interval.

9.55 p.m.—Calendar, Programme Announcements and Close Down.

Programmes for Sunday.—(Cont.)

OSLO (Norway)

Kringkastingselskapet. **WL.**
 461.5 m. (650 kc.); 1.5 kw.
 Relayed by *Hamar* on
 555.8 m. (540 kc.); *Forsgrund*, 500 m.
 (600 kc.); *Fredrikstad*, 434.8 m.
 (690 kc.); *Notodden*, 411 m.
 (730 kc.); and *Rjukan*, 448 m.
 (670 kc.).
 9.20 a.m.—Chimes and *Divine Service*,
 followed by Recital for Violin and
 Organ.
 12.0 noon.—Ski-ing Competition from
Morgedal.
 4.50 p.m.—Chimes and *Divine Service*.
 6.30 p.m.—Talk, "The Scandinavian
 Press."
 7.2 p.m.—Talk, "The Parks of
 Old Oslo."
 7.30 p.m.—Orchestral Concert.
 8.30 p.m.—Violin Recital.
 9.15 p.m.—Topical Talk.
 9.30 p.m.—Concert.
 10.0 p.m.—Dance Music from the
 Hotel Bristol.
 11.0 p.m. (approx.)—Close Down.

PARIS (France)

Ecole Supérieure (FPTT). **WL.**
 458 m. (655 kc.); 0.5 kw.
 Transmits at intervals from 8.0 a.m.
 1.30 p.m.—Orchestral Concert.
 3.0 p.m.—Concert.
 5.15 p.m.—*Pasdeloup Concert*.
 7.15 p.m.—Radio-Journal de France.
 8.30 p.m.—Talk, "The Infinite."
 9.0 p.m.—Concert from the Works of
 Widor, Dupré, Bach and Couperin.
 Followed by *Dance Music*.
 12.0 midnight (approx.)—Close Down.

PARIS (France)

Eiffel Tower (FL). **WL.** 2,650 m.
 (113 kc.); 5 kw.
 7.56 a.m.—Time Signal (on 32 m.;
 9,375 kc.).
 9.26 a.m.—Time Signal.
 5.0 p.m.—*Pasdeloup Concert*.
 7.0 p.m.—Weather.
 7.30 p.m.—*Le Journal Parlé*. Talks
 on "Health," "Sports," etc.
 At 7.56 p.m.—Time Signal (on
 32 m.; 9,375 kc.).
 8.30 p.m.—Educational Programme.
 Talks on "Woman and the Law,"
 etc.
 10.26 p.m.—Time Signal.

PARIS (France)

Petit Parisien. **WL.** 340.9 m. (880
 kc.); 0.5 kw.

PARIS (France)

Radio-Paris (CFR). **WL.** 1750 m.
 (171 kc.); 3 kw.
 Transmits at intervals from 8.0 a.m.
 12 noon—Concert of Sacred Music
 and Religious Address, followed
 by News.
 12.45 p.m.—Concert. 1. La Estocada
 —Paso doble (Seras). 2. Tennis
 Girl—Waltz (Laurent). 3. Au
 fil du rêve (Margis). 4. Pianoforte
 Solos, (a) Al Baile del Candil
 (Seras), (b) L'Horloge d'Alsace
 (Smet). 5. Selection from "Samson
 and Delilah" (Saint-Saëns).
 6. Bilboquet in Selections from his
 repertoire. 7. Zogazig (de
 Tavera). 8. Selection from
 "Carmen" (Bizet). 9. Roses et
 coeurs (Bound). 10. Au pays de
 lotus d'or (Bounod).
 5.0 p.m.—Lenten Service from Notre-
 Dame.
 7.0 p.m.—Agricultural Report and
 News.
 8.15 p.m.—"Radio-Paris Circus."
 8.45 p.m.—Dance Music by Mario
 Cazes and his Orchestra. News
 in the Interval.

PITTSBURGH (U.S.A.)

Westinghouse Electric (KDKA).
WL. 315.6 m. (950 kc.); 50 kw.
 Transmits at intervals from 3.45 p.m.
 11.15 p.m.—Orchestral Selections.
 11.30 p.m.—"Travelogue" from
 WJZ, New York.
 12.0 midnight—Time, and *Divine*
Service.
 The following programme from
 WJZ, New York.
 1.15 a.m. (Monday). "Collier's
 Radio Hour."
 2.15 a.m.—Paula Hemminghaus.
 2.30 a.m.—Vibrant Melodies.
 2.45 a.m.—Utica Jubilee Singers.
 3.15 a.m.—"Don Amazo."

POSEN (Poland)

Polskie-Radio. **WL.** 344 m. (872
 kc.); 1.5 kw.
 Transmits at intervals from 9.15 a.m.
 5.30 p.m.—French Talk.
 5.50 p.m.—Topical Talk.
 6.10 p.m.—Variety.
 7.0 p.m.—Talk.
 7.30 p.m.—Concert from *Posen* and
Warsaw.
 9.30 p.m.—Weather and News.
 9.50 p.m.—Dance Music.
 11.0 p.m. (approx.)—Close Down.

ROME (Italy)

Unione Radiofonica Italiana (IRO).
WL. 448.4 (669 kc.); 3 kw.
 9.15 a.m.—Sacred Music.
 4.0 p.m.—Vocal and Instrumental
 Concert.
 5.0 p.m.—Dance Music.
 7.45 p.m.—Concert. 1. Holberg—
 Suite (Grieg). 2. March from
 "The Legend of St. Elizabeth"
 (Liszt). 3. Talk, "Comedy and
 Art in the Seventeenth and
 Eighteenth Centuries." 4. Con-
 certo in G minor, Op. 25 (Mendels-
 sohn). 5. Fashion Talk. 6.
 Rhapsody for Clarinet (Debussy).
 7. Tenor Solos from "Cavalleria
 Rusticana" (Mascagni). 8.
 Spanish Caprice (Rimsky-
 Korsakoff).
 9.55 p.m.—News and Close Down.

SCHENECTADY (U.S.A.)

General Electric Company (WGY).
WL. 379.5 m. (790 kc.); 50 kw.
 Programme relayed by 2XAD on
 21.96 m. (13,661 kc) from 10.30
 p.m.—3.30 a.m. (Monday).
 Transmits at intervals from 3.30 p.m.
 10.30 p.m.—2.0 a.m. (Monday)—
 Programme from *New York*—
 Acousticon Programme.
 11.0 p.m.—National Symphony
 Orchestra.
 12.0 (midnight)—Musical Programme.
 12.20 a.m. (Monday)—Capitol Theatre
 Programme.
 2.0 a.m.—Talk, "Our Government."
 2.15 a.m.—Time.
 The following programme from *New*
York.
 2.17 a.m.—Atwater Kent Hour.
 3.15 a.m.—Biblical Drama.
 3.45 a.m. (approx.)—Close Down.

STOCKHOLM (Sweden)

Radiotjänst (SASA). **WL.** 453.8 m.
 (661 kc.); 1.5 kw. Relayed by
Motala on 1,380 m. (217 kc.);
Göteborg, 416.7 m. (720 kc.);

Malnå, 260.9 m. (1,150 kc.); and
Sundsvall, 545.6 m. (550 kc.).
 10.0 a.m.—Divine Service.
 12.30 p.m.—Symphony Concert from
Malnå.
 2.30 p.m.—Talk, Recitations and Song.
 4.0 p.m.—Children's Corner.
 5.0 p.m.—Divine Service.
 6.15 p.m.—"La Dame Blanche"—
 Opera (Boieldieu).
 8.40 p.m.—Chamber Music.
 9.30 p.m. (approx.)—Close Down.

STUTT GART (Germany)

Süddeutscher Rundfunk. **WL.**
 380.7 m. (788 kc.); 4 kw.
 10.15 a.m.—Catholic Morning Re-
 cital, followed by Promenade
 Concert.
 2.0 p.m.—Relay of Football Match,
 Mannheim-Waldhof v. Stuttgart-
 Kickers, from *Mannheim*.
 4.0 p.m.—Concert.
 6.15 p.m.—Otto Lautenschlager reads
 from his own works.
 7.0 p.m.—Chamber Music.
 8.15 p.m.—Cabaret Concert.

TOULOUSE (France)

Radiophonie du Midi. **WL.** 391 m.
 (767 kc.); 3 kw.
 12.30 p.m.—Orchestral Music.
 12.45 p.m.—Concert. 1. "Lysis-
 trata"—Overture (Lincke). 2.
 Barcarolle du Rialto (Richepin). 3.
 Foxtrot. 4. Contes d'Arabie
 (Puget). 5. "Les Mousquetaires
 au Couvent"—Selection (Varney).
 6. Canto nostalgico (Bosso). 7.
 Sylvestris—Tango. 8. Piesnia
 (Cooch). 9. Valse. 10. "La Tosca"
 —Selection (Puccini). 11. Chanson
 napolitaine (Raynal). 12. Tzigania
 (Cannas). 13. Feuille d'album
 (Chabrier). 14. Sedibal—One-step.
 2.10 p.m.—Address and Psalms.
 8.15 p.m.—Talk, "Nice, the Côte
 d'Azur."
 8.30 p.m.—Opera Relay from the
 Capitol Theatre.
 12.0 midnight (approx.)—Close Down.

VIENNA (Austria)

Radio-Wien. **WL.** 576 and
 517.2 m. (520 and 580 kc.); 0.75
 and 5 kw. Programme relayed by
Graz on 357.1 m. (840 kc), *Inns-*
bruck, 294.1 m. (1,020 kc) and
Klagenfurt, 272.7 m. (1,100 kc.)
 Transmits at intervals from 8.0 a.m.
 10.0 a.m.—Symphony Concert.
 3.0 p.m.—Concert. 1. Laterndel
 March (Filtl). 2. "Alessandro
 Stradella"—Overture (Flotow). 3.

Valse des castagnettes (Fechner).
 4. Song Selections from "Mignon"
 (Thomas). 5. Violin Solo (Drdla).
 6. Chant D'amour—Valse chanson
 (Drdla). 7. Flutz Selection from
 "Faust" (Gounod). 8. Maig-
 löckchen—Waltz (Keldorfer). 9.
 Song. 10. March.
 4.40 p.m.—Debussy Chamber Music.
 1. Pianoforte Selections. 2. Songs.
 3. Sonata in G minor for Flute,
 Viola and Harp.
 5.45 p.m.—Poetry Recital.
 6.45 p.m.—"Der Orlov"—Operetta
 (Granichstaedten). Followed by
 Dance Music from the Bristol Hotel.

WARSAW (Poland)

Polskie-Radio. **WL.** 1,111.1 m.
 (270 kc.); 10 kw.
 Transmits at intervals from 9.15 a.m.
 11.10 a.m.—Orchestral Concert—
 Works of Sibelius, Sinding, Svend-
 sen and Järnefelt.
 2.15 p.m.—"Les Fantômes"—Lyric
 with Musical Setting for Orchestra,
 Choir and Soloists (Moniuszko and
 Mickiewicz).
 6.10 p.m.—Talk, "The Book and the
 Library."
 6.35 p.m.—Talk, "The Charm of the
 Land of Carmen."
 7.30 p.m.—Concert from *Warsaw* and
Posen.
 9.0 p.m.—Time, News and Aviation
 Report.
 9.30 p.m.—Dance Music.
 10.30 p.m.—Close Down.

WILNO (Poland)

Polskie-Radio. **WL.** 435 m. (689
 kc.); 0.5 kw.
 Transmits at intervals from 9.15 a.m.
 5.10 p.m.—Talk in Lithuanian.
 5.35 p.m.—Talk.
 6.0 p.m.—News.
 6.25 p.m.—Time and Variety.
 6.35 p.m.—Talk, "Wilno under the
 Sigismund Dynasty."
 7.30 p.m.—Programme from *Warsaw*.
 9.0 p.m.—News.
 9.30 p.m.—Dance Music.

ZAGREB (Yugoslavia)

Radioklub-Zagreb. **WL.** 310.5 m.
 (966 kc.); 0.35 kw.
 4.0 p.m.—Dance Music from the
 "Club-Bar."
 7.30 p.m.—Announcements.
 7.35 p.m.—Chamber Music. 1.
 Quartet, Op. 54, No. 2 (Haydn).
 2. Quartet (Schubert).
 8.50 p.m.—News.
 9.0 p.m.—Musical Selections.

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PROGRAMMES FOR MONDAY (March 26)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME

BARCELONA (Spain)

Radio-Barcelona (EAJ1). WL. 344.8 m. (870 kc.); 1.5 kw. Transmits at intervals from 11.0 a.m. 6.0 p.m.—Exchange.
6.10 p.m.—*Quintet Selections*.
8.30 p.m.—Talk, "Old Pirates."
8.45 p.m.—Esperanto Talk.
9.0 p.m.—Chimes and Weather.
9.5 p.m.—Exchange and News.
9.10 p.m.—Humorous Review in Verse.
9.20 p.m.—Selections by the "Cobla" Barcelona.
10.0 p.m.—Exchange Closing Prices.
10.5 p.m.—*Tenor Solos*. 1. Minuetto de Exaudet (Weckerlin). 2. Romance from Act III of "Manon" (Massenet). 3. Cancó de comiat (Toldrà). 4. Romance from Act I. of "Tosca" (Puccini).
10.30 p.m.—*Quintet Selections*. 1. Suite fantastique (Foulds). 2. "The Italian in Algiers"—Overture (Rossini).
11.0 p.m. (approx.)—Close Down.

BERGEN (Norway)

Kringkastingselskap. WL. 369.9 m. (811 kc.); 1.5 kw. Transmits at intervals from 10.15 a.m. 6.30 p.m.—Talk on Gardening.
7.0 p.m.—*Song Recital*. 1. A February Morning (Alma). 2. Spring-time Longings (Alma). 3. Snow (Lie). 4. Gipsy Dance from "Carmen" (Bizet).
8.0 p.m.—*Pianoforte Solos*. 1. Romance in F sharp major (Schumann). 2. Etude (Neupert). 3. Prelude in D flat major (Chopin). 4. Valse in A flat major (Chopin). 5. Nocturne in E minor (Chopin). 6. Etude (Kalkbrenner).
8.30 p.m.—German Lesson.
9.0 p.m.—Weather, News and Time.
9.15 p.m. (approx.)—Close Down.

BERLIN (Germany)

Koenigswusterhausen. WL. 1,250 m. (240 kc.); 25 kw. Transmits at intervals from 11. a.m. 4.0 p.m.—Programme from Voxhaus.
5.0 p.m.—Technical Talk.
5.30 p.m.—English Lesson.
5.55 p.m.—Talks.
7.30 p.m.—Programme from Voxhaus.

BERLIN (Germany)

Voxhaus. WL. 484.6 m. (619 kc.); 4 kw. Transmits at intervals from 9.10 a.m. 4.0 p.m. *Concert*. 1. Soprano Solos. (a) Nacht und Träume, (b) Gott im Frühling (Schubert), (c) Viola d'amour, (d) Schlaflied (Reger). 2. Violin Solos, (a) Caprice No. 13 (Paganini-Kreisler), (b) Caprice No. 20 (Paganini-Szymanowski). 3. Soprano Solos, (a) Kinder Augen (Frankenstein), (b) Yota, (c) Seguidilla (de Falla). 4. Ballade and Polonaise for Violin (Vieuxtemps).
5.30 p.m.—Talk, "The Building of Dwelling Houses and Skyscrapers."
6.0 p.m.—Agricultural Talk.
6.25 p.m.—Talk by the President of the German Colonial Union.
6.55 p.m.—Talk.
7.30 p.m.—*Concert of Opera Selections* for soprano and Orchestra. Followed by News.
9.30 p.m.—*Concert*. 1. (a) "Pique Dame"—Overture (Suppé), (b) Künstlerleben Waltz (Strauss). 2. Songs, (a) Ich und du, (b) Alle Dinge, (c) Jeanne Antoinette, (d) (arr. for Lute by Dr. Peter Bach). 3. (a) Potpourri from "The Bird Fancier" (Zeller), (b) Foxtrot, (c) Boston. 4. Songs to the Lutes. 5. (a) Foxtrot, (b) Selection from "Madame Pompadour" (Fall).

BERNE (Switzerland)

Radio-Berne. WL. 411 m. (730 kc); 1.5 kw. Transmits at intervals from 12 noon. 6.30 p.m.—Time and Weather.
6.35 p.m.—Talk, "Old Hand-writings."
7.0 p.m.—*Song Recital*.
7.35 p.m.—Programme from Lausanne.
9.0 p.m.—News and Weather.
9.15 p.m.—Musical Selections.
9.30 p.m. (approx.)—Close Down.

BRATISLAVA

(Czecho-Slovakia)
Radio Bratislava. WL. 300 m. (1,000 kc). 0.5 kw. 3.0 p.m.—Agricultural Report.
4.0 p.m.—Trio Op. 97 in B flat major (Beethoven).
5.0 p.m.—Talk.
7.35 p.m.—Gramophone Music.
6.0 p.m.—Programme relayed from Prague.

BRESLAU (Germany)

Schlesische Funkstunde. WL. 322.6 m. (930 kc); 4 kw. Relayd by Gleiwitz, on 250 m. (1,200 kc). Transmits at intervals from 10.15 a.m. 6.50 p.m.—Topical Talk.
7.15 p.m.—*Chamber Music*. 1. String Quartet in F major (Kaminski). 2. String Quartet in B flat major (Haydn).
8.10 p.m.—*Concert*. 1. Psalm 39, v. 2. "What is the Meaning of Life." 2. Sprüche der Seele (v. Molo). 3. "Das Hohelied"—Selection (v. Molo). 4. Trost (Köppen). 5. "Flügel der Nike" (v. Unruh). 6. Wir durften töricht sein (Ball). 7. Der Vater (Björnson). 8. Das Nachtlied (Nietzsche). 9. Für die, denen ist geschah (Altenberg). 10. Reiches Leben (Hamel).

BRÜNN (Czecho-Slovakia)

Komarov. WL. 441 m. (680 kc); 3 kw. Transmits at intervals from 11.15 a.m. 6.0 p.m.—Radiojournal Revue.
6.40 p.m.—English Lesson.
7.0 p.m.—A Short Comedy.
8.0 p.m.—*Song Recital*.
9.0 p.m.—Programme from Prague.

BRUSSELS (Belgium)

Radio Belgique. WL. 508.5 m. (590 kc.); 1.5 kw. 5.0 p.m.—*Trio Concert*.
7.45 p.m.—Le Radio Chronique.
8.15 p.m.—Relay of an Oratorio. In the Interval, Topical Talk.
10.15 p.m.—News.
10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)

Magyar Radio Ujsag. WL. 555.8 m. (540 kc); 3 kw. Transmits at intervals from 8.30 a.m. 7.10 p.m.—German Lesson.
7.45 p.m.—*Concert*. 1. Aria from "Il Trovatore" (Verdi). 2. Aria (Mascagni). 3. Cello Prelude (Corelli). 4. Aria from "La Bohème" (Puccini). 5. Ogni Sabato (Giordani). 6. Cello Concerto in E minor (Popper). 7. Songs. 8. Minuet (Becker). 9. Tarantelle (Popper). 10. Songs.
9.0 p.m.—Time, News and Tzigane Music.

COLOGNE (Germany)

Westdeutscher Rundfunk. WL. 283 m. (1,060 kc); 4 kw. Transmits at intervals from 9.30 a.m. 12.5 p.m.—*Concert*. 1. Freudengrüsse Waltz (Strauss). 2. "Medea"—Overture (Cherubini). 3. Venkovské Obrázky (Malát). 4. Romance in F major for Violin (Beethoven). 5. Selection (Massenet). 6. Extase (Ganne). 7. Dorfgeschichten (Gillet). 8. Sehnsucht (Beyer). 9. March (Blankenburg).
3.15 p.m.—Talk for Women.
3.50 p.m.—Review of Books, for Aix, Cologne and Langenberg.
4.20 p.m.—Topical Talk.
4.30 p.m.—Talk, "Pictures of Old Cologne."
5.0 p.m.—Hannes Ruch Recital of Pianoforte and Soprano Selections.
6.20 p.m.—Spanish Lesson.
6.45 p.m.—Talk for Parents.
7.15 p.m.—Programme from Düsseldorf (see Langenberg), followed by News, Sports Notes, Concert, and Dance Music.
11.0 p.m. (approx.)—Close Down.

COPENHAGEN (Denmark)

Copenhagen Radio. WL. 337 m. (890 kc); 1 kw. Relayd by Kalundborg on 1,153.8 m. (260 kc). Transmits at intervals from 6.30 a.m. 7.0 p.m.—Danish Poet Programme.
8.15 p.m.—News.
8.30 p.m.—*Wagner Concert*. 1. "The Flying Dutchman"—Overture. 2. Ballet Music from "Rienzi". 3. Selection from "The Mastersingers". 4. Prelude to the Third Act and Choral Selections from "Lohengrin". 5. "Entry of the Guests" from "Tannhäuser".
9.45 p.m. (approx.)—Close Down.

CORK (Ireland)

Cork Broadcasting Station (6CK). WL. 400 m. (750 kc); 1.5 kw. 2.30 p.m.—Weather, Stock Market Report and Gramophone Records.
6.15 p.m.—Programme from Dublin.

CRACOW (Poland)

Polskie Radio. WL. 566 m. (530 kc); 1.5 kw. Transmits at intervals from 11.0 a.m. 6.15 p.m.—Variety.
6.30 p.m.—French Lesson.
7.0 p.m.—Programme relayed from Warsaw.

DUBLIN (Ireland)

Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc); 1.5 kw. Transmits at intervals from 1.30 p.m. 6.15 p.m.—Children's Corner.
7.0 p.m.—Gramophone Records.
7.20 p.m.—News.
7.30 p.m.—Irish Lesson by Sile Ni Dhubhgain.
7.45 p.m.—Health Talk by Mrs. Russel, M.B.
8.0 p.m.—"A Musical Kaleidoscope," introducing melodies by many composers, by the Station Orchestra.
8.15 p.m.—Dorothy Day's Company present a topical Racing Sketch—"Who Saps with the Devil," by Clara Scally, M.D.
8.25 p.m.—Edward Brett (Pianist).
8.35 p.m.—M. Galloway Rigg (Contralto).
8.45 p.m.—"Melodies from Many Lands," by the Station Orchestra.
9.0 p.m.—"A Collection will be Made," by the Dublin Repertory Company.
9.30 p.m.—Eily Murnaghan (Soprano).
9.45 p.m.—"Jeux d'enfants" (Bizet), by the Station Orchestra.
10.0 p.m.—The Ceilidh Trio.
10.30 p.m.—News, Weather and Close Down.

FRANKFURT-2m-MAIN (Germany)

Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc); 4 kw. Relayd by Cassel, on 252.1 m. (1,190 kc). Transmits at intervals from 11.30 a.m. 3.30 p.m.—*Concert*. 1. Prelude to "Tristan and Isolde" (Wagner). 2. Selection from "The Gipsy Baron" (Joh. Strauss). 3. Selections from "La Traviata" (Verdi). 4. "Cosi fan tutte" (Mozart). (a) Overture, (b) Song, "Mädchen, so treibt ihr's mit allen." 5. Intermezzo from "Tiefland" (d'Albert). 6. Electra (R. Strauss).
4.45 p.m.—Reading from "Ivanhoe" (Scott).
5.15 p.m.—Wireless Notes and other Announcements.
5.30 p.m.—Talk for Women, from Cassel.
5.45 p.m.—Talk, "The Restitution of German Property in America."
6.15 p.m.—English Lesson.
6.45 p.m.—Chess Lesson.
7.15 p.m.—*Programme of the Five Microphones*. Dialect Evening of the towns of Frankfurt, Cassel, Stuttgart, Mannheim and Freiburg; followed by Gramophone Concert.

GRAZ (Austria)

Oest. Radio-Verkehr. WL. 357.1 m. (840 kc); 0.5 kw. 4.15 p.m.—Talk, "The Art of Speech."
5.0 p.m.—Talk, "The Commemoration of Alfred Zoff."
5.45 p.m.—Lesson in Serbo-Croatian.
6.15 p.m.—*Song Recital*.
6.50 p.m.—"Je t'aime" Comedy (Sacha Guitry).
8.0 p.m.—*Concert*. 1. Flitsch—March (Wagner); 2. "Der Fledermaus"—Overture (Strauss). 3. Donausagen Walzer (Fucik). 4. Selection from "Tiefland" (d'Albert). 5. Selection from "The Geisha" (Jones). 6. Mit klingenden Spiel—March (Dostoff), followed by News and Weather.

HAMBURG (Germany)

Norag (ha, in Morse). WL. 396 m. (757 kc); 4 kw. Relayd by Bremen on 272.7 m. (1,100 kc); Hanover, 297 m. (1,009 kc); and Kiel, 278 m. (1,076 kc). Transmits at intervals from 5.55 a.m. 4.0 p.m.—Talk, "The Culture of the Vikings," from Bremen.
4.30 p.m. (Hamburg, only)—Talk, "The Hamburg Administrative Reform."
5.30 p.m.—*Elementary English Lesson*, from Königswusterhausen.
6.0 p.m.—Orchestral Music.
6.20 p.m.—Talk, "Economics and Taxation."
6.45 p.m.—Ice Report, Market Prices and Weather.
7.0 p.m.—"Don Juan and Faust"—Drama (Scheffler). News and Silent Night.

HILVERSUM (Holland)

Algemeene Vereeniging Radio-Omroep. WL. 1,069 m. (280.5 kc); 5 kw. 11.40 p.m.—Police News.
12.10 p.m.—*Trio Concert*.
4.20 p.m.—Children's Corner.
5.40 p.m.—Time.
5.42 p.m.—*Trio Concert*.
6.55 p.m.—English Lesson.

7.45 p.m.—*Orchestral Concert*: 1. "La Poupée de Nuremberg"—Overture (Adam). 2. "The Power of Music"—Opera (Gavcaux).
8.45 p.m.—Talk, "Bee Keeping."
9.15 p.m.—"Abu Hassan" Opera (Weber).
10.15 p.m.—Weather and News.

HUIZEN (Holland)

WL. 340.9 m. (880 kc); 4 kw. (Until 5.40 p.m.), Transmits from 5.40 p.m. on 1,050 m. (154 kc).
12.10 p.m.—*Organ Recital*.
3.40 p.m.—Programme for Hospitals.
6.40 p.m.—English Lesson.
7.10 p.m.—Choral and Instrumental Concert from Groningen.

KATTOWITZ (Poland)

Polskie-Radio. WL. 422 m. (710 kc); 10 kw. Transmits at intervals from 3.20 p.m. 6.15 p.m.—Announcements.
6.55 p.m.—Talk, "The Economic Situation in Poland."
7.0 p.m.—Political Talk.
7.30 p.m.—*Chamber Music*.
9.0 p.m.—Time, News, and Close Down.

KÖNIGSBERG (Germany)

Ostmarken Rundfunk. WL. 330.3 m. (908 kc); 1 kw. Relayd by Danzig on 272.7 m. (1,100 kc). Transmits at intervals from 9.0 a.m. 5.30 p.m.—Talk, "The Position of Germany in International Trade."
6.0 p.m.—*Advanced English Lesson*.
6.30 p.m. (Königsberg only)—Maxim Gorki—on his Sixtieth Birthday.
6.30 p.m. (Danzig only)—"Missa solemnis" (Beethoven).
7.10 p.m. (Königsberg only)—Talk, "The Actor."
8.10 p.m. (Königsberg only)—*Chamber Music*. 1. String Quartet in G major (Jacoby). 2. String Quartet in A minor (Schumann), followed by Weather, News and Sports Notes.
9.30 p.m.—Programme from Voxhaus.

KOVNO (Lithuania)

Radio Kaunas. WL. 2,000 m. (150 kc); 15 kw. Transmits at intervals from 4.30 p.m. 6.30 p.m.—The Wireless Orchestra.
7.5 p.m.—Talk, "Flowers in Mythology."
7.30 p.m. (approx.)—*Orchestral Concert*. 1. "Czar and Carpenter"—Overture (Lortzing). 2. Legende. 3. Waltz from "Eugen Onegin" (Tchaikovsky). 4. Serenade (Heuper).
8.20 p.m.—*Cello Recital*. 1. Sonata in F major (R. Strauss). 2. Concerto in D major (Haydn). 3. Kol Nidrei (Bruch). 4. Gavotte in D major (Popper). 5. "Le Cygne" (Saint-Saëns). 6. Träumerei (Schumann). 7. Danse espagnole (Popper). 8. Au près de la fontaine (Davidoff).

LANGENBERG (Germany)

Westdeutscher Rundfunk. WL. 470 m. (638 kc); 25 kw. Programme also for Aix-la-Chapelle, 401 m. (748 kc); Cologne, 283 m. (1,060 kc); and Münster, 241.9 m. (1,240 kc). Transmits at intervals from 9.30 a.m. 12.5—7.15 p.m.—Programme from Cologne.
7.15 p.m.—*Schubert Concert* from Düsseldorf. 1. Fifth Symphony in B flat major. 2. Songs. 3. Dances for String Orchestra. Followed by Programme from Cologne.
11.0 p.m. (approx.)—Close Down.

LAUSANNE (Switzerland)

Société Romande de Radiophonie (HB2). WL. 680 m. (441 kc); 0.6 kw. Transmits at intervals from 6.45 a.m. 7.0 p.m.—Weather.
7.2 p.m.—Literary Recital.
7.30 p.m.—*Concert*: 1. Symphony in D major No. 2 (Beethoven). 2. Air from "Oberon" (Weber). 3. Danse sacrée et danse profane for Harp and String Instruments (Debussy). 4. Three Songs (Wolf). 5. L'Oiseau de feu (Stravinsky).

LEIPZIG (Germany)

Mitteldeutscher Rundfunk. WL. 366.3 m. (819 kc); 4 kw. Relayd by Dresden on 275.2 m. (1,090 kc). Transmits at intervals from 9 a.m. 5.30 p.m.—English Lesson.
6.0 p.m.—Talks.
7.0 p.m.—Weather and Time.
7.15 p.m.—*Concert*. 1. Im Reiche der Indra"—Overture (Lincke). 2. Soprano and Tenor Folksongs. 3. Variations on "Es kommt e in Vogel geflogen" (Ochs). 4. Tenor Solos. 5. Potpourri from "Ein

Ballnacht" (Strauss). 6. Soprano Solo. 7. March from "La Chaste Susanne" (Gilbert). 8. Folksong Duets. 9. Violin Solos, (a) Serenade (Berté), (b) Czardas (Hubay). 10. Tenor Solos. 11. Waltz from "The Lady of the Rose" (Gilbert). 12. Aria from "The Chocolate Soldier" (Strauss). 13. Duet from "Boccaccio" (Suppé). 14. March (Kollo). 15. Soprano Solo. 16. Tenor Solo from "The Countess Mariza" (Kálmán). Duet from "Der Rastelbinder" (Lehár). Followed by Dance Music.
11.0 p.m. (approx.)—Close Down.

LILLE (France)

P.T.T. WL. 285.8 m. (1,050 kc); 0.5 kw. Transmits at intervals from 12.30 p.m. 6.30 p.m.—Dance Music.
7.30 p.m.—Market Prices.
7.40 p.m.—*Concert*. 1. The Miller Without a Care (Guilleminot). 2. Baritone Solo, Les petits tons de chaume. 3. Andante for Trombone. 4. Recitation—La Couronne de Jean. 5. Baritone Solo. 6. Talk. 7. Fanfare. 8. Baritone Solo. 9. Jean and Jeannette—Polka for Two Cornets. 10. Pasquille Tourquennoise. Followed by News.

MADRID (Spain)

Union Radio (EAJ7). WL. 375 m. (800 kc); 1.5 kw. Transmits at intervals from 11.45 a.m. 7.0 p.m.—*Orchestral and Vocal Concert*. 1. The Two Princesses (Selection (Caballero). Soprano Songs (Schubert and Wolf-Ferrari). 3. "Iris"—Selection (Mascagni). 4. Soprano Songs: (a) Blés dorés (Rimsky-Korsakoff), (b) The Rose and the Nightingale (Rimsky-Korsakoff), (c) The Soldier's Wife (Rachmaninoff). In the Interval: Talk.
9.30 p.m.—French Lesson.
9.45 p.m.—Legal Talk.
10.0 p.m. (approx.)—Close Down.

MILAN (Italy)

Unione Radiofonica Italiana (RMI). WL. 526.3 m. (570 kc); 7 kw. Transmits at intervals from 11.15 a.m. 7.2 p.m.—English Lesson.
7.30 p.m.—Wireless Notes.
7.50 p.m.—Time.
7.52 p.m.—Technical Wireless Lesson.
8.0 p.m.—Relay of an Operetta.
9.55 p.m.—News.
10.0 p.m.—Dance Music relayed from the "Fiaschetteria Toscana."
10.30 p.m. (approx.)—Close Down.

MUNICH (Germany)

Deutsche Stunde in Bayern. WL. 535.7 m. (560 kc); 4 kw. Relayd by Nürnberg on 303 m. (990 kc); and Augsburg, on 566 m. (530 kc). Transmits at intervals from 11.45 a.m. 6.0 p.m.—English Lesson.
6.30 p.m.—Talk, "Government Administration Enquiries."
7.5 p.m.—Folk Songs and Melodies, from Nürnberg.
7.30 p.m.—*Variety Concert*. Readings, Light Songs and Selections in dialect.
9.5 p.m.—News.
9.20 p.m.—Chess Lesson.

NAPLES (Italy)

Unione Radiofonica Italiana (RNA). WL. 333.3 m. (900 kc); 1.5 kw. Transmits at intervals from 12.0 noon 7.20 p.m.—Wireless Notes.
7.40 p.m.—News.
7.48 p.m.—Harbour Notes.
7.50 p.m.—"The Count of Luxembourg"—Operetta (Lehár).
9.55 p.m.—Calendar and Programme Announcements.
10.0 p.m. (approx.)—Close Down.

OSLO (Norway)

Kringkastingselskapet. WL. 461.5 m. (650 kc); 1.5 kw. Programme relayed by Hamar on 555.8 m. (540 kc); Porsgrund, 500 m. (600 kc); Fredrikstad, 434.8 m. (690 kc); and Rjukan, 448 m. (670 kc). Transmits at intervals from 10.10 a.m. 5.15 p.m.—*Orchestral Concert*.
6.30 p.m.—German Lesson.
7.0 p.m.—Time.
7.2 p.m.—Talk, "A Motor Rido through Germany."
7.30 p.m.—Poem Recital.
8.0 p.m.—Choral Concert.
9.0 p.m.—Weather and News.
9.15 p.m.—Topical Talk.
9.30 p.m. (approx.)—Close Down.

PARIS (France)

Ecole Supérieure (FPTT). WL. 458 m. (655 kc); 0.5 kw. Transmits at intervals from 8.0 a.m. 6.0 p.m.—Radio-Journal de France.

Programmes for Monday.—(Cont.)

8.0 p.m.—Talks.
 9.0 p.m.—Concert of Modern Music, from the Works of Fontaine, Bax, Carpentier, etc.
PARIS (France)
 Eiffel Tower (FL). WL. 2,650 m. (113 kc); 5 kw.
 7.56 a.m.—Time Signal on 32 m. (9,375 kc).
 9.26 a.m.—Time Signal.
 5.45 p.m.—Le Journal Parlé. Talks on "The Week in the Theatres," "Wireless Novelties," etc.
 7.10 p.m.—Weather.
 7.30 p.m.—Concert of Jazz Music and Songs. At 7.56 p.m. Time Signal (on 32 m.; 9,375 kc).
 8.30 p.m.—Educational Programme Talks on "Metallurgy," "The Brain," etc.
 10.26 p.m.—Time Signal.
PARIS (France)
 Radio-Paris (CFR). WL. 1,750 m. (171 kc); 3 kw.
 Transmits at intervals from 7.30 a.m.
 12.30 p.m.—Concert of Classical Quartets and Songs.
 1.50 p.m.—Market Prices.
 3.30 p.m.—Exchange Quotations.
 3.45 p.m.—Concert. 1. "M. de Pourceaugnac"—Overture (Lulli). 2. "Cello Sc. 03 (a) Ole mi Tierra (Cassade), (b) Le Rouet (Hollman). 3. Talk, "In Search of Happiness." 4. Nocturne (Paray-Mouton). 5. Cadet roussel (Fourdrain).
 4.45 p.m.—Exchange Quotations.
 7.0 p.m.—Agricultural Report.
 8.0 p.m.—Exchange and Horticultural Talk.
 8.30 p.m.—Concert. 1. A Comedy. 2. Russian Choir selections. 3. Quartet (Brahms). 4. (a) Le Voyageur dans la nuit (Rubinstein), (b) Le Noyer (Schumann), (c) L'ain de ma Tombe (Beethoven). 5. Popular English Melodies. 6. Quintet (Mozart). News in the interval.
PITTSBURGH (U.S.A.)
 Westinghouse Electric (KDKA). WL. 315.6 m. (950 kc); 50 kw.
 Transmits at intervals from 3.45 p.m.
 11.10 p.m.—KDKA Theatrical Calendar.
 11.15 p.m.—Music from the William Penn Hotel.
 11.30 p.m.—"Buiet Gardeners," from WJZ, New York.

12 midnight—"Eclipse Clippers." The following programme from WJZ, New York.
 12.30 a.m. (Tuesday)—"Roxy's Gang."
 2.0 a.m.—"Riverside Hour."
 2.30 a.m.—"Rise and Shine."
 3.0 a.m.—"Moon Magic."
 3.30 a.m.—"Smalle and Robertson."
 4.0 a.m.—Weather and Time.
 4.10 a.m. (approx.)—Close Down.
POSEN (Poland)
 Polskie-Radio. WL. 344 m. (872 kc); 1.5 kw.
 Transmits at intervals from 12.0 noon.
 6.15 p.m.—French Lesson.
 6.35 p.m.—Talk, "Among the Lepers."
 7.0 p.m.—Finance Notes.
 7.30 p.m.—Programme from Warsaw.
 9.0 p.m.—Time and Variety.
 9.30 p.m.—Weather, News and Close Down.
PRAGUE (Czecho-Slovakia)
 Strasnice. WL. 348.9 m. (860 kc); 5 kw.
 Transmits at intervals from 10.0 a.m.
 5.25 p.m.—French Lesson.
 6.0 p.m.—A Revue.
 7.30 p.m.—Concert. 1. L'Après midi d'un faune (Debussy). 2. Quartet Op. 10 (Debussy). 3. Songs and Petite Suite (Debussy).
 9.0 p.m.—Time, News and Gramophone Records.
ROME (Italy)
 Unione Radiofonica Italiana (IRO). WL. 448.4 m. (669 kc); 3 kw.
 Transmits at intervals from 11.30 a.m.
 7.0 p.m.—French Lesson.
 7.30 p.m.—Time, News, Exchange and Weather.
 7.45 p.m.—Concert of Light Music. 1. Student Song (Manfred). 2. La fille de Madame Angot (Lecocq). 3. (a) Neapolitan Serenade; (b) New Moon (Mario Costa)—Tenor Songs, with guitar accompaniment. 4. Nuvole (Bonavolonta). 5. Abbracciate cu'mme (Lama). 6. Dancing shadow—Waltz (Corso). 7. Recital of Humorous and Dialect Poems (Pizzirani)—by the Author. 8. El Gaditano (Vidal). 9. Geisha Tango (Lama). 10. April Song (Bonavolonta). 11. Mazurka

(Di Ponio). 12. Mandolinata—Guitar Solo (Thomé). 13. Soprano and Tenor Duet (Brogi). 14. 11 duello Duet (Rulli). 15. Topical Talk. 16. Old Neapolitan Song (Anon.). 17. Catari—Tenor Song (Cardillo). 18. Madame de Thebes (Lombardo). 19. Gipsy Song—Duet (Rulli). 20. Shimmy (Vidal). 21. Monte Carlo—March (Schreiner).
 9.55 p.m.—News and Close Down.
SCHENECTADY (U.S.A.)
 General Electric Company (WGY). WL. 379.5 m. (790 kc); 50 kw.
 Programme relayed by 2XAD on 21.96 m. (13,661 kc) from 8.0—9.0 p.m. and by 2XAF on 31.4 m. (9,554 kc) from 11.0 p.m.
 Transmits at intervals from 11.45 a.m.
 11.20 p.m.—"U.S. Radio Farm School."
 11.30 p.m.—Dinner Music from the Hotel van Curler.
 12.30 a.m. (Tuesday)—WGY Orchestra.
 12.45 a.m.—Talk, "Community Carillon Music."
 1.0 a.m.—WGY Orchestra.
 1.30 a.m.—Time.
 The following programme from New York.
 1.32 a.m.—The A. and P. Gipsies.
 2.30 a.m.—General Motors Family Party.
 3.30 a.m.—"Fisk" Programme.
 4.0 a.m. (approx.)—Close Down.
STOCKHOLM (Sweden)
 Radiotjänst (SASA). WL. 453.8 m. (661 kc); 1.5 kw. Relayd by Motala on 1,380 m. (217 kc); Göteborg, 416.7 m. (720 kc); Malmö 260.9 m. (1,150 kc); and Sundsvall, 545.6 m. (550 kc).
 Transmits at intervals from 11.35 a.m.
 5.25 p.m.—Topical Talk.
 5.45 p.m.—Light Music.
 6.15 p.m.—Astronomy Talk.
 6.35 p.m.—Folk Music.
 6.45 p.m.—Elementary English Lesson.
 7.15 p.m.—Concert. 1. The Aladdin Suite (Nielsen). 2. Oboe Solo (Järnefelt). 3. Melodrama. 4. Indian Ballet (Delibes). 5. Indian Suite (Poppy).
 8.15 p.m.—News and Weather.
 8.40 p.m.—Talk, "Foreign Politics."
 9.0 p.m. (approx.)—Close Down.
STUTTGART (Germany)
 Süddeutscher Rundfunk. WL. 380.7 m. (788 kc); 4 kw.
 Transmits at intervals from 11.30 a.m.
 3.15 p.m.—Concert. 1. Der Adler von Lille (Blankenburg). 2. Himmelsfinken (Waldteufel). 3. Romance in G major for violin (Beethoven). 4. "Der Feenseer"—Overture (Auber). 5. Souvenir of Beethoven (Urbach). 6. Introduction to third act and Bridal Chorus from "Lohengrin" (Wagner). 7. Delirium (Jos. Strauss). 8. Allzeit bereit (Blon).
 5.0 p.m.—Time and Weather.
 5.10 p.m.—Talk.
 5.40 p.m.—Wireless Notes.
 6.5 p.m.—Talk, "Johannes Kepler—the Swabian Astronomer."
 6.35 p.m.—Time and Weather.
 6.45 p.m.—Spanish Lesson.
 7.15 p.m.—"Programme of the Five Microphones"—Dialect Evening of the towns of Cassel, Frankfurt, Stuttgart, Freiburg and Mannheim.
 9.45 p.m.—News.
 10.0 p.m. (approx.)—Close Down.
TOULOUSE (France)
 Radiophonie du Midi. WL. 391 m. (767 kc); 3 kw.
 Transmits at intervals from 10.15 a.m.
 12.45 p.m.—Orchestral Concert.
 8.30 p.m.—Agricultural Talk.
 8.45 p.m.—Concert. 1. Selections from "Tristan and Isolde" (Wagner). 2. Children's Corner (Debussy). 3. "Louise"—Preludes (Charpentier). 4. Valse from "The Dollar Princess" (Fall). 5. La Divorcée—Valse.
 9.0 p.m.—Valse Chantée, "Trésor d'Amour," followed by Danec Music.
VIENNA (Austria)
 Radio-Wien. WL. 576 and 517.2 m. (520 and 580 kc.); 0.75 and 5 kw. Relayd by Innsbruck on 294.1 m. (1,020 kc.) and Klagenfurt, 272.7 m. (1,100 kc.).
 Transmits at intervals from 10. a.m.
 5.50 p.m.—Theatre Talk.
 6.30 p.m.—Schubert Concert from the Musikvereinsaal: 1. First Movement of the String Quartet in G major. 2. Songs. 3. Serenade for Contralto and Women's Choir. 4. Trio in E flat major for Pianoforte, Violin and Cello. 5. "Auf dem Strome," Song with Horn and Pianoforte Accompaniment. 6. "Die Allmacht," Song with Pianoforte Accompaniment. 7. Battle Song—for Male Choir.

WARSAW (Poland)
 Polskie-Radio. WL. 1,111.1 m. (270 kc); 10 kw.
 Transmits at intervals from 11.0 a.m.
 6.35 p.m.—French Lesson.
 7.0 p.m.—Talk.
 7.30 p.m.—Concert. 1. String Quartet (Smetana). 2. Songs. 3. Andante from the String Quartet (Tchaikovsky). 4. Songs. 5. Valse Triste (Nedbal). In the Interval: News in French.
 9.0 p.m.—Time and News.
 9.30 p.m. (approx.)—Close Down.
WILNO (Poland)
 Polskie-Radio. WL. 435 m. (689 kc); 0.5 kw.
 Transmits at intervals from 3.25 p.m.
 6.25 p.m.—Time and Variety.
 6.35 p.m.—Talk, "Polish Libraries."
 7.0 p.m.—Programme from Warsaw.
 9.0 p.m.—News and Close Down.
ZAGREB (Yugo-Slavia)
 Radioklub-Zagreb. WL. 310.5 m. (966 kc); 0.35 kw.
 Transmits at intervals from 12.15 p.m.
 6.45 p.m.—Talk, "Present Day French Poetry."
 7.0 p.m.—Talk on "Aesthetics."
 7.15 p.m.—Talk on "The History of Music."
 7.30 p.m.—Announcements.
 7.35 p.m.—Russian Concert.
 8.50 p.m.—News.
 9.0 p.m.—Talk on Psychology.
 9.20 p.m.—Concert from the Café Corso.
ZURICH (Switzerland)
 Radio Genossenschaft. WL. 588.2 m. (510 kc); 2 kw.
 11.30 a.m.—Time and Weather.
 11.32 a.m.—Orchestral Concert.
 11.50 a.m.—News.
 12.35 p.m.—Weather and Exchange Quotations.
 2.0 p.m.—Gramophone Concert.
 3.0 p.m.—Orchestral Concert—relayed from the Hotel Baur-au-lac.
 4.10 p.m.—Children's Corner.
 4.45 p.m.—Weather.
 6.30 p.m.—Time and Weather.
 6.32 p.m.—Talk, "Economics and Politics."
 7.0 p.m.—Programme relayed from Bern.
 7.30 p.m.—Programme relayed from Lausanne, through Bern.
 8.10 p.m.—Concert of Selections from Opera and Musical Plays.
 9.0 p.m.—Weather and News.

In Act III—

The lights are low. To the silent hundreds, watching in the darkness, comes the murmur of violins. Rising and falling, they whisper of impending tragedy, adding their note to an atmosphere charged with deep foreboding. With halting step the tenor advances. Dimly, in the half light, he is seen, poised, listening, waiting the melody of the oboe, whose plaintive sweetness will lead him in his swan song—

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PROGRAMMES FOR TUESDAY (March 27)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME

BARCELONA (Spain)

Radio-Barcelona (EAJ1). WL. 344.8 m. (870 kc); 2.5 kw. Transmits at intervals from 11.0 a.m. 6.0 p.m.—Exchange Talk. 6.10 p.m.—Fashion Talk. 6.30 p.m.—Quintet Selections. 8.40 p.m.—English Lesson. 9.0 p.m.—Chimes and Weather. 9.5 p.m.—Exchange. 9.10 p.m.—Quintet Selections. 1. Alte Semester—March (Lindsay-Theimer). 2. Selection from "Manon" (Massenet). 3. Confession d'amour (Kockert). 4. Jota (Mayral). 5. Valse érotique (Marraco). 9.45 p.m.—Selections from two Dramas—"Caridad" (Echegaray) and "El Nido" (Alvarez Quintero Brothers). 10.0 p.m.—Exchange Closing Prices. 10.5 p.m.—Programme from Union Radio (Madrid) EAJ7.

BASLE (Switzerland)

Basler-Radio-Genossenschaft. WL. 1,000 m. (300 kc.); 0.25 kw. 6.30 p.m.—Time and Weather. 6.35 p.m.—Talk, "Spring Fashions." 7.0 p.m.—National Concert. 8.50 p.m.—News and Weather.

BERGEN (Norway)

Kringkastingsselskap. WL. 369.9 m. (811 kc); 1.5 kw. Transmits at intervals from 10.15 a.m. 7.0 p.m.—Orchestral Music. 1. "Marinarella"—Overture (Füci). 2. Congratulations (Peterson-Berger). 3. Espanita—Waltz. 4. Gavotte (Sinding). 5. Humoreske (Aulin). 7.30 p.m.—Chamber Music. 1. Five Concertos (Couperin). 2. Serenade in D minor, No. 3 (Volkman). 8.0 p.m.—Talk, "Canada." 8.30 p.m.—Violin Recital. 1. Violin Concerto op. 28 (Goldmark). 9.0 p.m.—Weather, News and Time. 9.15 p.m.—English Lesson by Mr. F. L. M. Somerville. 9.30 p.m. (approx.)—Close Down.

BERLIN (Germany)

Königswusterhausen. WL. 1250 m. (240 kc); 35 kw. Transmits at intervals from 11 a.m. 4.0 p.m.—Programme from Leipzig. 5.0 p.m.—Technical Talk. 5.30 p.m.—Spanish Lesson. 5.55 p.m.—Talk, "Women's Work in the League of Nations." 6.30 p.m.—Programme from Voxhaus.

BERLIN (Germany)

Voxhaus. WL. 484.6 m. (619 kc); 4 kw. Transmits at intervals from 9.10 a.m. 4.30 p.m.—Orchestral Concert. 5.30 p.m.—Talk, "The Acoustics of Space." 6.0 p.m.—Education Talk. 6.30 p.m.—Talk on Following Drama. 7.0 p.m.—"The Lower Depths"—Drama (Maxim Gorky). Followed by News. 6.30 p.m. (approx.)—Close Down.

BERNE (Switzerland)

Radio-Berne. WL. 411 m. (730 kc); 1.5 kw. Transmits at intervals from 12.0 noon. 6.30 p.m.—Time and Weather. 6.35 p.m.—Programme from Basle. 8.20 p.m.—The Kursaal Orchestra. News and Weather in the interval. 9.30 p.m. (approx.)—Close Down.

BRATISLAVA (Czecho-Slovakia)

Radio Bratislava. WL. 300 m. (1,000 kc); 0.5 kw. 4.0 p.m.—Concert. 1. Melodie (Glück) (Hosck). 4. Nachtreue (Loewe). 5. Introduction and Variations (Schubert). 6. Songs (Schubert). 7. Albumblatt (Wagner). 5.0 p.m.—Talks. 5.30 p.m.—Gramophone Records. 5.55 p.m.—Programme relayed from Prague.

BRESLAU (Germany)

Schlesische Funkstunde. WL. 322.6 m. (930 kc); 4 kw. Relayed by Gleiwitz on 250 m. (1,200 kc). Transmits at intervals from 10.15 a.m. 6.30 p.m.—Review of Art and Literature. 7.15 p.m.—Variety Concert. News and Wireless Notes. 9.30 p.m.—Concert and Dance Music from the Café Hindenburg, Beuthen—relayed from Gleiwitz. 11.0 p.m. (approx.)—Close Down.

BRÜNN (Czecho-Slovakia)

Komarov. WL. 441 m. (680 kc); 3 kw. Transmits at intervals from 11.15 a.m. 5.0 p.m.—Time, and German Transmission. 5.25 p.m.—Programme from the Agricultural Institute. 5.40 p.m.—Talk. 5.55 p.m.—Programme from Prague.

BRUSSELS (Belgium)

Radio Belgique. WL. 508.5 m. (590 kc); 1.5 kw. 5.0 p.m.—Dance Music. 6.0 p.m.—French Lesson. 7.45 p.m.—Le Radio Chronique. 8.15 p.m.—Orchestral and Instrumental Concert. 1. Hallelujah (Youmans). 2. Souvenir de Chopin (Fétras). 3. Gaiement (Staub). 4. Wedgewood Blue (Kettelbey). 5. Canzonetta (Filippucci). 6. Do, Do, Do. (Gershwin). 7. Selection (De Severac). 8. Le Cid (Thomas). 9. Song. 10. Une fête à Aranjuez (Demessermann). 11. Theme and Variations for Trumpet (Moulaert). 12. "La Dame en décolleté" (Yvain). 13. Song. 14. Caprice italien (Tchaikovsky). In the Interval: Talks on "Science" and "Topical Events." 10.15 p.m.—News. 10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)

Magyar Radio Ujsag. WL. 555.8 m. (570 kc); 3 kw. Transmits at intervals from 8.30 a.m. 6.45 p.m.—German Talk. 7.45 p.m.—Rakoczy Memorial Talk. 8.0 p.m.—Military Band Concert. 9.0 p.m.—Time, News and Tzigane Music

COLOGNE (Germany)

Westdeutscher Rundfunk. WL. 283 m. (1,060 kc.); 4 kw. Transmits at intervals from 9.30 a.m. 12.5 p.m.—Concert: 1. Schwedischer Honneur Marsch (Heinecke). 2. Chromatic Waltz (Kockert). 3. "The Hebrides"—Overture (Mendelssohn). 4. Melodies from "La Favorita" (Donizetti). 5. Piano-forte Solos: (a) Prelude (Debussy); (b) Nocturne (Chopin). 6. Aus dem Nordlande (Frederiksen). 7. Zauberweise (Ackermans). 8. Goldiges Lachen (Klose). 9. Gnomen—Parade (Wentzel). 3.25 p.m.—Children's Songs. 4.0 p.m.—Education Talk. 4.30 p.m.—Topical Talk. 4.40 p.m.—Talk, "Artist and Public throughout the Ages." 5.0 p.m.—Concert: 1. Fortuna March (Siede). 2. Schönbrunner Waltz (Lanner). 3. "La Part du Diable"—Overture (Auber). 4. In Adam's Paradise (Urbach). 5. Andante in C sharp minor (Schubert). 6. Petite Marquise (May). 7. Liebeswerben (Profès). 6.10 p.m.—French Lesson. 6.40 p.m.—Talk for Workers. 7.0 p.m.—Talk, "Maxim Gorky's Literary Personality." 7.20 p.m.—"The Lower Depths"—Drama (Gorky), followed by News and Sports Notes and Silent Night.

COPENHAGEN (Denmark)

Copenhagen Radio. WL. 337 m. (890 kc); 1 kw. Relayed by Kalundborg on 1,153.8 m. (260 kc.). Transmits at intervals from 6.30 a.m. 6.0 p.m.—News, Exchange and Time. 6.30 p.m.—Talk. 7.0 p.m.—Serenade in F major, Op. 12" (Herbert). 7.30 p.m.—A Debate on "Temperance." 8.30 p.m.—News. 8.45 p.m.—Concert. 1. Sonata for Violin and Piano in C major (Mozart). 2. Piano-forte Solos (Beethoven): (a) Albumblatt an Elise, (b) Rondo, Op. 129 m. 3. Concerto for Violin (Lalo). 4. Concerted-paraphrase on Lanner's "Die Schönbrunner" (Klassen). 5. Faust Fantasia (Wieniawsky). 6. "L'Idéale et l'Orage" from "Suite Romantique"—Piano-forte Solo (Wachtmeister). 7. Romance Op. 3 (Klassen). 8. Scènes de la Opéra (Hubay). 10.6 p.m.—Dance Music from The Palace Hotel. 11.30 p.m. (approx.)—Close Down.

CORK (Ireland)

Cork Broadcasting Station (6CK). WL. 400 m. (750 kc); 1.5 kw. 2.30 p.m.—Weather, Stock Market Report and Gramophone Records. 6.15 p.m.—Programme from Dublin.

CRACOW (Poland)

Polskie Radio. WL. 566 m. (530 kc); 1.5 kw. Transmits at intervals from 11.0 a.m. 6.5 p.m.—Agricultural Report. 6.20 p.m.—"Casanova"—Opera (Rózycki). Relayed from Kattowitz. 9.0 p.m.—Programme relayed from Warsaw. 9.30 p.m.—Concert. Relayed from the Pavilion Restaurant. 10.30 p.m. (approx.)—Close Down.

DUBLIN (Ireland)

Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc); 1.5 kw. Transmits at intervals from 1.30 p.m. 6.15 p.m.—Children's Corner. 7.0 p.m.—Gramophone Records. 7.20 p.m.—News. 7.30 p.m.—Fainne Talk, "Peadar O'Doimín," by An t-Athar L. O. Muireadhaigh. 8.0 p.m.—The Augmented Station Orchestra. 8.15 p.m.—P. J. Duffy (Baritone). 8.30 p.m.—Mme. St. John Pike (Violinist). 8.45 p.m.—Musical Chat by H. R. White. 9.0 p.m.—The Augmented Station Orchestra. 9.15 p.m.—A Revue, by John McDonagh's Company. 10.15 p.m.—The Augmented Station Orchestra. 10.30 p.m.—News, Weather and Close Down.

FRANKFURT-am-MAIN (Germany)

Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc); 4 kw. Relayed by Cassel on 252.1 m. (1190 kc). Transmits at intervals from 11.30 a.m. 3.30 p.m.—Concert from the Works of Debussy (on the tenth anniversary of his death). 1. Prelude to "L'Après-midi d'un faune." 2. Selections from "Ariettes oubliées" and "Fêtes galantes": (a) Chevaux de bois, (b) Green; (c) Fantoches, (d) Claire de lune. 3. Piano-forte Solos, (a) Danseuse de Delphes, (b) La fille aux cheveux de lin, (c) La Cathédrale engloutie. 4. "Children's Corner" Suite, (a) 5. Selection from "L'Enfant prodige." 6. Bergamaskische Suite. 4.45 p.m.—Reading. 5.15 p.m.—Wireless Notes and other Announcements. 5.30 p.m.—Talk, "Heinrich Mann—the Poet and the Man," from Cassel. 6.0 p.m.—Talk, "Industrial Development and Health." 6.30 p.m.—French Lesson. 7.0 p.m.—Talk, "Changes at the Bottom of the Sea." 7.15 p.m.—Programme from Stuttgart. 9.45 p.m.—Orchestral Concert of Opera Music.

HAMBURG (Germany)

Norag (ha, in Morse). WL. 396 m. (757 kc); 4 kw. Relayed by Bremen on 272.7 m. (1100 kc); Hanover, 297 m. (1009 kc); and Kiel, 278 m. (1076 kc). Transmits at intervals from 5.55 a.m. 4.0 p.m.—(Hamburg, Hanover and Kiel)—Talk: "The Theatrical Management of Leopold Jessner." 4.20 p.m.—Taxation Talk. 4.35 p.m.—(Hamburg, Bremen and Hanover)—Talk, "Domestic Economy." 5.0 p.m.—(Hamburg and Kiel)—A Waltz Programme. 6.0 p.m.—Talk, "The Legal Protection of Children." 6.25 p.m.—Agricultural Talk from Kiel. 6.55 p.m.—Weather. 7.0 p.m.—Talk, "The International Economic Conference." 7.15 p.m.—"The Large Towns"—a Programme for Workers. 9.15 p.m.—Talk, "Crime and Type Investigation," followed by Topical Talk and News. 9.30 p.m. (approx.)—(Hamburg and Kiel)—Concert from Café Wallhof. 10.25 p.m.—(Hamburg, Bremen and Kiel)—Ice Report. 10.30 p.m.—(Hamburg, Bremen and Kiel)—Dance Music. 11.30 p.m. (approx.)—Close Down.

HILVERSUM (Holland)

Algemeene Vereeniging Radio Omroep. WL. 1,069 m. (280.5 kc); 5 kw. 11.40 a.m.—Police News. 12.10 p.m.—Trio Concert. 2.40 p.m.—Fashion Talk.

5.40 p.m.—Time. 5.42 p.m.—Trio Concert. 6.35 p.m.—English Lesson. 7.25 p.m.—Police News. 7.45 p.m.—Recital for Two Pianos. 8.55 p.m.—Talk on "India." 9.25 p.m.—Concert. 1. "William Tell"—Overture (Rossini). 2. Selection from the Works of Mendelssohn (Urbach). 3. Aubade printanière (Lacombe). 9.55 p.m.—Weather and News. 10.5 p.m.—Concert (continued). 4. "Aufzug der Stadtwoche" (Jessel). 5. My Dream—Waltz (Waldteufel). 6. A Medley (Thiele). 7. Serenade (Toselli). 8. "Es Lebe das Leben"—March (Ischpold). 10.45 p.m. (approx.)—Close Down.

HUIZEN (Holland)

WL. 340.9 m. (880 kc); 4 kw. (Until 5.40 p.m.) Transmits from 5.40 p.m. on 1950 m. (154 kc). 12.10 p.m.—Trio Concert. 5.10 p.m.—Gramophone Records. 6.10 p.m.—Lessons. 6.15 p.m.—Ecclesiastical Latin Lesson. 7.40 p.m.—Choral and Instrumental Concert from St. Dominicus Church, Amsterdam. 10.10 p.m.—News.

KATTOWITZ (Poland)

Polskie Radio. WL. 422 m. (710 kc); 10 kw. Transmits at intervals from 3.20 p.m. 6.30 p.m.—"Casanova"—Opera (Rózycki). 9.0 p.m.—Time and News. 9.30 p.m.—Concert from the Café Astoria.

KÖNIGSBERG (Germany)

Ostmarken Rundfunk. WL. 330.3 m. (908 kc); 1 kw. Relayed by Danzig on 272.7 m. (1,100 kc). Transmits at intervals from 9.0 a.m. 4.0 p.m.—"Balalaika Concert." 5.30 p.m.—(Königsberg only)—Agricultural Talk. 6.0 p.m.—Elementary Spanish Lesson. 6.30 p.m.—Programme from Voxhaus. 9.15 p.m. (approx.)—Weather, News and Sports Notes. 9.30 p.m.—Concert of Russian Music. 1. "A Life for the Czar"—Overture (Glinka). 2. Fantasia on Russian Folk Melodies for Violin, with Orchestral Accompaniment (Rimsky-Korsakoff). 3. Ballet Music from "The Demon" (Rubinstein). 4. Eight Russian Folk Melodies (Ljadow). 10.30 p.m. (approx.)—Close Down.

KOVNO (Lithuania)

Radio Kaunas. WL. 2,000 m. (150 kc); 15 kw. 5.0 p.m.—Talk, "The journey towards the stars." 5.30 p.m.—Talk, "Thoughts on a country's education." 6.0 p.m.—Time, Weather and News. 6.30 p.m.—Clarinet Concert.

LANGENBERG (Germany)

Westdeutscher Rundfunk. WL. 470 m. (638 kc.); 25 kw. Programme also for Aix-la-Chapelle, 401 m. (748 kc); Cologne, 283 m. (1,060 kc); and Münster 241.9 m. (1,240 kc). Transmits at intervals from 9.30 a.m. Programme relayed from Cologne from 12.5 p.m., followed by Silent Night.

LAUSANNE (Switzerland)

Société Romande de Radiophonie (HB2). WL. 680 m. (441 kc); 0.6 kw. Transmits at intervals from 6.45 a.m. 7.0 p.m.—Weather. 7.1 p.m.—Orchestral Concert. 1. "The Mute of Portici"—Overture (Auber). 2. Réponse à Manon (Gillet). 3. Le Postillon de Lonjumeau—Selection (Adam). 4. Serenade (Schubert). 5. "Mephistopheles"—Selection (Boito). 6. New Vienna—Waltz (Strauss). 8.0 p.m.—String Quartet and Solo Selections. 8.30 p.m.—Literary Selection. 8.45 p.m. (approx.)—Close Down.

LEIPZIG (Germany)

Mitteldeutscher Rundfunk. WL. 366.3 m. (819 kc); 4 kw. Relayed by Dresden on 275.2 m. (1,090 kc). Transmits at intervals from 9 a.m. 3.30 p.m.—"The Bach Family"—Concert of Flute, Piano-forte and Vocal Music from the Works of Johann Sebastian Bach and his Relatives.

5.5 p.m.—Talk for Women. 6.0 p.m.—Weather. 6.15 p.m.—Talk, "The Feeding of Plants." 6.45 p.m.—Talk, "Maxim Gorky." 7.15 p.m.—Maxim Gorky Programme. 1. Reading from his Autobiography. 2. Three Poems in Prose. 3. "The Kahn and his Son"—a Story. 4. (a) Selection from "Truth and Fiction," (b) The Devil and the red writer. 8.15 p.m.—Russian Folk Music. 9.0 p.m.—News. 9.30 p.m.—Dance Music. 11.0 p.m. (approx.)—Close Down.

LILLE (France)

PTT. WL. 285.8 m. (1,050 kc); 0.5 kw. Transmits at intervals from 12.30 p.m. 7.30 p.m.—Market Prices. 7.40 p.m.—Espanita Talk. 8.0 p.m.—Orchestral Concert with Baritone Solos. News.

MADRID (Spain)

Union Radio (EAJ7). WL. 375 m. (800 kc); 1.5 kw. Transmits at intervals from 11.45 a.m. 7.0 p.m.—Orchestral Selections. 1. Classical Fantasia (Chapi). 2. The Girl of the Golden West—Selection (Puccini). In the Interval: Verse Recital. 8.0 p.m.—Dance Music, relayed from the "Alcazar." 9.30 p.m.—English Lesson. 10.0 p.m.—Programme relayed by San Sebastian (EAJ8), 335 m. (895 kc). Time, and Exchange Quotations. 10.10 p.m.—Selection from "La Traviata" (Verdi). 2.20 a.m. (Wednesday)—News. 2.30 a.m. (approx.)—Close Down.

MILAN (Italy)

Unione Radiofonica Italiana (1MI). WL. 526.3 m. (570 kc.); 7 kw. Transmits at intervals from 11.15 a.m. 7.2 p.m.—German Lesson. 7.30 p.m.—Wireless Notes. 7.50 p.m.—Concert from the works of Pick Mangiagli. 9.55 p.m.—News. 10.0 p.m.—Dance Music. 10.30 p.m. (approx.)—Close Down.

MUNICH (Germany)

Deutsche Stunde in Bayern. WL. 535.7 m. (560 kc.); 4 kw. Relayed by Nürnberg on 303 m. (990 kc) and Augsburg on 566 m. (530 kc.). Transmits at intervals from 10.20 a.m. 6.0 p.m.—Talk, "The Chemical Construction of the world." 6.30 p.m.—Talk, "The History of Silesia." 7.5 p.m.—Concert: 1. "The Flying Dutchman"—Overture (Wagner). 2. Duet for Violin and Bass Viol (Bötessin). 3. Caprice for Flute and Orchestra (Kempner). 4. Third Movement from the Concerto for "Hunting Horn" and Orchestra (R. Strauss). 5. Selection from "Der Freischütz" for Clarinet and Orchestra (Georg). 6. Kol Nidrei—Cello and Orchestral selection (Bruch). 7. Spanish Caprice (Rimsky-Korsakoff). 8.40 p.m.—"The Champion Boxer"—Comedy (Ollop). 9.5 p.m.—News. 9.20 p.m.—Gramophone Concert from Nürnberg. 10.30 p.m. (approx.)—Close Down.

NAPLES (Italy)

Unione Radiofonica Italiana (1NA). WL. 333.3 m. (900 kc). 1.5 kw. Transmits at intervals from 12 noon. 7.20 p.m.—Wireless Notes. 7.40 p.m.—News. 7.58 p.m.—Harbour Notes. 7.55 p.m.—Relay of an Operetta from the San Carlo Theatre. 9.55 p.m.—Calendar and Programme Announcements.—Close Down. 10.0 p.m. (approx.)—Close Down.

OSLO (Norway)

Kringkastingsselskapet. WL. 461.5 m. (650 kc); 1.5 kw. Programme relayed by Hamar, on 555.8 m. (540 kc); Porsgrund, 500 m. (600 kc); Fredrikstad, 434.8 m. (690 kc); Notodden, 411 m. (730 kc); and Rjukan, 448 m. (670 kc). Transmits at intervals from 10.10 a.m. 5.15 p.m.—Talk for Housewives. 5.55 p.m.—Shorthand Lesson. 6.15 p.m.—News. 6.30 p.m.—English Lesson. 7.0 p.m.—Time. 7.2 p.m.—Talk, "German Agriculture."

Programmes for Tuesday.—(Cont.)

7.30 p.m.—Orchestral Concert: 1. Persian Suite (Rubinstein). 2. In the Cemetery (Brahms). 3. The First Rhapsody (Brahms). 4. Minuet (Boccherini). 5. Madrigal (Gillet). 6. Ballet Suite (Popy).

5. Cachaprés (Casadesu). 6. Habanera (Aubert). 7. Danse grotesque (Schmitt). 8. Monôme d'étudiants (Casadesu).

PARIS (France) Ecole Supérieure (FPTT). WL. 458 m. (655 kc); 0.5 kw. Transmits at intervals from 8.0 a.m.

PARIS (France) Radio-Paris (CFR). WL. 1,750 m. (171 kc.); 3 kw. Transmits at intervals from 7.30 a.m.

PARIS (France) Eiffel Tower (FL). WL. 2,650 m. (113 kc); 5 kw. 7.56 a.m.—Time Signal (on 32 m.; 9.375 kc).

12.30 p.m.—Concert: 1. Overture (Beethoven). 2. Estampes (Debussy). 3. Minuetto (Bolzoni). 4. The Italian Symphony (Mendelssohn). 5. Pavane and Tarantelle (d'Ambrosio). 6. Intermezzo (Boellmann). 7. Au bois de Misère (Lazzari). 8. La Fête chez Thérèse (Hahn). 9. Plaisir d'amour (Martini). News in the interval.

7.30 p.m.—Concert. 1. Violin and Pianoforte Selections: (a) Pavane pour une Infante défunte (Ravel). (b) Selection from "The Bartered Bride" (Smetana). (c) Chant d'amour (Suk). (d) Poème (Fibich).

1.50 p.m.—Market Prices. 3.30 p.m.—Exchange Quotations. 3.45 p.m.—Concert: 1. Nais Micoulin (Bruneau). 2. Sonata for Cello (Handel). 3. Havanaise (Pala-dihle). 4. Pianoforte Solos: (a) Murmure des bois; (Braungardt); (b) Danse vive (Moreau). 5. Pavane from "Egmont" (Salvyre). 6. Sonata for Violin (Vierne). 7. Ballet de cour (Pierné).

8.30 p.m.—Educational Programme. Talks on "Brazil," "Life in the United States," "Great Voyages of Exploration."

PITTSBURGH (U.S.A.) Westinghouse Electric (KDKA). WL. 315.6 m. (950 kc); 50 kw. Transmits at intervals from 2.45 p.m.

PARIS (France) Petit Parisien. WL. 340.9 m. (880 kc); 0.5 kw. 9.0 p.m.—Concert. Petit Elfe ferme l'oeil (Schmitt). 2. Fantasia for Pianoforte and Orchestra (Aubert).

1.0 a.m.—3.0 a.m.—Programme from WJZ, New York. "Stromberg Carlson Hour." 2.0 a.m.—"High Spots of Melody." 2.30 a.m.—"Rhythmic Ripples."

POSEN (Poland) Polskie-Radió. WL. 344 m. (872 kc); 1.5 kw. Transmits at intervals from 12.15 p.m.

PRAGUE (Czechoslovakia) Strasnice. WL. 348.9 m. (860 kc); 5 kw. Transmits at intervals from 10.0 a.m.

ROME (Italy) Unione Radiofonica Italiana (IRO). WL. 448.4 m. (669 kc); 3 kw. Transmits at intervals from 11.30 a.m.

SCHENECTADY (U.S.A.) General Electric Company (WGY). WL. 379.5 m. (790 kc); 50 kw. Programme relayed by 2XAD on 21.96 m. (13,661 kc), from 6.0—7.0 p.m. and by 2XAF on 31.4 m. (9,554 kc) from 11.0 p.m.

5.0 a.m.—Shea's Buffalo Symphony Orchestra. 6.0 a.m. (approx.)—Close Down.

STOCKHOLM (Sweden) Radiotjänst (SASA). WL. 453.8 m. (661 kc.); 1.5 kw. Relayed by Motala on 1,380 m. (217 kc.); Gäddede, 416.7 m. (720 kc.); Malmö, 260.9 m. (1,150 kc.); and Sundsvall, 545.6 m. (550 kc.)

STUTT GART (Germany) Süddeutscher Rundfunk. WL. 380.7 m. (788 kc); 4 kw. Transmits at intervals from 11.30 a.m.

7.15 p.m.—Concert of Russian Music. 1. Mazurka from "A Life for the Czar" (Glinka). 2. Air from "Eufra O negin" (Tchaikovsky). 3. "Bolek"—a Story (Maxim Gorki). 4. The Storm (Tchaikovsky). 5. The Spirits of the Steppes (Puschkin). 6. Chorus: (a) Schnitterlied, (b) Drüben hinter Wald. 7. Fairy Tales (Ssolugub). 8. The Grumbler (Turgenev). 9. Baba Jaga (Liadoff). 10. Air from "Prince Igor" (Borodin). 11. Steppenskizze (Borodin). 12. "The Reception"—Farce (Maxim Gorki). 13. Chorus: (a)

Two Tartar Songs, (b) Love Song. 14. The Wolves (Tolstoi). 15. Selection from "Le Coq d'Or" (Rimsky-Korsakoff). 16. Among Strangers (Maxim Gorki). 17. Chorus: (a) An Orphan's Laments, (b) Two Latvian Songs. 18. Stenka Rasin (Glazounov). News.

TOULOUSE (France) Radiophonie du Midi. WL. 391 m. (767 kc); 3 kw. Transmits at intervals from 10.15 a.m.

VIENNA (Austria) Radio-Wien. WL. 576 and 517.2 m. (520 and 580 kc); 0.75 and 5 kw. Relayed by Innsbruck, on 294.1 m. (1,020 kc), and Klagenfurt, 272.7 m. (1,100 kc).

WARSAW (Poland) Polskie-Radió. WL. 3,111.1 m. (270 kc); 10 kw. Transmits at intervals from 11.0 a.m.

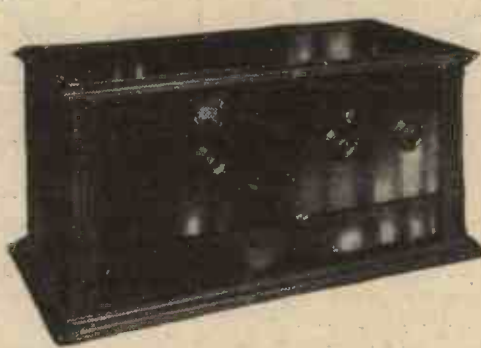
WILNO (Poland) Polskie-Radió. WL. 435 m. (689 kc); 0.5 kw. Transmits at intervals from 3.25 p.m.

ZAGREB (Yugo-Slavia) Radioklub-Zagreb. WL. 310.5 m. (966 kc.); 0.35 kw. Transmits at intervals from 12.15 p.m.

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SPECIALISTS IN L.F. AMPLIFICATION



THE MARK OF BETTER RADIO

PROGRAMMES FOR WEDNESDAY (March 28)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME

BARCELONA (Spain)

Radio-Barcelona (EAI). WL. 344.8 m. (870 kc.); 1.5 kw. Transmits at intervals from 11.0 a.m. to 1.0 p.m.—Exchange.
6.10 p.m.—*Quintet Selections*.
8.30 p.m.—Castilian Grammar Lesson.
9.0 p.m.—Chimes and Weather.
9.5 p.m.—Exchange and News.
9.10 p.m.—*Quintet Selections*. 1. Marche des Pachas (Register). 2. Selection from "La Temprancia" (Gimenez). 3. Vecchio Minuetto (Caludi). 4. Aubade (Sgambati). 5. Sérénade amoureuse (Worsley).
9.45 p.m.—Talk on "Francisco Mateu" and Reading from his Poems.
10.0 p.m.—Exchange Closing Prices.
10.5 p.m.—*Soprano Solos*. 1. Bien ou rien (Worsley). 2. Selection from "Madame Butterfly" (Puccini). 3. Pensant amb tu (Longas). 4. Romance from "Louise" (Charpentier).
10.30 p.m.—Relay of Part of the Concert from the "Granja Royal."
11.45 p.m. (approx.)—Close Down.

BERGEN (Norway)

Kringkastingselskap. WL. 369.9 m. (811 kc.); 1.5 kw. Transmits at intervals from 10.15 a.m. to 1.0 p.m.—Divine Service.
7.30 p.m.—*Orchestral Music*. 1. Prelude (Svendsen). 2. Spring Song (Sibelius). 3. Prelude and Siciliana from "Cavalleria Rusticana" (Mascagni). 4. Ritorna (Variosio). 5. Arlequinade (Ganne).
8.10 p.m.—Choral Selections.
8.30 p.m.—French Lesson.
9.0 p.m.—Weather, News and Time.
9.15 p.m.—*Dance Music*.

BERLIN (Germany)

Königswusterhausen. WL. 1,250 m. (240 kc.); 3.5 kw. Transmits at intervals from 11.0 a.m. to 1.0 p.m.—Programme from Hamburg.
5.0 p.m.—Technical Talk.
5.30 p.m.—French Lesson.
5.55 p.m.—Talk.
6.20 p.m.—Talk, "The European Spirit from 1750-1914—Voltaire."
6.45 p.m.—Talk, "The League of Nations and the Schools."
7.30 p.m.—Programme from Voxhaus.

BERLIN (Germany)

Voxhaus. WL. 484.6 m. (619 kc.) 4 kw. Transmits at intervals from 9.10 a.m. to 1.0 p.m.—*Orchestral Concert*.
5.20 p.m.—Gardening Talk.
5.50 p.m.—Talk, "How Does the Modern Man Regard Modern Woman in the Professional World?"
6.20 p.m.—Talk, "The Berlin Museums."
6.50 p.m.—Talk on "The Philosophy of Nationalism."
7.30 p.m.—*Concert*.—Part 1, Oscar Straus. 1. "A Waltz Dream"—Overture. 2. Soprano Song from "The Chocolate Soldier." 3. Duet from "The Chocolate Soldier." 4. Prelude, Soprano and Tenor Selections from "Rund um die Liebe." Part 2, Emmerich Kálmán. 5. March Song from "The Last Waltz." 6. "Der Zigeunerprimas"—Overture. 7. Soprano Song from "The Czardas Princess." 8. Introduction to "Die Faschingsfee." 9. Duet from "The Little Dutch Girl." 10. March from "Der Zigeunerprimas."
9.15 p.m.—News.
9.30 p.m.—*Dance Music*.
11.30 p.m. (approx.)—Close Down.

BERNE (Switzerland)

Radio-Berne. WL. 411 m. (730 kc.); 1.5 kw. Transmits at intervals from 12 noon to 1.0 p.m.—Time and Weather.
6.35 p.m.—Talk, "Cuno Amiet and his work."
7.0 p.m.—*Song Recital*. Interludes by the Kursaal Orchestra. News and Weather in the interval.
9.30 p.m. (approx.)—Close Down.

BRATISLAVA (Czecho-Slovakia)

Radio Bratislava. WL. 300 m. (1,000 kc.); 0.5 kw. 4.0 p.m.—*Concert*. 1. Lyric Intermezzo (Jirak). 2. "Il Seraglio"—Selections (Mozart). 3. "The Magic Flute"—Selections (Mozart). 4. Selection (Dvorák). 5. "The Mother (Suk). 6. "The Marriage of Figaro"—Selection (Mozart). 7. Slovakian Songs (Novak). 8. Songs (Mozart).

5.0 p.m.—Talk.
5.40 p.m.—Agricultural Talk.
6.0 p.m.—Slovakian Programme.
7.0 p.m.—Programme relayed from Prague.

BRESLAU (Germany)

Schlesische Funkstunde. WL. 322.6 m. (930 kc.); 4 kw. Relay by Gleiwitz, on 250 m. (1,200 kc). Transmits at intervals from 10.15 a.m. to 1.0 p.m.—Talk, "Cardinal von Diepenbrock and the Trouble in Upper Silesia."
7.20 p.m.—*Schubert Concert*. 1. Overture in D major, in the Italian style. 2. Symphony in D major, No. 1, 3. Five Minuets and Six Trios for String Orchestra. 4. "Fierrabras"—Overture, Op. 76. News and Theatre Talk.
9.30 p.m.—*Gramophone Concert*.

BRÜNN (Czecho-Slovakia)

Komarov. WL. 441 m. (680 kc.); 3 kw. Transmits at intervals from 11.15 a.m. to 1.0 p.m.—Time and German Transmission.

5.25 p.m.—Agricultural Report.
5.40 p.m.—Talk.
7.0 p.m.—*Choral Concert*.
8.0 p.m.—*Orchestral Concert*.
9.0 p.m.—Programme from Prague.

BRUSSELS (Belgium)

Radio Belgique. WL. 508.5 m. (590 kc.); 1.5 kw. 5.0 p.m.—*Trio Concert*.
7.45 p.m.—Radio Chronique.
8.15 p.m.—Gramophone Records, with commentary.

8.30 p.m.—*Concert* by the Orchestra of the Royal Zoological Society at Antwerp, Music from the works of Florent Schmitt, under the Direction of the Composer: 1. "Salomé." 2. Two Chorales: (a) Danse des Devasdasis for Soprano, Mixed Choir and Orchestra; (b) War Song, for Soprano, Male Voice Choir and Orchestra. 3. Finale, for Cello and Orchestra. 4. Mirages—for Orchestra: (a) Tristesse de Pan; (b) La tragique chevauchée. 5. Psalm No. 46—for Soprano, Mixed Choir and Orchestra.

10.15 p.m.—News.
10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)

Magyar Radio Ujsag. WL. 555.8 m. (570 kc.); 3 kw. Transmits at intervals from 8.30 a.m. to 1.0 p.m.—*Trio Concert*.
7.45 p.m.—Play.
9.0 p.m.—Time, News and Tziganic Music.

COLOGNE (Germany)

Westdeutscher Rundfunk. WL. 283 m. (1,060 kc.); 2.5 kw. Transmits at intervals from 9.30 a.m. to 1.0 p.m.—See Langenberg.
2.45 p.m.—Talk for Women.
3.10 p.m.—Review of Books.
3.30 p.m.—See Langenberg.
4.0 p.m.—Topical Talk.
4.15 p.m.—Education Talk.
4.30 p.m.—Book Talk.
5.0 p.m.—*Chamber Music*: 1. Variations in A major (Mozart). 2. Wind Quintet in B flat major, Op. 28 (Schmidt). 3. Adagio and Minuet (Haydn). 4. Two Arabesques (Debussy).
6.15 p.m.—Reading.
6.45 p.m.—German Culture Talk.
7.15 p.m.—Programme from Münster (See Langenberg) followed by News and Sports Notes and Concert from the Hotel zur Post, Elberfeld.
11.0 p.m. (approx.)—Close Down.

COPENHAGEN (Denmark)

Copenhagen Radio. WL. 337 m. (890 kc.); 1 kw. Relay by Kalundborg on 1,153.8 m. (260 kc). Transmits at intervals from 6.30 a.m. to 1.0 p.m.—News, Exchange and Time.
6.30 p.m.—Talk, "Psycho-Technology."
7.0 p.m.—Swedish Poem Recital.
8.15 p.m.—News.
8.30 p.m.—*Orchestral Concert* of Swedish Music, from the works of Södermann, Pegel, Sjögren and Peterson-Berger.
10.0 p.m. (approx.)—Close Down.

CORK (Ireland)

Cork Broadcasting Station (6CK). WL. 400 m. (750 kc.); 1.5 kw. 2.30 p.m.—Weather, Stock Market Report, and Gramophone Records.
6.15 p.m.—Programme from Dublin.

CRACOW (Poland)

Polskie Radió. WL. 566 m. (530 kc.); 1.5 kw. Transmits at intervals from 11.0 a.m. to 1.0 p.m.—"Letter Box."

7.5 p.m.—Programme relayed from Warsaw.

7.30 p.m.—*Orchestral, Vocal and Instrumental Concert*, from the Works of Mozart, Bellini, Rossini, Handel, Tchaikovsky, Verdi, Saint-Saëns, Rubinstein, Puccini, Gretchaninoff, Giordano, Tosti, Rimsky-Korsakoff and Seroff.
9.0 p.m.—Programme relayed from Warsaw.
9.30 p.m. (approx.)—Close Down.

DUBLIN (Ireland)

Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc.); 1.5 kw. Transmits at intervals from 1.30 p.m. to 1.0 p.m.—Children's Corner.
7.0 p.m.—Women's Programme.
7.20 p.m.—News.
7.30 p.m.—Irish Lesson by M. O. Maolain.
7.45 p.m.—German Lesson, by Olga von Wenckstern.
8.0 p.m.—"A Traveller Returns"—Sketch by Mary O'Hea and Company.
8.30 p.m.—"Stanford" Recital, by Percy Whitehead (Baritone).
8.50 p.m.—"Request Music," by the Station Orchestra.
9.15 p.m.—Inelia Finneberg (Soprano).
9.30 p.m.—The Celeste Station Orchestra.
9.45 p.m.—"The Old Timers," in Harmony and Hilarity.
10.30 p.m.—News, Weather, and Close Down.

FRANKFURT-am-MAIN (Germany)

Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc.); 4 kw. Relay by Cassel on 252.1 m. (1,190 kc). Transmits at intervals from 12.30 p.m. to 1.0 p.m.—*Concert*.
5.15 p.m.—Wireless Notes and other Announcements.
5.30 p.m.—Talk, "The German Drama and Theatre from the Seventeenth Century up to the Present Day."
6.0 p.m.—"Maxim Gorki," Talk on his Sixtieth Birthday.
6.30 p.m.—"La Traviata"—Opera (Verdi), from the Opera House.

HAMBURG (Germany)

Norag (ha, in Morse). WL. 396 m. (757 kc.); 4 kw. Relay by Bremen on 272.7 m. (1,099 kc); Hanover, 297 m. (1,100 kc); and Kiel, 278 m. (1,076 kc). Transmits at intervals from 5.55 a.m. to 1.0 p.m.—*Concert* from Works of Kreisler: Jan Gesterkamp (Violin). 1. Tempo di menuetto (Pugnani-Kreisler). 2. Rondo (Mozart-Kreisler). 3. Recitativo and Scherzo-Caprice (Kreisler). 4. (a) Liebeslied, (b) Schön Rosmarin (Kreisler). 5. Tambourin Chinois (Kreisler). 6. Caprice Viennois (Kreisler).
5.0 p.m.—(Hamburg and Kiel)—*Orchestral Music*.
6.0 p.m.—Talk, "Animals in Superstition," from Kiel.
6.35 p.m.—Talk, "The Easter Festival," from Kiel.
6.55 p.m.—Weather.
7.0 p.m.—(Hamburg, Bremen and Kiel)—"Die Hochzeit in der Pückelballe"—Play (Scharrelmann).
10.25 p.m.—Ice Report.
10.30 p.m.—(Hamburg, Bremen and Kiel)—*Cabaret Concert*.
11.30 p.m. (approx.)—Close Down.

HILVERSUM (Holland)

Algemeene Vereeniging Radio-Omroep. WL. 1,069 m. (280.5 kc.); 5 kw. 11.40 a.m.—Police News.
12.10 p.m.—*Trio Concert*.
2.10 p.m.—Programme for Women and Children.
5.10 p.m.—*Concert*: 1. "La Preciosa"—Overture (Weber). 2. Northern Lyrics—Suite (Palmgren). 3. Soprano Solo from "La Bohème" (Puccini). 4. La Folletta—Soprano Solo (Marchesi). 5. Album Leaf (Gade). 6. Selection from "Proserpine" (Saint-Saëns). 7. Soprano Solos: (a) Aria from "Cavalleria Rusticana" (Mascagni); (b) "The Angel's Song" (Braga). 8. Gipsy Life (Schumann). 9. Birthday.—Serenade (Lincke). 10. Ave Maria (Gounod). 11. Moonlight on the Alster (Fétras). 12. Wolga Song. 13. Blaze Away—March (Holzmann).
6.55 p.m.—Talk.
7.35 p.m.—*Chamber Music*. Trio in F minor, op. 65 (Dvorák).
8.22 p.m.—Talk.
8.54 p.m.—*Chamber Music* (contd.) Trio in F major (Saint-Saëns).

9.18 p.m.—Reading.
9.40 p.m.—Weather and News.
9.50 p.m.—*Dance Music*.
11.40 p.m. (approx.)—Close Down.

HUIZEN (Holland)

WL. 340.9 m. (880 kc.); 4 kw. (until 5.40 p.m.). Transmits from 5.40 p.m. on 1,950 m. (154 kc).
12.10 p.m.—*Trio Concert*.
4.55 p.m.—Children's Corner.
6.40 p.m.—Shorthand Lesson.
7.10 p.m.—Talk.
7.40 p.m.—*Vocal and Instrumental Concert* and Talk.

KATTOWITZ (Poland)

Polskie-Radio. WL. 422 m. (710 kc.); 10 kw. Transmits at intervals from 3.20 p.m. to 1.0 p.m.—Political Talk.
7.30 p.m.—*Military Band Concert*.
9.0 p.m.—Time and News.
9.30 p.m.—*Concert* from the Café Atlantic.

KÖNIGSBERG (Germany)

Ostmarken Rundfunk. WL. 330.3 m. (908 kc.); 1 kw. Relay by Danzig, on 272.7 m. (1,100 kc). Transmits at intervals from 8.0 a.m. to 1.0 p.m.—*Orchestral Concert*.
5.30 p.m.—Talk for Parents.
6.0 p.m.—(Königsberg only)—Jakob Schaffner reads from his own Works
6.55 p.m.—Weather.
7.0 p.m.—"The Barber of Seville"—Opera (Rossini). Weather, News and Sports Notes, followed by *Dance Music*.
10.45 p.m. (approx.)—Close Down.

KOVNO (Lithuania)

Radio Kaunas. WL. 2000 m. (150 kc); 15 kw. Transmits from 4.0 p.m. to 1.0 p.m.—Talk, "The Ancient Capital of Brazil."
6.0 p.m.—Time, Weather and News.
6.30 p.m.—"Aida"—Opera (Verdi) from the National Theatre.

LANGENBERG (Germany)

Westdeutscher Rundfunk. WL. 470 m. (638 kc); 2.5 kw. Programme also for Aix-la-Chapelle, 401 m. (748 kc); Cologne, 283 m. (1,060 kc) and Münster, 241.9 m. (1,240 kc). Transmits at intervals from 9.30 a.m. to 1.0 p.m.—*Concert* from the Café Corso, Dortmund. 1. "Orpheus in the Underworld"—Overture (Offenbach). 2. Waltz (Esslinger). 3. Dance of the Hours (Ponchielli). 4. Selection from "Die Töten Augen" (d'Albert). 5. Violin Solos: (a) Nocturno (Haslindé). (b) Canary bird (Poliakin). 6. (a) Intermezzo from "Mona Lisa" (Schillings); (b) Minuetture (Barwinsky). 7. Lehar Potpourri (Geiger). 8. Olympiade March (Löwenthal).
2.45—3.30 p.m.—Programme from Cologne.
3.30 p.m.—Talk from Düsseldorf.
4.0—7.15 p.m.—Programme from Cologne.
7.15 p.m.—"Old Westphalian Rustic Wedding"—Play with Old Westphalian Songs and Dances. Followed by News from Cologne and Concert from Elberfeld.
11.0 p.m. (approx.)—Close Down.

LAUSANNE (Switzerland)

Société Romande de Radiophonie (HB2). WL. 680 m. (441 kc); 0.6 kw. Transmits at intervals from 6.45 a.m. to 1.0 p.m.—Weather.
7.2 p.m.—Talk, "The Making of Gruyère Cheese."
7.30 p.m.—Programme from Basle.

LEIPZIG (Germany)

Mitteldeutscher Rundfunk. WL. 366.3 m. (819 kc); 4 kw. Relay by Dresden, on 275.2 m. (1,090 kc). Transmits at intervals from 9.0 a.m. to 1.0 p.m.—Weather and Time.
7.15 p.m.—Pianoforte and Violin Recital.
8.15 p.m.—*Concert*. 1. "The Daughter of the Regiment" (Donizetti). 2. Songs: (a) Liebeszauber (Schulz); (b) Tafellied; (c) Wenn ich einmal der Herrgott wär (Binder). 3. Two Norwegian Dances (Grieg). 4. Songs. 5. Two Waltzes (Dvorák). 6. Songs. 7. Dance (Sullivan).
9.15 p.m.—News.
9.30 p.m.—*Dance Music*.
11.0 p.m. (approx.)—Close Down.

LILLE (France)

PIT. WL. 285.8 m. (1,050 kc); 0.5 kw. Transmits at intervals from 12.30 p.m. to 1.0 p.m.—*Concert*.
8.30 p.m.—*Instrumental Concert*, followed by *Dance Music*.

MADRID (Spain)

Union Radio (EAI7). WL. 375 m. (800 kc); 1.5 kw. Transmits at intervals from 11.45 a.m. to 1.0 p.m.—*Orchestral Concert*. 1. La balada de la luz—Selection (Vives). 2. Rhinegold—Selection (Wagner). 3. La leyenda del monje—Selection (Chapi). 4. Werther—Selection (Massenet). In the Interval: Talk, "Dramatic Art."
9.30 p.m.—History Talk.
9.45 p.m.—Talk, "Meteorology and Agriculture—Weather Forecasts."
10.0 p.m.—Time, and Exchange Closing Prices.
10.10 p.m.—*Popular Programme*. 1. Gilguero chico—Prelude (Callejo and Lleó). 2. Malditos sean los celos—Song (Esquerria). 3. The Count of Luxembourg—Aria (Lehár). 4. Curro Vargas (Chapi). 5. Die ideale Gattin—Barcarolle (Lehár). 6. Tratado de Urbanidad—Monologue (Abati). 7. Les Moutiquettes (Lleó). 8. Benamor—Aria (Luna). 9. Bohemios—Duet (Luna). In the Interval: Private Enterprise in Aviation, and its Possibilities in Central Spain."
11.45 p.m. (approx.)—"Meteere en Honduras"—One Act Farce (Rubio and Espino).
12.20 a.m. (Thursday)—News.
12.30 a.m. (approx.)—Close Down.

MILAN (Italy)

Unione Radiofonica Italiana (IMI). WL. 526.3 m. (570 kc); 7 kw. Transmits at intervals from 11.15 a.m. to 1.0 p.m.—French Course.
7.30 p.m.—Wireless Notes.
7.50 p.m.—History Talk.
8.0 p.m.—*Concert*. 1. Violin Solos: (a) Fantasia Villerencia (Fiorini); (b) Glöcken—Waltz (Theimer-Vineta); (c) I dispettosi amanti (Parelli); (d) Il liutista di Cremona (Hubay). 2. "La Calzetta Rotta"—Comedy (Rocca). 3. Orchestral Selections.
9.55 p.m.—News.
10.0 p.m.—*Orchestral Selections*. 1. Clo Clo—Selection (Lehár). 2. En cheminant (Gillet).
10.30 p.m. (approx.)—Close Down.

MUNICH (Germany)

Deutsche Stunde in Bayern. WL. 535.7 m. (560 kc); 4 kw. Relay by Nürnberg on 303 m. (990 kc) and Augsburg on 566 m. (530 kc). Transmits at intervals from 11.45 a.m. to 1.0 p.m.—Talk, "Dürer as Artist and Man," from Nürnberg.
6.30 p.m.—*Sacred Concert*.
8.50 p.m.—*Concert*. 1. Phantom Brigade (Myddleton). 2. Gavotte from "Idomeneus" (Mozart). 3. Caucasian Suite (Ippolitov-Ivanov). 4. My Teddy Bear—Concerto Polka (Gunglberger). 5. Murrelendes Lüftchen (Jensen). 6. A Hundred Years in Five Minutes—Waltz-Potpourri (Fétras). 7. (a) Ich liebe Dich, (b) Erotik (Grieg). 8. Purzelbaum (Lincke).
9.15 p.m.—News.
9.20 p.m.—*Concert* from the Regina Palace Hotel.
10.30 p.m. (approx.)—Close Down.

NAPLES (Italy)

Unione Radiofonica Italiana (INA). WL. 333.3 m. (900 kc); 1.5 kw. Transmits at intervals from 12 noon to 1.0 p.m.—Wireless Notes.
7.40 p.m.—News.
7.48 p.m.—Harbour Notes.
7.50 p.m.—*Concert* of Classical Chamber Music. 1. Sonata for Violin and Pianoforte (Veracini). 2. Songs: (a) Se tu m'ami (Pergolesi); (b) O del mio dolce ardore (Glöck); (c) Al dolce guidami castel natio (Donizetti). 3. Adagio (Tartini). 4. Moment musical (Schubert). 5. Valse triste (Sibelius). 6. Nocturne (Chopin). 7. Etude (Chopin)—for Pianoforte. 8. Petite fugue (Schumann). 9. Volga Song (Schumann). 10. The Rivulet and the Dryads (Moussorgsky)—for Violin. 11. Songs (Gretchaninoff): (a) Le steppe, (b) Ninna nanna. 12. Second and Fourth Movements from the Trio, Op. 80, for Pianoforte, Violin and Cello (Schumann).
9.55 p.m.—Calen lar and Programme Announcements.
10.0 p.m. (approx.)—Close Down.

OSLO (Norway)

Kringkastingselskapet. WL. 461.5 m. (650 kc); 1.5 kw. Programme relayed by Hamar on 555.8 m. (540 kc); Porsgrund, 500 m. (600 kc); Frederiksstadt, 434.8 m. (690 kc.); Notodden, 411 m. (730 kc); and Rjukan, 448 m. (670 kc). Transmits at intervals from 10.10 a.m.

Programmes for Wednesday.—(Cont.)

5.40 p.m.—French Lesson.
6.30 p.m.—Recitations.
7.0 p.m.—Time.
7.30 p.m.—Orchestral Concert.
8.30 p.m.—Song Recital.
9.0 p.m.—Weather and News.
9.15 p.m.—Topical Talk.
9.30 p.m.—(approx.)—Gramophone Dance Music.
11.0 p.m.—(approx.)—Close Down.

PARIS (France)

Ecole Supérieure (FPTT). WL 458 m. (655 kc); 0.5 kw.
Transmits at intervals from 8.0 a.m.
6.0 p.m.—Radio-Journal de France.
8.0 p.m.—Talks on "Wireless," "The Cinema," "Rose-gardening."
9.0 p.m.—"The Pearl Fishers."
Opera Selection (Bizet), followed by News and Dance Music.
12.0 midnight (approx.)—Close Down.

PARIS (France)

Eiffel Tower (FL). WL 2,650 m. (113 kc); 5 kw.
7.56 a.m.—Time Signal (on 32 m.; 9,375 kc).
9.26 a.m.—Time Signal.
5.45 p.m.—Le Journal Parlé. Talks on "The Eclectic Group in Geneva," "Science," etc.
7.10 p.m.—Weather.
7.30 p.m.—Sextet Concert.
8.30 p.m.—Le Journal Parlé. Talks on "The Eclectic Group in Geneva," "Science," etc.
10.26 p.m.—Time Signal.
PARIS (France)
Radio-Paris (CFR). WL 1,750 m. (171 kc); 3 kw.
Transmits at intervals from 7.30 a.m.

12.30 p.m.—Concert. 1. Ballet Music from "Antar" (Dupont). 2. Sérénade carnavalesque (Erlanger). 3. Aragonese (Falla). 4. Romances sans paroles (Faure). 5. (a) Grave (Bach), (b) Plus que lente (Debussy); (c) Liebesfreud (Kreisler). 6. Bourée (Février). 7. Cadet roussel (Fourdrain). 8. Adagio (Gounod). 9. La Bohème (Puccini). News.
1.50 p.m.—Market Prices.
3.30 p.m.—Exchange Quotations.
3.45 p.m.—Concert. 1. "Les Amoureux de Catherine" (Marechal). 2. 'Cello Solos: (a) O Belle nuit (Casella), (b) Caprice hongrois (Duckler). 3. Nocturne (Février). 4. Pianoforte Solos: (a) Le Petit berger (Debussy), (b) Etude (Chopin). 5. Pavane (Barlow). 6. Violin Solos: (a) Cavatina (d'Ambrosio), (b) Scherzo (Dittersdorf). 7. Manon Lescaut (Puccini).
4.45 p.m.—Exchange Quotations.
7.0 p.m.—Agricultural Report.
8.0 p.m.—Exchange.
8.30 p.m.—"Mass in D" (Beethoven). News in the Interval.

PITTSBURGH (U.S.A.)

Westinghouse Electric (KDKA). WL 315.6 m. (950 kc); 50 kw.
Transmits at intervals from 2.45 a.m.
11.15 p.m.—Music from the William Penn Hotel.
12.0 midnight.—Time, and University of Pittsburgh Address.
12.15 a.m. (Thursday).—"King Comfort and his Oil-O-Matics."
12.45 a.m.—"Political Situation in Washington To-night," from WJZ, New York.
1.0 a.m.—3.0 a.m.—Programme from WJZ, New York. "Champion Sparkers."
1.30 a.m.—"Sylvania Foresters."
2.0 a.m.—"Variety Hour."
3.0 a.m.—The Merry Maytag Ramblers.
3.30 a.m.—"Power Period."
4.0 a.m.—Time and Weather.
4.10 a.m. (approx.)—Close Down.

POSEN (Poland)

Polskie-Radio. WL 344 m. (872 kc); 1.5 kw.
Transmits at intervals from 12.0 noon.
7.0 p.m.—Finance Notes.
7.30 p.m.—Concert. 1. Prelude and

Fugue in C minor (Bach). 2. Organ Solos (Bach). 3. Bass Solos. 4. Five Organ Chorales (Surzynski). 5. Bass Solos. 6. Organ Improvisation on "Adoremus" (Nowowiejski).
9.0 p.m.—Time and Variety.
9.20 p.m.—Weather.
9.40 p.m.—Dancing Instruction.
10.0 p.m.—Dance Music from the Palais Royal.
11.0 p.m. (approx.)—Close Down.

PRAGUE (Czechoslovakia)

Strasnice. WL 348.9 m. (860 kc); 5 kw.
Transmits at intervals from 10.0 a.m.
5.5 p.m.—Agricultural Report.
5.25 p.m.—Czech-German Conversation.
6.0 p.m.—Slovakian Concert.
7.0 p.m.—Weather and News.
7.5 p.m.—Popular Concert.
8.40 p.m.—Recital of Spanish Music for Pianoforte.
9.0 p.m.—Time and News.
9.5 p.m.—Orchestral Selections.

ROME (Italy)

Unione Radiofonica Italiana (IRO). WL 448.4 m. (669 kc); 3 kw.
Transmits at intervals from 11.30 a.m.
7.0 p.m.—German Lesson.
7.30 p.m.—Time, News, Exchange and Weather.
7.45 p.m.—Talk on "The Pantheon."
8.0 p.m.—Relay from a Theatre. In the Interval: Review of Books, News.

SCHENECTADY (U.S.A.)

General Electric Company (WGY). WL 379.5 m. (790 kc); 50 kw.
Programme relayed by 2XAD on 21.96 m. (13,661 kc) from 11.0 p.m.—3.30 a.m. (Thursday).
Transmits at intervals from 11.45 a.m.
11.0 p.m.—Exchange and News.
11.20 p.m.—U.S. Radio Farm School.
11.30 p.m.—WGY Agricultural Programme.
12.15 a.m. (Thursday)—Studio Programme.
12.30 a.m.—"The Soconyans," from New York.
1.0 a.m.—Remington Rand Band.
1.30 a.m.—"Radio Rollickers."
2.0 a.m.—Time and "The Ipana Troubadours," from New York.
2.30 a.m.—Goodrich—Silverton

Quartet and Orchestra, from New York.
3.30 a.m.—"News from Time."
4.0 a.m. (approx.)—Close Down.

STOCKHOLM (Sweden)

Radiotjänst (SASA). WL 453.8 m. (661 kc); 1.5 kw. Relayed by Motala on 1,380 m. (217 kc); Göteborg, 416.7 m. (720 kc); Malmö 260.9 m. (1,150 kc); and Sundsvall, 545.6 m. (550 kc).
Transmits at intervals from 11.35 a.m.
5.0 p.m.—Children's Corner.
5.15 p.m.—Technical Talk.
5.30 p.m.—Light Music.
6.0 p.m.—Dramatic Criticism.
6.20 p.m.—German Lesson.
6.50 p.m.—Symphony Concert with introductory talk. 1. Academic Festival Overture (Brahms). 2. Serenade in A (Brahms). 3. Symphony in C minor (Brahms).
8.15 p.m.—News and Weather.
8.40 p.m.—Play.
9.15 p.m. (approx.)—Close Down.

STUTT GART (Germany)

Süddeutscher Rundfunk. WL 380.7 m. (788 kc); 4 kw.
Transmits at intervals from 11.30 a.m.
3.15 p.m.—Concert. 1. Germanentreu—March (Blankenburg). 2. Old Vienna Waltz (Ziehrer). 3. Xylophone Solo. 4. "The Bride"—Overture (Auber). 5. Selection from "Djamileh" (Bizet). 6. Ballet Divertissement (Blattermann). 7. My Dream—Waltz (Waldteufel). 8. Under the Banner of Victory—March (Blon).
5.0 p.m.—Time, Weather and Agricultural Notes.
5.15 p.m.—Talk, "Our Music a Hundred Years Ago," from Karlsruhe.
5.45 p.m.—Talk, "The Agricultural Career."
6.15 p.m.—Time and Weather.
6.30 p.m.—Programme from Frankfurt, followed by News and Silent Night.

TOULOUSE (France)

Radiophonie du Midi. WL 391 m. (767 kc); 3 kw.
Transmits at intervals from 10.15 a.m.
12.45 p.m.—Orchestral Concert.
8.30 p.m.—Concert of Dance Music.
8.45 p.m.—"Pelleas and Melisande"—Opera Selection (Debussy).

VIENNA (Austria)

Radio-Wien. WL 576 and 517.2 m. (520 and 580 kc); 0.75 and 5 kw. Relayed by Graz on 357.1 m. (840 kc); Innsbruck, 294.1 m. (1,020 kc); and Klagenfurt, 272.7 m. (1,100 kc).
Transmits at intervals from 10.0 a.m.
5.30 p.m.—Agricultural Talk.
6.0 p.m.—Italian Lesson.
6.30 p.m.—Health Talk.
7.0 p.m.—Programme Notes.
7.5 p.m.—English Literature Lesson.
7.30 p.m.—Anton Amon Reading, followed by Light Music.

WARSAW (Poland)

Polskie-Radio. WL 1,111.1 m. (270 kc); 10 kw.
Transmits at intervals from 11.0 a.m.
5.15 p.m.—Orchestral Concert.
6.5 p.m.—Agricultural Report.
6.15 p.m.—Variety.
6.35 p.m.—Talk, "The Polish Rivers."
7.0 p.m.—Talk.
7.30 p.m.—Concert. 1. "Oberon"—Overture (Weber). 2. Selections from "Samson and Delilah" (Saint-Saëns). 3. Dance from "Halka" (Moniuszko). 4. Fantasia on "Eugen Onegin" (Tchaikovsky). 5. Ballet Suite from "The Prophet" (Meyerbeer). In the Interval: News in French.
9.0 p.m.—Time and News.
9.30 p.m. (approx.)—Close Down.

WILNO (Poland)

Polskie-Radio. WL 435 m. (689 kc); 0.5 kw.
Transmits at intervals from 3.25 p.m.
6.0 p.m.—News.
6.25 p.m.—Time and Variety.
6.35 p.m.—Wireless Talk.
7.30 p.m.—Programme from Warsaw.
9.0 p.m.—News and Close Down.

ZAGREB (Yugo-Slavia)

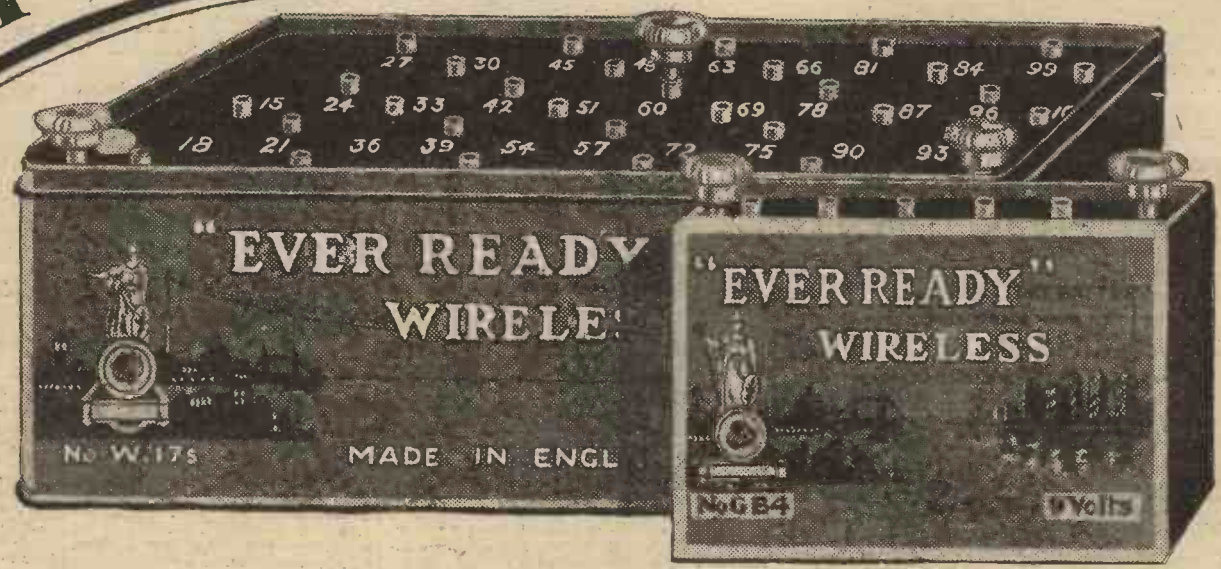
Radioklub-Zagreb. WL 310.5 m. (966 kc); 0.35 kw.
Transmits at intervals from 12.15 p.m.
7.0 p.m.—Talk, "The History of Music."
7.15 p.m.—French Lesson.
7.30 p.m.—Announcements.
7.35 p.m.—"A Winter's Tale." A Drama (Shakespeare).
8.50 p.m.—Announcements.
9.0 p.m.—Musical Selections.

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PROGRAMMES FOR THURSDAY (March 29)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME

BARCELONA (Spain)

Radio-Barcelona (EAJ). WL. 344.8 m. (870 kc.); 1.5 kw. Transmits at intervals from 11.0 a.m. 6.0 p.m.—Exchange. 6.10 p.m.—Quintet Selections. 6.30 p.m.—Children's Programme. 6.50 p.m.—Talk, "The Streets of Barcelona." 8.40 p.m.—English Lesson. 9.0 p.m.—Chimes and Weather. 9.5 p.m.—Exchange and News. 9.10 p.m.—Orchestral Selections. 1. Lucero—Spanish March (Galvez). 2. Russian Lullaby—Waltz (Irving Berlin). 3. Baltimore—Fox-trot (Healy). 4. Chulángero (Jarque). 5. Dance (Bee). 6. Only for you—Waltz (Margenat). 7. Oriental Dream Eyes—Fox-trot (Platen). 10.0 p.m.—Exchange Closing Prices. 10.5 p.m.—The First and Second Act of "Es mi Hombre" (Arnieches). 11.30 p.m. (approx.)—Close Down.

BERGEN (Norway)

Kringkastingselskap. WL. 369.9 m. (811 kc.); 1.5 kw. Transmits at intervals from 10.15 a.m. 7.0 p.m.—Orchestral Music. 1. "Russian and Ludmilla"—Overture (Glinka). 2. A Tear (Moussorgsky). 3. Rhapsody (Wekler). 4. Steppes-kizze (Borodin). 5. Waltz Fantasia in B minor (Glinka). 6. Andante from the Fifth Symphony (Tchaikovsky). 8.0 p.m.—English Lesson, by Mr. F. L. E. Somerville. 8.30 p.m.—Weather, News and Time. 8.45 p.m.—Ernst Rolf's Revue.

BERLIN (Germany)

Königswusterhausen. WL. 1,250 m. (240 kc.); 35 kw. Transmits at intervals from 1.0 p.m. 4.0 p.m.—Programme from Voxhaus. 5.0 p.m.—Music Talk. 5.30 p.m.—Spanish Lesson. 5.55 p.m.—Agricultural Talk. 6.20 p.m.—Talk, "Theodor Bohne." 6.45 p.m.—Legal Talk. 7.30 p.m.—Programme from Voxhaus.

BERLIN (Germany)

Voxhaus. WL. 484.6 m. (619 kc.); 4 kw. Transmits at intervals from 9.10 a.m. 4.0 p.m.—Concert. 1. Minuet and Procession of the Trolls (Grieg). 2. Soprano Solos, (a) Prayer (Blech), (b) Ring a Ring o' Roses (Greenaway), (c) The Sick Doll (Meyer-Helmund). 3. (a) Two Minuets of the year 1762, (b) Three Waltzes (Mozart). 4. Selection from "Hansel and Gretel" (Humperdinck). 5. Soprano Solos. 6. (a) Für Elise (Beethoven), (b) Two Lullabies (Schubert). 7. Kinderlieder March (Zieler). 5.30 p.m.—French Talk. 6.0 p.m.—Talk, "Chinese Culture." 6.30 p.m.—Talk, "Rugby Football." 7.0 p.m.—Talk on "Careers for Young People." 7.30 p.m.—Chamber Music. 1. String Quartet in F major, Op. 96 (Dvorák). 2. String Quartet in B flat major, Op. 18, No. 6 (Beethoven). 9.15 p.m.—News. 9.30 p.m.—Dancing Lesson and Dance Music. 11.30 p.m. (approx.)—Close Down.

BERNE (Switzerland)

Radio-Berne. WL. 411 m. (730 kc.); 1.5 kw. Transmits at intervals from 12.0 noon. 6.30 p.m.—Time and Weather. 6.35 p.m.—Talk, "Menus in the South." 7.0 p.m.—National Concert. 8.20 p.m.—The Kursaal Orchestra. News and Weather in the Interval. 9.30 p.m. (approx.)—Close Down.

BRATISLAVA (Czechoslovakia)

Radio Bratislava. WL. 300 m. (1,000 kc.); 0.5 kw. 3.0 p.m.—Agricultural Report. 4.30 p.m.—Popular Concert. 5.30 p.m.—Talks. 6.5 p.m.—Concert of Gramophone Music. 6.30 p.m.—Programme relayed from Prague.

BRESLAU (Germany)

Schlesische Furkstudie. WL. 322.6 m. (930 kc.); 4 kw. Relayed by Gleiwitz, on 250 m. (1,260 kc). Transmits at intervals from 10.15 a.m. 6.30 p.m.—Talk. 7.0 p.m.—With a Microphone through Breslau. 7.30 p.m.—Concert of Pastoral Music.

1. Pastoral Music from "The Christmas Oratorio" (Bach). 2. Soprano Songs: (a) Shepherd and Shepherdess (Graun), (b) An Thyrsis (Haydn), (c) Shepherd Song (Haydn). 3. "The Watteau Suite"—Shepherd and Shepherdess Melody (Zimmer). 4. Bastien and Bastienne—Arias (Mozart). 5. (a) Song, (b) Rusticarella (Cortopassi). 6. (a) Shepherd's Lament (Schubert), (b) Pastorella (Schubert), (c) The Beloved Shepherdess (Weber). 7. Selection from the Music to "Faust" (Lassen). 8. (a) Shepherd Melodies (Liszt), (b) Pastorale (Liszt). 9. Soprano Arias (Wolf and Marx). 10. (a) Flute Solo (Scott), (b) Dance (Petyrek), for Flute. 11. Morning—an Idyll (Kullack). News. 9.30 p.m.—Programme relayed from Voxhaus. 11.0 p.m. (approx.)—Close Down.

BRÜNN (Czechoslovakia)

Komarov. WL. 441 m. (680 kc.); 3 kw. Transmits at intervals from 11.15 a.m. 5.0 p.m.—Time and German Transmission. 5.25 p.m.—Talks. 6.0 p.m.—Shorthand Lesson. 6.5 p.m.—Talk and Recitations. 6.30 p.m.—Programme from Prague.

BRUSSELS (Belgium)

Radio-Belgique. WL. 508.5 m. (590 kc.); 1.5 kw. 5.0 p.m.—Children's Corner. 6.0 p.m.—Flemish Lesson. 7.45 p.m.—Le Radio Chronique. 8.15 p.m.—Orchestral Concert: 1. "A Night in Granada"—Overture (Kreutzer). 2. The Count of Luxembourg—Selection (Lehár). 3. Theatre Talk. 8.40 p.m.—Recital by a Boys' Choir: 1. Aria (Handel). 2. Chant de fête (Handel). 3. Solo, Oh, si les fleurs-avaient des yeux (Massenet). 4. Joie (Bach). 5. Tales of Hoffmann—Barcarolle (Offenbach). 9.0 p.m.—Topical Talk. 9.5 p.m.—Concert (contd.): 1. "Werther"—Selection (Massenet). 2. Nocturne (Gaubert). 3. Judex (Gounod). 9.30 p.m.—Literary Talk. 9.45 p.m.—Orchestral Concert (contd.): 1. Chaise à porteurs (Chaminade). 2. Ségoviano (Lacome). 3. The Wedding of the Rose (Jessel). 4. Waltz (Godart). 5. Divertissement champêtre for clarinet (Mawet). 6. Petite Suite (Coleridge Taylor). 10.15 p.m.—News. 10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)

Magyar Radio Ujsag. WL. 555.8 m. (570 kc.); 3 kw. Transmits at intervals from 8.30 a.m. 6.0 p.m.—Opera Relay from the Royal Hungarian Opera House. 9.0 p.m.—Time, News and Dance Music.

COLOGNE (Germany)

Westdeutscher Rundfunk. WL. 283 m. (1,060 kc.); 4 kw. Transmits at intervals from 9.30 a.m. 12.5 p.m.—Concert from the Works of Glinka, Balfe, Bizet, Bece, etc. 3.10 p.m.—Talk for Women. 3.35 p.m.—Topical Talk. 3.45 p.m.—Talk on "Russian Poetry." 4.15-4.45 p.m.—See Langenberg. 6.45 p.m.—Talk "The Soul of Animals." 7.15 p.m.—Hindemith Recital from the Literary Society Hall. 1. Concerto for Viola d'Amore and Chamber Orchestra. 2. Concerto for Pianoforte and Chamber Orchestra, Op. 36 No. 1. 3. Concerto for Viola and Chamber Orchestra, Op. 36, No. 4. 8.45 p.m.—"Das Pulverfass"—Farce (Kadelburg). Followed by News, Sports Notes, Concert and Dance Music. 11.0 p.m. (approx.)—Close Down.

COPENHAGEN (Denmark)

Copenhagen Radio. WL. 337 m. (890 kc.); 1 kw. Relayed by Kalundborg on 1,153.8 m. (260 kc). Transmits at intervals from 6.30 a.m. 6.0 p.m.—News, Exchange and Time. 6.20 p.m.—Talk. 6.50 p.m.—Talk, "The Danish Philharmonic Society's Third Concert." 7.0 p.m.—"Prince Igor"—Opera (Borodine). Relayed from the Oddfellows Hall. 9.0 p.m.—News. 9.15 p.m.—Relay of Foreign Stations. 11.0 p.m.—Chimes and Close Down.

CORK (Ireland)

Cork Broadcasting Station (6CK). WL. 400 m. (750 kc.); 1.5 kw. 2.30 p.m.—Weather, Stock Market Report and Gramophone Records. 6.15 p.m.—Programme from Dublin.

CRACOW (Poland)

Polskie Radio. WL. 566 m. (530 kc.); 1.5 kw. Transmits at intervals from 11.0 a.m. 6.5 p.m.—Agricultural Report. 6.15 p.m.—Variety Items. 6.30 p.m.—English Lesson. 7.0 p.m.—Carillon from Notre Dame. 9.5 p.m.—Programme relayed from Warsaw. 9.30 p.m.—Concert relayed from a Restaurant. 10.30 p.m. (approx.)—Close Down.

DANZIG

WL. 272.7 m. (1,100 kc.); 0.75 kw. 7.30 p.m.—Variety Concert. 1. Selection from "Le Postillon de Lonjumeau" (Adam). 2. Songs: (a) Radio Song, from "Lady X" (Edwards), (b) Die kleinen Teufelchen (Leonard), (c) Ein Schwipserl, from "Rund um die Liebe" (Oscar Strauss). 3. Die Post in Walde. 4. Songs: (a) The Old Song (Love), (b) In Omsk, in Tomsk, in Astrachan (Rosen). 5. Potpourri, from "The Postmeisterin" (Jessel). 6. Songs: (a) "Zur Liebe gehört auch ein bisschen Musik," from "Madame Revue" (Nelson), (b) Warum soll ich mich denn kränken? from "The Queen" (O. Strauss). 7. Violin Solo: Serenade in A major (Drdla). 8. Washington Post (Souza). 9. German Post March. 10. Duets: (a) Wenn Mädchen träumen, (b) Kind, du bist so anspruchsvoll, from "Olli-Polli" (Kollo). 11. Rheinländer Potpourri. 12. Songs: (a) Drinking Song (Mania), (b) Der Rolandbogen (Mania), (c) In vino veritas (Walter), (d) Am Rhein, beim Wein (Ries). 13. Old Comrades (Teike).

DUBLIN (Ireland)

Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc.); 1.5 kw. Transmits at intervals from 1.30 p.m. 6.15 p.m.—Children's Corner. 7.0 p.m.—Gramophone Records. 7.10 p.m.—News. 7.30 p.m.—French Lesson by Mlle. Giudicelli. 7.45 p.m.—History Talk by S. MacCathmhaoil. 8.0 p.m.—"From Old Operas," by the Station Orchestra. 8.20 p.m.—Miss Culwick's Choir. Relayed from the Abbey Lecture Hall. 9.0 p.m.—Recitations by Isabel Leslie. 9.15 p.m.—Manahan's Dance Band. 10.30 p.m.—News, Weather and Close Down.

FRANKFURT-am-MAIN (Germany)

Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc.); 4 kw. Relayed by Cassel, on 252.1 m. (1,190 kc). Transmits at intervals from 12.30 p.m. 3.30 p.m.—Concert from Works of Mussorgsky. 1. Turkish March. 2. Pianoforte Selections from "Exhibition Pictures". 3. Songs. 4. Selection from "Der Jahrmarkt von Sorotschintzi". 5. Dance of the Persian Girl, from "Howantschina". 6. Songs. 7. Selection from "Boris Godunov". 4.45 p.m.—Reading. 5.15 p.m.—Wireless Notes and other Announcements. 5.30 p.m.—Talk, "House and Garden," from Cassel. 5.45 p.m.—Talk, "The Stabilisation of the European Currency." 6.15 p.m.—Talk, "What is to Become of Our Children?" 6.45 p.m.—Programme arranged by the Frankfurter Zeitung. 7.15 p.m.—Programme from Cologne. 9.30 p.m.—Programme from Voxhaus. 11.30 p.m. (approx.)—Close Down.

HAMBURG (Germany)

Norag (ha, in Morse). WL. 396 m. (757 kc.); 4 kw. Relayed by Bremen on 272.7 m. (1,190 kc.); Hanover, 297 m. (1,009 kc.); and Kiel, 278 m. (1,076 kc.). Transmits at intervals from 5.55 a.m. 4.0 p.m. (Hamburg and Kiel)—Concert from Café Wallhof. 5.0 p.m.—Orchestral Music. 6.0 p.m.—Talk, "Religious Lyrics." 6.25 p.m.—Talk, "Spinal Curvature in Childhood." 6.55 p.m.—Weather. 7.0 p.m.—Talk, "Amateur Boxing." 7.15 p.m. (Hamburg and Kiel)—Kärntner Folk Programme, News,

9.30 p.m. (approx.)—Cabaret Concert. 10.25 p.m. (Hamburg, Bremen and Kiel)—Ice Report

HANOVER (Germany)

Norag. WL. 297 m. (1,009 kc.); 0.7 kw. 3.15 p.m.—Concert of Russian Humour: 1. Polacca (Tchaikovsky). 2. (a) Am Teetisch, (b) Der Käviar (Awertschenko). 3. Bachanal (Glazounov). 4. Two Recitations (Tchekov). 5. Cossack Dance (Moszkovsky). 4.0 p.m.—Concert from Café Fedden. 7.15 p.m.—Song Recital, by Bertha Stözenberg. 1. (a) Abendempfindung, (b) To Cloe, (c) The Violet (Mozart). 2. (a) Kein Klagelaut, (b) Am offenen Fenster, (c) Inmitten des Balles (Tchaikovsky). 3. (a) Du meines Herzens Kronelein, (b) Waldeinsamkeit, (c) Hat's gesagt, bleibt's nicht dabei (R. Strauss). 4. (a) Morgentau, (b) Elgenlied, (c) Selbstgeständnis (Wolf). 9.15 p.m.—Concert of Parodies. 1. Ha-Ra-Ki-Ri—Grottesque (Lindsay-Theimer). 2. (a) Selection from "Mit fremden Federn" (Neumann), (b) Selection from "Dichterrass" (Gumpenberg). 3. Intermezzo grotesque (Gröschel). 4. Die Table d'hôte in der Sommerfrische (Schmitz). 5. Der lustige kakadu (Lewin).

HILVERSUM (Holland)

Algemeene, Vereeniging Radio Omroep. WL. 1,069 m. (280.5 kc.); 5 kw. 11.40 a.m.—Police News. 12.10 p.m.—Trio Music. 1.40 p.m.—Programme for Hospitals. 2.40 p.m.—Talk for Women. 5.10 p.m.—Orchestral and Vocal Concert: 1. Nabucco Overture (Verdi). 2. Hamlet—Ballet Music (Thomas). 3. Selected Soprano Songs. 4. Waltz from "Romeo and Juliet" (Gounod). 5. "Manon Lescaut"—Selection (Puccini). 6. Selected Soprano Songs. 7. Scherzo (Schubert). Followed by Request Programme: 1. Tannhäuser—Chorale (Wagner). 2. Der Rosenkavalier—Waltz (Strauss). 3. Spring's awakening (Bach). 4. Dornröschen's Brautfahrt (Rhode). 5. Italian Royal March (Gabetti). 6.55 p.m.—Advanced English Lesson. 7.55 p.m.—Symphony Concert, from the Concert Hall, Amsterdam—Conductor, Willem Mengelberg. 10.10 p.m.—Weather and News. 10.40 p.m.—Dance Instruction.

HUIZEN (Holland)

WL. 349.9 m. (880 kc.); 4 kw. (until 5.40 p.m.). Transmits from 5.40 p.m. on 1,950 m. (154 kc.). 12.10 p.m.—Trio Concert. 5.40 p.m.—Education Talk. 6.40 p.m.—Book-keeping Lesson. 7.10 p.m.—Education Talk. 7.40 p.m.—Vocal and Instrumental Concert and Talk.

KATTOWITZ (Poland)

Polskie-Radio. WL. 422 m. (710 kc.); 10 kw. Transmits at intervals from 11.30 a.m. 6.35 p.m.—Talk, "Sketches of Indian Life." 7.0 p.m.—Political Talk. 7.30 p.m.—Concert. 9.0 p.m.—Time and News. 9.30 p.m.—Concert from the Café Astoria.

KÖNIGSBERG (Germany)

Ostmarken Rundfunk. WL. 330.3 m. (908 kc.); 1 kw. Programme relayed by Danzig, on 272.7 m. (1,100 kc). Transmits at intervals from 10.0 p.m. 4.0 p.m.—Soloist Concert. 5.30 p.m.—Talk, "Modern Philosophy." 6.0 p.m.—Talk, "The Symphony Concert to be broadcast on Friday, March 30th." 6.30 p.m.—English Lesson. 7.10 p.m.—Dramatic Programme, followed by News and Weather, and Dance Music. 11.0 p.m. (approx.)—Close Down.

KOVNO (Lithuania)

Radio Kaunas. WL. 2,000 m. (150 kc.); 15 kw. Transmits from 4.0 p.m. 5.30 p.m.—Medical Talk. 6.0 p.m.—Time, Weather and News. 6.30 p.m.—Orchestral Concert.

LANGENBERG (Germany)

Westdeutscher Rundfunk. WL. 470 m. (638 kc.); 25 kw. Programme also for Aix-la-Chapelle, 401 m. (748 kc.); Cologne, 283 m. (1,060 kc.); and Münster, 241.9 m. (1,240 kc.).

Transmits at intervals from 9.30 a.m. 12.5—5.0 p.m.—Programme from Cologne.

LAUSANN (hd)

Société Romande de Radiophonie (HB2). WL. 680 m. (441 kc.); 0.6 kw. Transmits at intervals from 6.45 a.m. 7.0 p.m.—Weather. 7.20 p.m.—Orchestral Concert: 1. "L'Impresario"—Overture (Mozart). 2. Mosaïque de Gounod (Tavan). 3. Milenka Ballet (Block): (a) Kermesse flamande, (b) Serenade. 4. Valse triste (Sibelius). 5. Sicilian Vespers—Overture (Verdi). 7.50 p.m.—Concert by the Lausanne Vocal Septet: 1. O Vieni (Lahale). 2. La Villanelle (Donati). 3. Le vieux caporal (Béranger). 4. L'adieu du soldat (Wengert). 5. Mon Jorat (Moudon).

LEIPZIG (Germany)

Mitteldeutscher Rundfunk. WL. 366.3 m. (819 kc.); 4 kw. Relayed by Dresden, on 275.2 m. (1,090 kc). Transmits at intervals from 9.0 a.m. 3.30 p.m.—Concert. 1. "Tancred"—Overture (Rossini). 2. Pesterwäzler (Lanner). 3. Song from "La Tosca" (Puccini). 4. A Feast in Japan (Mouton). 5. Caravan in the Desert (Niernann). 6. Autumn Serenade (Beccce). 7. Second Hungarian Rhapsody (Liszt). 5.5 p.m.—Talks. 5.30 p.m.—Programme from Königswusterhausen. 6.0 p.m.—Industry Talk. 6.30 p.m.—Talk, "The Feeding of Plants." 7.0 p.m.—Weather and Time. 7.15 p.m.—Dialect Programme. 8.15 p.m.—German Reading of "Don Quichotte." 9.15 p.m.—Cabaret Concert. 9.30 p.m.—Silent Night.

LILLE (France)

P.T.T. WL. 285.8 m. (1,050 kc.); 0.5 kw. Transmits at intervals from 12.30 p.m. 7.10 p.m.—Gardening Talk. 7.40 p.m.—Concert. 8.0 p.m.—Concert. 1. La Source (Delibes). 2. Orchestral Selection (Kálmán). 3. Flute Solo, from "Les Erynnies" (Massenet). 4. Rigaudon, from "Dardanus" (Rameau). 5. "Tales of Hoffmann" (Offenbach). 6. Greek March (Ganne). News.

MADRID (Spain)

Union Radio (EAJ7). WL. 375 m. (800 kc.); 1.5 kw. Transmits at intervals from 11.45 a.m. 7.0 p.m.—Orchestral Selections. 1. La mazorca roja—Selection (Gorrono). 2. A Masked Ball—Selection (Verdi). Talk in the Interval: "Greek Art before the Time of Phidias." 8.0 p.m.—Dance Music, relayed from the Hotel Ritz. 9.30 p.m.—French Lesson. 10.0 p.m.—Programme relayed by San Sebastian (EAJ8), 335 m. (805 kc). Time, and Exchange Quotations. 10.10 p.m.—Orchestral Concert. 1. Orpheus—Overture (Glück). 2. Concerto No. 1 (Bach). Prelude (Bautista). 3. "La Serva Padrona"—One Act Opera (Pergolesi). In the Interval: Talk, "Corners of the Guadarrama District." 12.20 a.m. (Friday)—News. 12.30 a.m. (approx.)—Close Down.

MILAN (Italy)

Unione Radiofonica Italiana (IMI). WL. 526.3 m. (570 kc.); 7 kw. Transmits at intervals from 11.15 a.m. 7.0 p.m.—Scientific Talk. 7.50 p.m.—Time. 8.0 p.m.—"Carmen"—Opera (Bizet). 9.55 p.m.—News.

MUNICH (Germany)

Deutsche Stunde in Bayern. WL. 535.7 m. (560 kc.); 4 kw. Relayed by Nürnberg on 303 m. (990 kc), and Augsburg, 566 m. 530 kc. Transmits at intervals from 11.45 a.m.

Programmes for Thursday.—(Cont.)

6.5 p.m.—French Poetry Programme from Nürnberg.
6.35 p.m.—Talk.
7.5 p.m.—"The Spanish Nightingale"—Operetta (Fall). News.

NAPLES (Italy)
Unione Radiofonica Italiana (INA). WL. 333.3 m. (900 kc.); 1.5 kw. Transmits at intervals from 12 noon.
7.30 p.m.—Wireless Notes.
7.40 p.m.—News.
7.48 p.m.—Harbour Notes.
7.50 p.m.—Concert of Light Music.
1. Madame de Thebes (Lombardo).
2. The Murrur of the Waves (Von Blon).
3. Fiocca la neve (Thiele).
4. Ballo amor (Marengo).
8.30 p.m.—Relay of an Operetta from the Bellini Theatre.
9.55 p.m.—Calendar and Programme Announcements.
10.0 p.m. (approx.)—Close Down.

OSLO (Norway)
Kringkastingsselskapet. WL. 461.5 m. (650 kc.) 1.5 kw. Programme relayed by Hamar on 555.6 m. (540 kc.); Porsgrund on 500 m. (600 kc.); Fredrikstad 434.8 m. (690 kc.); Notodden, 411 m. (730 kc.); and Rjukan, 448 m. (670 kc.). Transmits at intervals from 10.10 a.m.
5.55 p.m.—Shorthand Lesson.
6.15 p.m.—News.
7.0 p.m.—Time.
7.2 p.m.—Concert from Rjukan.
7.30 p.m.—Recitations.
8.0 p.m.—Cabaret Concert.
9.0 p.m.—News and Weather.
9.15 p.m.—Topical Talk.
9.30 p.m. (approx.)—Close Down.

PARIS (France)
Ecole Supérieure (FPT). WL. 458 m. (655 kc.); 0.5 kw. Transmits at intervals from 8.0 a.m.
6.0 p.m.—Radio-Journal de France.
8.0 p.m.—Esperanto Lesson.
8.30 p.m.—Talks.
9.0 p.m.—Concert, followed by News.

PARIS (France)
Eiffel Tower (FL). WL. 2,650 m. (113 kc.); 5 kw.
7.56 a.m.—Time Signal (on 32 m. (9,375 kc)).
9.26 a.m.—Time Signal.
5.45 p.m.—Le Journal Parlé. Talks on "Feminism," "Foreign Poli-

tics," "Books to Read" and "Wireless Novelties."
7.10 p.m.—Weather.
7.30 p.m.—Concert from the Works of Paul Vidal. At 7.56 p.m. Time Signal, on 32 m. (9,375 kc).
8.30 p.m.—Educational Programme. Talks on "Modern Art," "Musical Technique," "The Art of Singing," etc.
10.26 p.m.—Time Signal.

PARIS (France)
Petit Parisien. WL. 340.9 m. (880 kc.); 0.5 kw.
9.0 p.m.—Concert.
1. "Carnaval romain"—Overture (Berlioz).
2. Caprice (Campagnoli).
3. Sonata (Hummel).
4. Harold in Italy (Berlioz).
5. Trio sérénade (Beethoven).
6. Réverie from the Algerian Suite (Saint-Saëns).
7. The Third Quartet (Brahms).
8. Le Reposoir des amants (Grovelez).
9. Concerto (Handel).
10. Réverie (Leborneu).
11. Romance (Bruch).
12. Morceau de Concert (Hubay).

PARIS (France)
Radio-Paris (CFR). WL. 1,750 m. (171 kc.); 3 kw.
Transmits at intervals from 7.30 p.m.
12.30 p.m.—Concert.
1. Les Dragons de l'Imperatrice (Messager).
2. Romance (d'Ambrosio).
3. Sérénade berceuse (Luciani).
4. Castilla (Albeniz).
5. Symphonie la Surplice (Haydn).
6. En Lozère (Debussy).
7. La Demeiselle cluë (Murcia (Turina). News.
1.50 p.m.—Market Prices.
3.30 p.m.—Exchange Quotations.
3.45 p.m.—Children's Concert.
4.45 p.m.—Exchange Quotations.
7.0 p.m.—Agricultural Report.
8.0 p.m.—Exchange and Esperanto Talk.
8.30 p.m.—Concert.
1. "Quatre vingt-treize" (after the Novel by Victor Hugo).
2. Quintet Selections: (a) Concerts royaux (Couperin), (b) Serenade (Roussel), (c) Concert à cinq (Jongen).

PITTSBURGH (U.S.A.)
Westinghouse Electric (KDKA). WL. 315.6 m. (950 kc.); 50 kw. Transmits at intervals from 2.45 p.m.
11.0 p.m.—University of Pittsburgh Address.

11.10 p.m.—KDKA Theatrical Calendar.
11.15 p.m.—Concert from the William Penn Hotel.
12 midnight.—Time, and the "Automatic Agitators."
12.30 a.m. (Friday)—Concert.
The following programme from WJZ, New York.
1.0 a.m.—"Retold Tales."
1.30 a.m.—"Ampico Hour."
2.0 a.m.—"Maxwell Hour."
3.0 a.m.—"The Continentals."
4.0 a.m.—Time and Weather.
4.10 a.m. (approx.)—Close Down.

POSEN (Poland)
Polskie-Radio. WL. 344 m. (872 kc.); 1.5 kw.
Transmits at intervals from 11.5 a.m.
6.10 p.m.—English Lesson.
6.35 p.m.—Agricultural Talk.
7.0 p.m.—Finance Talk.
7.30 p.m.—Request Programme.
9.0 p.m.—Time and Variety.
9.20 p.m.—News, Weather and Close Down.

PRAGUE (Czechoslovakia)
Strasnice. WL. 348.9 m. (860 kc.); 5 kw.
Transmits at intervals from 10.0 a.m.
5.15 p.m.—Agricultural Report.
5.35 p.m.—Music Talk.
5.45 p.m.—French Lesson.
6.30 p.m.—Concert.
1. Ophale and Proscris (Grétry).
2. Les petits riens (Mozart).
3. Rosamunde (Schubert).
4. Invitation to the Dance (Weber).
5. Raymonde (Thomas).
6. Two Waltzes (Dvorák).
7. Two Hungarian Waltzes (Brahms).
8. The Blue Danube (Strauss).
9.0 p.m.—Time and News.

ROME (Italy)
Unione Radiofonica Italiana (IRO). WL. 448.4 m. (669 kc.); 3 kw. Transmits at intervals from 11.30 a.m.
7.0 p.m.—French Lesson.
7.30 p.m.—Time, News, Exchange and Weather.
7.40 p.m.—"Il Paese Dei Campanelli" Opera (Ranzato). In the interval, Topical Review.
9.55 p.m.—News.
10.0 p.m. (approx.)—Close Down.

SCHENECTADY (U.S.A.)
General Electric Company (WGY). WL. 379.5 m. (790 kc.); 50 kw. Programme relayed by 2XAD on

21.96 m. (13,661 kc.) from 8.0—9.0 p.m. and by 2XAF on 31.4 m. (9,554 kc.) from 11.0 p.m.
Transmits at intervals from 11.45 a.m.
11.0 p.m.—Exchange and News.
11.30 p.m.—Dinner Music from the Hotel Kenmore, Albany.
12.30 a.m. (Friday)—Talk, "The Voters who will not Vote."
12.45 a.m.—Studio Music.
The following programme from New York.
1.0 a.m.—Dodge Programme.
1.30 a.m.—Hoover Sentinels.
2.0 a.m.—Time, and Clicquot Club Eskimos.
3.0 a.m.—"The Carborundum Band," from Niagara Falls.
4.0 a.m.—Dance Music from New York.
4.30 a.m.—Organ Recital from the Strand Theatre, Albany.
5.30 a.m. (approx.)—Close Down.

STOCKHOLM (Sweden)
Radioförest (SASA). WL. 453.8 m. (661 kc.); 1.5 kw. Relayed by Motala, on 1,380 m. (217 kc.); Göteborg, 416.7 m. (720 kc.); Malmo, 260.9 m. (1,150 kc.); and Sundsvall, 545.6 m. (550 kc).
Transmits at intervals from 11.35 a.m.
4.30 p.m.—Studio Service.
5.0 p.m.—Children's Corner.
5.30 p.m.—Light Music.
6.25 p.m.—Talk, "The Social System of the Middle Ages."
6.45 p.m.—Cabaret Concert.
7.0 p.m.—Chamber Music.
7.25 p.m.—Recitation.
7.45 p.m.—Talk, "The Indians of Panama."
8.15 p.m.—News and Weather.
8.40 p.m.—French Recital.
9.0 p.m. (approx.)—Close Down.

STUTTGART (Germany)
Süddeutscher Rundfunk. WL. 380.7 m. (788 kc.); 4 kw. Transmits at intervals from 11.30 a.m.
3.15 p.m.—Concert.
1. Sonnenaar-March (Blankenburg).
2. Wiener Bonbons—Waltz (Jos. Strauss).
3. Largo (Handel).
4. "Die Königin für einen Tag" (Adam).
5. Selection from "La Dame Blanche" (Boieldieu).
6. Two Impromptus (Schubert).
7. Braun oder blond—Waltz (Waldteufel).
8. The Flag of Friendship—March (Blon).
5.0 p.m.—Time and Weather
5.15 p.m.—Talk, "The English

National Character," from Freiburg, 575.8 m. (521 kc).
5.45 p.m.—Talk, "A New Light on the Problem of Genius."
6.15 p.m.—Chess Lesson.
6.45 p.m.—Time and Weather, followed by Talk on "Learn Foreign Languages."
7.15 p.m.—Symphony Concert: from Works of Mozart. 1. Moorish Funeral March. 2. Concerto for flute and harp. 3. Jupiter Symphony.
8.15 p.m.—Programme of German Poetry and Prose of the last hundred years. News.
9.30 p.m.—Programme from Voxhaus. 10.0 p.m.—Dance Music.
11.30 p.m. (approx.)—Close Down.

TOULOUSE (France)
Radiophonie du Midi. WL. 391 m. (767 kc.); 3 kw.
Transmits at intervals from 10.15 a.m.
12.45 p.m.—Orchestral Concert.
8.30 p.m.—Opera Relay from the Capitol Theatre.

VIENNA (Austria)
Radio-Wien. WL. 576 and 517.2 m. (520 and 580 kc.); 0.75 and 5 kw. Relayed by Graz on 357.1 m. (840 kc.); Innsbruck, 294.1 m. (1,020 kc.); and Klagenfurt, 272.7 m. (1,200 kc).
Transmits at intervals from 10.0 a.m.
5.45 p.m.—Esperanto Lesson.
6.0 p.m.—"Das Wunder der Heliane"—Opera (Korngold), relayed from the Opera House.

WARSAW (Poland)
Polskie-Radio. WL. 1,111.1 m. (270 kc.); 10 kw.
Transmits at intervals from 11.0 a.m.
6.5 p.m.—Agricultural Report.
6.15 p.m.—Variety.
6.35 p.m.—Agricultural Talk.
7.0 p.m.—Programme from Wilno.
9.0 p.m.—Time and News.
9.30 p.m.—Dance Music.
10.30 p.m. (approx.)—Close Down.

WILNO (Poland)
Polskie-Radio. WL. 435 m. (689 kc.); 0.5 kw.
Transmits at intervals from 3.25 p.m.
6.0 p.m.—News.
6.25 p.m.—Time and Variety.
6.35 p.m.—Natural Science Talk.
7.30 p.m.—Chamber Music.
9.0 p.m.—News.
9.30 p.m.—Dance Music.
10.30 p.m. (approx.)—Close Down.

Everybody's complete Valve Guide

You can only get the best results from your set if the right valve is in the right place. A veritable valve encyclopædia, the April "Wireless Magazine" contains information invaluable to every owner of a wireless receiver. Some of the contents:—

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PROGRAMMES FOR FRIDAY (March 30)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME.

BARCELONA (Spain)
Radio-Barcelona (EAJT). WL. 344.8 m. (870 kc); 1.5 kw.
Transmits at intervals from 11.0 a.m. to 1.0 p.m.—Exchange.
6.10 p.m.—Fashion Talk.
6.30 p.m.—Quintet Selections.
8.30 p.m.—Music Lesson.
9.0 p.m.—Chimes and Weather.
9.5 p.m.—Exchange and News.
9.10 p.m.—Quintet Selections. Le Chant du Bivouac—March (Ketterer). 2. Selection from "Lakmé" (Delibes). 3. Pavane (Albeniz). 4. Retorn (Marraco). 5. Lune de miel—Waltz (Waldteufel).
9.45 p.m.—Talk, "Charity."
10.0 p.m.—Exchange Closing Prices.
10.5 p.m.—Lenten Concert. 1. Ave verum (Mozart). 2. Stabat Mater (Pergolesi). 3. A la Verge dels Dolors (Millet). 4. Caligaverunt oculi mei (Victoria).
11.0 p.m. (approx.)—Close Down.

BERGEN (Norway)
Kringkastingselskap. WL. 369.9 m. (811 kc); 1.5 kw.
Transmits at intervals from 10.15 a.m. to 1.0 p.m.—Orchestral Music. 1. "Phèdre"—Overture (Massenet). 2. "Henry Eighth" Suite (Saint Saëns). 3. Norwegian Suite (Kjerulf). 4. Fanitullen (Olsen).
8.0 p.m.—Pianoforte Recital from Works of Chopin.
8.30 p.m.—Talk on "Easter."
9.0 p.m.—Weather, News and Time.
9.15 p.m.—English Lesson, by Mr. F. L. M. Somerville.
9.30 p.m. (approx.)—Close Down.

BERLIN (Germany)
Königswusterhausen. WL. 1,250 m. (240 kc); 35 kw.
Transmits at intervals from 7.45 a.m. to 1.0 p.m.—Programme from Leipzig.
5.0 p.m.—Reading by Arthur Silbergleit.
5.30 p.m.—English Lesson.
5.55 p.m.—Legal Talk.
6.20 p.m.—Talk for Physicians.
7.15 p.m.—Programme from Leipzig.
9.0 p.m.—Programme from Voxhaus.

BERLIN (Germany)
Voxhaus. WL. 484.6 m. (619 kc). 4 kw.
Transmits at intervals from 9.0 a.m. to 1.0 p.m.—Talk, "Alba and Egmont."
7.0 p.m.—Schubert Recital from the Academy of Singing. 1. Choir: (a) Psalm 23 with Organ Accompaniment, (b) Grab und Mond, (c) Nur wer die Sehnsucht kennt. 2. Address. 3. Tenor Solos: (a) Ganymed, (b) Liebesbotschaft, (c) Der Musensohn. 4. Choir: (a) Der Gondelfahrer, (b) Nachtelle, (c) Nachtgesang im Walde, (d) Mondenschein, (e) Ständchen. 5. Contralto Solos: (a) Dem Unendlichen, (b) Totengräbers Heimweh, (c) Nacht und Träume. 6. Choir: (a) Liebe, (b) Der Entfernnten, (c) Die Nacht, (d) Die Allmacht.
9.15 p.m.—News.
9.30 p.m.—Concert. 1. Orchestra: (a) Mari! Mari! (Capua), (b) Santa Lucia Luntana (Mario). 2. Tenor Solos—Neapolitan Songs. 3. Orchestra: (a) Rusticanelle (Cortopassi), (b) Catari, Catari (Cardillo). 4. Tenor Solos. 5. Orchestra: (a) Marechiale (Tosti), (b) Italian Songs (De Michel), (c) Souvenir of Sorrento (de Curtis). 6. Neapolitan Song and Tango for Tenor. 7. Orchestra: (a) Neapolitan Serenade, (b) Sicilian Serenade (Becca), (c) Funiculi Funicula.
10.30 p.m. (approx.)—Close Down.

BERNE (Switzerland)
Radio-Berne. WL. 411 m. (730 kc); 1.5 kw.
6.30 p.m.—Time and Weather.
6.35 p.m.—Talk on Music.
7.0 p.m.—Concert from Geneva or the Berne National Theatre.
8.20 p.m.—The Kursaal Orchestra. News and Weather in the interval.
9.30 p.m. (approx.)—Close Down.

BRATISLAVA (Czechoslovakia)
Radio Bratislava. WL. 300 m. (1,000 kc); 0.5 kw.
5.0 p.m.—Concert. 1. Quartet in F major, Op. 96 (Dvorák). 2. Quartet in E flat major, Op. 125, No. 1 (Schubert).
6.0 p.m.—Talks.
6.45 p.m.—Gramophone Music.
7.0 p.m.—Programme relayed from Prague.

BRESLAU (Germany)
Schlesische Funkstunde. WL. 322.6 m. (930 kc); 4 kw. Relayed by Gleiwitz, on 250 m. (1,200 kc).
Transmits at intervals from 10.15 a.m. to 1.0 p.m.—Readings from his own Works by Jacob Schaffner.
7.10 p.m.—"Hanni geht tanzen"—Operetta (Bodansky). News and Talk in Esperanto.

BRÜNN (Czechoslovakia)
Komarov. WL. 441 m. (680 kc); 3 kw.
Transmits at intervals from 11.15 a.m. to 1.0 p.m.—Time, and German Transmission.
5.25 p.m.—Talks.
6.0 p.m.—A Comedy (Ogrinovic).
6.40 p.m.—English Lesson.
7.0 p.m.—"La Belle Galathée"—Opera (Suppé).
8.0 p.m.—Band Concert.
9.0 p.m.—Programme from Prague.

BRUSSELS (Belgium)
Radio Belgique. WL. 508.5 m. (590 kc); 1.5 kw.
5.0 p.m.—Trio Concert.
5.25 p.m.—Le Radio Chronique.
8.15 p.m.—Orchestral Concert. 1. New York (Padilla). 2. My sweet Yvette (Davis). 3. Les syrénes (Waldteufel). 4. A lane in Spain (Lewis). 5. Song. 6. La Corte de Faraon (Leo-Salabert). 7. Variations for Horn (Dupuis). 8. Ca c'est une petite femme (Mevensen). 9. Just another day (Tobias-Lange). 10. Cocorico (Ganne). 11. Song. 12. Poème d'amour (Liszt). 13. Funny Charleston (Stall). In the Interval, Topical Talk.
9.30 p.m.—Talk in Flemish.
9.45 p.m. (approx.)—Orchestral Selections. 1. "Hérodiade"—Ballet (Massenet). 2. Chant de soir and Improvisations for Pianoforte (Van Dume). 3. Bouton d'or (Pierné).
10.15 p.m.—News.
10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)
Magyar Radio Ujsag. WL. 555.8 m. (570 kc); 3 kw.
Transmits at intervals from 8.30 a.m. to 1.0 p.m.—Cello Recital, with Vocal Interludes.
9.0 p.m.—Time, News and Tzigane Music.

COLOGNE (Germany)
Westdeutscher Rundfunk. WL. 283 m. (1,060 kc); 4 kw.
Transmits at intervals from 9.30 a.m. to 1.0 p.m.—Orchestral Concert. Works of Friedemann, Fall, Delibes, Boccherini, &c.
2.45 p.m.—Talk for Women.
3.10 p.m.—Children's Songs.
3.50 p.m.—Recitations.
4.30 p.m.—Topical Talk.
4.40 p.m.—Legal Talk.
5.0 p.m.—Concert. 1. "The Bronze Horse"—Overture (Auber). 2. Waltz (Strauss). 3. Melodies from "The Tales of Hoffmann" (Offenbach). 4. Silbermond Intermezzo (Darewsky). 5. Liebesbräume (Liszt). 6. Liebesaugenblicke (Eysoldt). 7. March (Lehnhardt).
6.15 p.m.—English Lesson.
6.45 p.m.—Commerce Talk.
7.15 p.m.—Rheinland Programme. 1. Orchestra: Siegfried's Rhein Journey from "The Twilight of the Gods" (Wagner). 2. Recitation. 3. Choir, Bei stiller Nacht (Spebrahms). 4. Recitation. 5. Orchestral prelude to "Loreley" (Bruch). 6. Recitations. 7. Orchestral Selections from "Rheingold." Followed by "Schötzelkennung"—Folk Play (Fuchs), News, Sports Notes, Concert and Dance Music.
11.0 p.m. (approx.)—Close Down.

COPENHAGEN (Denmark)
Copenhagen Radio. WL. 337 m. (890 kc); 1 kw. Relayed by Kalundborg on 1,153.8 m. (260 kc).
Transmits at intervals from 6.30 a.m. to 1.0 p.m.—News, Exchange and Time.
6.16 p.m.—Talk, "Marriage and Youth," relayed from the University Soloists, Horn and Orchestra.
8.15 p.m.—News.
8.30 p.m.—The Third Class Play.
9.0 p.m.—Chamber Music. 1. String Quartet in A minor, Op. 29 (Schubert). 2. String Quartet in D major (Mozart).
10.0 p.m. (approx.)—Close Down.

CORK (Ireland)
Cork Broadcasting Station (6CK). WL. 400 m. (750 kc); 1.5 kw.
2.30 p.m.—Weather, Stock Market Report and Gramophone Records.
7.20 p.m.—Programme from Dublin.

CRACOW (Poland)
Polskie Radio. WL. 566 m. (530 kc). 1.5 kw.
Transmits at intervals from 11.0 a.m. to 1.0 p.m.—Review of Wireless.
7.0 p.m.—Carillon from the Church of Notre Dame.
7.15 p.m.—Programme relayed from Warsaw.

DUBLIN (Ireland)
Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc); 1.5 kw.
Transmits at intervals from 1.30 p.m. to 1.15 p.m.—Children's Corner.
7.0 p.m.—Gramophone Records.
7.20 p.m.—News.
7.30 p.m.—Gardening Talk by G. O. Sherrard.
7.45 p.m.—Italian Lesson by Italia de Starkie.
8.0 p.m.—Welsh Concert by W. S. Gwynn Williams and Selected Artists.
9.0 p.m.—Organ Recital. Relayed from Augustinian Church, Dublin, by T. W. Magahy.
9.30 p.m.—Irish and Anglo-Irish Offerings, by Kathleen Roddy (Soprano).
9.45 p.m.—"A Sunshine Shower," by Fay Sargent and Jimmy O'Dea.
10.15 p.m.—The Station Orchestra.
10.30 p.m.—News, Weather and Close Down.

FRANKFURT-am-MAIN (Germany)
Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc); 4 kw. Relayed by Cassel, on 252.1 m. (1,190 kc).
Transmits at intervals from 12.0 noon to 1.0 p.m.—Reading.
5.15 p.m.—Wireless Notes and other Announcements.
5.30 p.m.—Talk, "From Apprentice to Master."
6.0 p.m.—Talk, "How to Read a Weather Chart."
6.30 p.m.—Science and Technology.
6.50 p.m.—Film Notes.
7.0 p.m.—Talk, "Georg Kaiser and his Drama."
7.30 p.m.—"From Morning until Midnight"—Play (Georg Kaiser), followed by A-Capella Choir Concert, from Cassel. 1. German Vespers (Haas). 2. Selection from "Night and Morning" (Wetz). 3. (a) Amor in Nachen; (b) An hellen Tagen (Gastoldi); (c) Pastorale (Reinecke); (d) Bitte an St. Raphael (Ochs); (e) Das Lieben bringt gross Freud (Ochs); (f) Mir ist so traurig (Ochs).

HAMBURG (Germany)
Norag (ha, in Morse). WL. 306 m. (757 kc); 4 kw. Relayed by Bremen on 272.7 m. (1,190 kc); Hanover, 297 m. (1,009 kc); and Kiel, 278 m. (1,076).
Transmits at intervals from 5.55 a.m. to 1.0 p.m.—(Hamburg only)—Talk, "Hamburg Administrative Reform."
5.0 p.m.—Orchestral Music.
5.30 p.m.—Advanced English Lesson, from Königswusterhausen.
6.0 p.m.—Agricultural Talk.
6.20 p.m.—Weather.
6.25 p.m.—"The Flying Dutchman"—Opera (Wagner), from the Municipal Theatre.
9.0 p.m. (approx.)—Topical Talk and News.
9.30 p.m. (approx.)—(Hamburg and Kiel)—Relay of Foreign Stations.
10.25 p.m.—Ice Report.
10.30 p.m.—(Hamburg, Bremen and Kiel)—Dance Music.
11.30 p.m. (approx.)—Close Down.

HILVERSUM (Holland)
Algemeene Vereeniging Radio Omroep. WL. 1,069 m. (280.5 kc); 5 kw.
11.40 a.m.—Police News.
12.10 p.m.—Trio Concert.
5.40 p.m.—Time.
5.42 p.m.—Concert.
6.55 p.m.—Talk.
7.25 p.m.—Police News.
7.45 p.m.—Talk.
8.15 p.m.—Song Recital, and Pianoforte Solos: 1. Second Rhapsody (Brahms) for Pianoforte. 2. Songs (Brahms). 3. Arabesque on "The Blue Danube" (Strauss)—Schütz-Eyler. 4. Songs, with Pianoforte Accompaniment.
8.55 p.m.—Orchestral Concert: 1. The Ruins of Athens—Turkish March (Beethoven). 2. "Egmont"—Overture (Beethoven). 3. "Olav Trygvason"—Prayer and Dance (Grieg). 4. "Reigen" (Forster-Larrinaga). 5. "Much Ado About Nothing"—Suite (Korngold). 6. "Phèdre"—Overture (Massenet).
9.43 p.m.—Weather and News.
9.55 p.m.—Concert (contd.). Opera and Dance Music: 1. Egyptian

March (J. Strauss). 2. Waltz (Lincke). 3. "The Circus Princess"—Selections (Kalman). 4. Persian Rosebud—Foxtrot (Nicholls). 5. The Song is Ended (Berlin). 6. Spass muss sein (Morena).

HUIZEN (Holland)
WL. 340.9 m. (880 kc); 4 kw. (Until 5.40 p.m.) Transmits from 5.40 p.m. on 1,050 m. (154 kc).
12.10 p.m.—Trio Concert.
2.40 p.m.—Programme for Women.
3.40 p.m.—Gramophone Records.
4.40 p.m.—Organ Recital.
5.40 p.m.—Talk.
6.25 p.m.—Talk, "Sociology."

KATTOWITZ (Poland)
Polskie Radio. WL. 422 m. (710 kc); 10 kw.
Transmits at intervals from 3.20 p.m. to 1.0 p.m.—Music Talk.
7.15 p.m.—Programme from Warsaw.
9.0 p.m.—Time and News.
9.30 p.m.—French Talk.

KÖNIGSBERG (Germany)
Ostmarken Rundfunk. WL. 333.3 m. (908 kc); 1 kw. Programme relayed by Danzig, on 272.7 m. (1,190 kc).
Transmits at intervals from 10.0 p.m. to 1.0 p.m.—Stories of the Lower Elbe.
5.30 p.m.—Talk, "The Care of Health" (Königsberg only).
5.30 p.m.—"Humoresques" (Danzig only).
6.0 p.m.—Talk, "Philosophy of the Day."
6.30 p.m.—Spanish Lesson.
6.55 p.m.—Weather.
7.0 p.m.—Symphony Concert, followed by Weather and News.
9.30 p.m.—Programme from Berlin.

KOVNO (Lithuania)
Radio Kaunas. WL. 2,000 m. (150 kc); 15 kw.
Transmits from 4.30 p.m. to 1.0 p.m.—Talk in English: "Lithuanian Folklore."
6.0 p.m.—Time, Weather and News.
6.30 p.m.—Variety Concert.

LANGENBERG (Germany)
Westdeutscher Rundfunk. WL. 470 m. (640 kc); 25 kw. Programme also for Aix-la-Chapelle, 401 m. (748 kc); Cologne, 283 m. (1,060 kc); and Münster, 241.9 m. (1,240 kc).
Transmits at intervals from 9.30 a.m. to 1.0 p.m.—Programme from Cologne.

LAUSANNE (Switzerland)
Société Romande de Radiophonie (HR2). WL. 680 m. (441 kc); 0.6 kw.
Transmits at intervals from 6.45 a.m. to 1.0 p.m.—Weather.
7.2 p.m.—French Literature of the 16th Century.
7.30 p.m.—Programmes from Geneva and Berne.
8.50 p.m.—News.
9.0 p.m. (approx.)—Close Down.

LEIPZIG (Germany)
Mitteldeutscher Rundfunk. WL. 366.3 m. (819 kc); 4 kw. Relayed by Dresden, on 275.2 m. (1,090 kc).
Transmits at intervals from 9.0 a.m. to 1.0 p.m.—Concert. 1. "Der Waldmeister"—Overture (Strauss). 2. Melodies, from "Hoheit tanz Walzer" (Lincke). 3. "Lysistrata"—Overture (Lincke). 4. Mimoso Valse from "The Geisha" (Jones). 5. Melodies from "Polenblut" (Nedbal). 6. Waltz from "Madame Pompadour" (Fall). 7. "Der dumme August" (Gfaller).
5.5 p.m.—Review of Books.
5.30 p.m.—Programme from Königswusterhausen.
6.0 p.m.—Talk, "The Painter van Gogh."
6.30 p.m.—Talk, "German Music."
7.0 p.m.—Weather and Time.
7.15 p.m.—Concert. 1. German Dances (Otto Wittenbecher). 2. Suite: (a) Valse, (b) Gavotte, (c) Valse, (d) Rheinland Dance, (e) Minuet, (f) Valse, (g) March (Singer).
8.15 p.m.—Symphony Concert. 1. Nocturne for Orchestra, Op. 13 (Tropp). 2. Rhapsody on Ukrainian Themes for Pianoforte and Orchestra (Liapounow). 3. Serenade for Small Orchestra (Sckles).
9.0 p.m.—News.
9.15 p.m.—Dance Music.
11.0 p.m. (approx.)—Close Down.

MADRID (Spain)
Union Radio (EAJ7). WL. 375 m. (800 kc); 1.5 kw.
Transmits at intervals from 11.45 a.m. to 1.0 p.m.—Concert of Chamber Music.

1. Quartet in G minor, Op. 27 (Grieg). 2. Mezzo-soprano Songs: (a) Largo from "Xerxes" (Handel), (b) Je l'ai vu (Schumann), (c) O toi petite bague (Schumann). 3. Trio, Op. 63 (Weber). 4. Oberon—Selections (Weber).
9.30 p.m.—English Lesson.
10.0 p.m.—Time, and Exchange Quotations.

10.10 p.m.—Concert, relayed from the "Hotel Nacional." 1. Agua, azucarillos y aguardiente (Chueca). 3. The Wedding of Luis Alonso (Giménez). 4. Czardas (Monti). 5. Benamor—Aria (Luna). 6. La Tempranica—Selection (Giménez). 7. Serenade arabe (Tárrega). 8. Gigantes y cabezudos (Caballero). 9. Soldier's Song (Serrano). 10. Song Recital, by Graciela. 11. News.
12.0 midnight—Dance Music, relayed from the "Alcázar."
12.30 a.m. (Saturday, approx.)—Close Down.

MILAN (Italy)
Unione Radiofonica Italiana (IMI). WL. 526.3 m. (570 kc); 7 kw.
Transmits at intervals from 11.15 a.m. to 1.0 p.m.—German Lesson.
7.30 p.m.—Wireless Lesson.
7.50 p.m.—Time.

7.52 p.m.—Variety Concert. 1. (a) Oberon—Overture (Weber), (b) On the steppes of Central Asia (Borodine). 2. Baritone Songs. 3. Andante variato in E flat (Schubert)—for pianoforte. 4. Soprano Songs, (a) Armez vous d'un noble courage (Glück Armide), (b) Revenez, revenez (Lully). 5. Verse Recital. 6. Baritone Songs. 7. Giaccona (Bach-Busoni)—for pianoforte. 8. Soprano Songs. (a) When I am laid in earth (Purcell), (b) English Song (Purcell). 9. Rosamunde—Ballet (Schubert).
9.55 p.m.—News.
10.0 p.m.—Dance Music—relayed from "La Fiaschetta Toscana."
10.30 p.m. (approx.)—Close Down.

MUNICH (Germany)
Deutsche Stunde in Bayern. WL. 535.7 m. (530 kc); 4 kw. Relayed by Nürnberg on 366 m. (900 kc), and Augsburg on 566 m. (530 kc).
Transmits at intervals from 10.20 a.m. to 1.0 p.m.—Talk, "The National Theatre."
7.0 p.m.—Programme in Celebration of the Fifth Birthday of the Munich Station. 1. "Faust"—Overture (Wagner). 2. Scenes from "Fidelio" (Beethoven). 3. "Leonore"—Selections (Beethoven).
8.50 p.m.—Wireless Notes.
9.0 p.m.—Winter Sports Report.
9.15 p.m.—Concert from the Hotel Stadt Wien.
10.30 p.m. (approx.)—Close Down.

NAPLES (Italy)
Unione Radiofonica Italiana (INA). WL. 333.3 m. (900 kc); 1.5 kw.
Transmits at intervals from 12 noon to 1.0 p.m.—Wireless Notes.
7.40 p.m.—News.
7.48 p.m.—Harbour Notes.
7.50 p.m.—"A Masked Ball"—Opera (Verdi).
9.55 p.m.—Calendar and Programme Announcements.
10.0 p.m. (approx.)—Close Down.

OSLO (Norway)
Kringkastingselskapet. WL. 461.5 m. (650 kc); 1.5 kw. Programme relayed by Hamar on 555.8 m. (540 kc); Porsgrund, 500 m. (600 kc); Frederikstad, 434.8 m. (690 kc); Notodden, 411 m. (730 kc); and Rjukan, 448 m. (670 kc).
Transmits at intervals from 9.0 a.m. to 1.0 p.m.—French Lesson.
6.15 p.m.—News.
6.30 p.m.—English Lesson.
7.0 p.m.—Time.
7.2 p.m.—Symphony Concert from the "Logen" Hall. 1. "In Westminster Abbey"—Suite (Haarklou). 2. Gurra—Suite (Halvorsen). 3. The Second Rhapsody (Svendsen).
8.30 p.m.—Song Recital.
9.0 p.m.—Weather and News.
9.15 p.m.—Topical Talk.
9.30 p.m. (approx.)—Close Down.

PARIS (France)
Ecole Supérieure (FPTT). WL. 458 m. (655 kc); 0.5 kw.
Transmits at intervals from 8.0 a.m. to 1.0 p.m.—Radio-Journal de France.
8.0 p.m.—Spanish Lesson.
8.40 p.m.—Education Talk.
9.0 p.m. (approx.)—Concert of Czech Music from the Works of Dvorák, Smetana, etc.

Programmes for Friday.—(Cont.)

PARIS (France)
Eiffel Tower (FL). WL. 2,650 m. (113 kc); 5 kw.
7.56 a.m.—Time Signal (on 32 m. 9,375 kc).
9.26 a.m.—Time Signal.
5.45 p.m.—Le Journal Parlé. Talks on "Science" etc., and Reading of an Unpublished Poem by the Comtesse de Noailles.
7.10 p.m.—Weather.
7.30 p.m.—Concert: 1. Second Trio in G Major (Beethoven). 2. Bass Solos: (a) Sylvia (Speaks), (b) How Do You Do Miss Springtime? (Ginon), (c) Invictus (Huhn). 3. Pièces brèves—for Flute and Pianoforte (Mouquet). 4. Flute Solo (Debussy). 5. Mezzo-Soprano Solo with Violin Accompaniment, "Le Nil" (Leroux). 6. Pianoforte Solos: (a) First Impromptu (Moreau), (b) Rigaudon (Ravel). 7. Mezzo-Soprano Solos: (a) La mort de la cigale (Massenet), (b) Pensée d'autonne, (Massenet), (c) Revenez amours (Lulli).
7.56 p.m.—Time Signal (on 32 m. 9,375 kc).
8.30 p.m.—Educational Programme Talks on "Great Writers at Home," "Latin Without Tears," "Forgotten Masterpieces."
10.26 p.m.—Time Signal.

PARIS (France)
Petit Parisien. WL. 340.9 m. (880 kc); 0.5 kw.
8.0 p.m.—Dance Music.
9.0 p.m.—Close Down.

PARIS (France)
Radio-Paris (CFR). WL. 1,750 m. (171 kc); 3 kw.
Transmits at intervals from 7.30 a.m. to 12.30 p.m.—Concert. 1. "A Midsummer Night's Dream" Overture (Mendelssohn). 2. Minuet from the Second Sonata (Beethoven). 3. Canzonetta (Tchaikovsky). 4. "La Maison grise" from "Fortunio" (Messager). 5. Songs: (a) Air from "Iphigenia in Aulis" (Gluck), (b) Aimant la rose (Rimsky-Korsakoff). 6. Sonata for Violin (Tartini). 7. Vieille Loure (Bach). 8. Danse caractéristique (Tchaikovsky). 9. Nuits algériennes (Griegh). 10. Adagio from the Concerto in B flat (Boccherini). 11. Serenade

de Milenka (Blockx). 12. Claudine (Lederer). News.
1.50 p.m.—Market Prices.
3.30 p.m.—Exchange Quotations.
3.45 p.m.—Concert. 1. Persian Dance (Guiraud). 2. Pianoforte Solos: (a) Après l'ondée (Pesse), (b) Valse bourrée (Brun). 3. Talk, "The Science of the Ignorant." 4. Gavotte and Minuet from "Manon" (Massenet). 5. Impressions exotiques (Mouton).
4.45 p.m.—Exchange Quotations.
7.0 p.m.—Agricultural Report.
7.45 p.m.—English Lesson.
8.0 p.m.—Exchange Quotations.
8.30 p.m.—Concert. 1. A Comedy. 2. Air from "Tolomeo" (Handel). 3. "Gwendoline"—Overture (Chabrier). 4. Rimes tendres (Aubert). 5. L'oiseau de feu (Stravinsky). 6. The Third Act of "The Valkyrie" (Wagner). News in the interval.

PITTSBURGH (U.S.A.)
Westinghouse Electric (KDKA). WL. 315.6 m. (950 kc); 50 kw.
Transmits at intervals from 2.45 p.m. to 11.15 p.m.—Concert from the William Penn Hotel.
12.0 midnight.—Time, and University of Pittsburgh Address.
12.15 a.m. (Saturday).—"Week End Tours."
12.30 a.m.—Variety.
The following programme from WJZ, New York.
1.0 a.m.—Godfrey Ludlow (Violinist).
1.30 a.m.—"White Rock Concert."
2.0 a.m.—"Wrigley Review."
3.0 a.m.—"Reymer's R.V.B. Trio."
3.30 a.m.—Time and Weather.
3.45 a.m. (approx.).—Close Down.

POSEN (Poland)
Polskie-Radio. WL. 344 m. (872 kc); 1.5 kw.
6.55 p.m.—Finance Notes.
7.15 p.m.—Programme from Warsaw, followed by Time, Variety and Weather.

PRAGUE (Czecho-Slovakia)
Strasnice. WL. 348.9 m. (860 kc); 5 kw.
Transmits at intervals from 10.0 a.m. to 5.15 p.m.—Agricultural Report.
5.35 p.m.—Czech-German Conversation.
6.15 p.m.—"The Melody Makers."
8.0 p.m.—Talk.

8.15 p.m.—Classical Concert.
9.0 p.m.—Time, News and Orchestral Selections.

ROME (Italy)
Unione Radiofonica Italiana (IRO). WL. 448.4 m. (660 kc); 3 kw.
Transmits at intervals from 11.30 a.m. to 7.0 p.m.—English Lesson.
7.30 p.m.—Time, News, Exchange and Weather.
7.45 p.m.—Vocal and Instrumental Concert. 1. Egmont—Overture (Beethoven). 2. I Pastori—Soprano Song (Pizzetti). 3. Visione—Soprano Song (Sgambatti). 4. Concerto in E minor (Nardini), for Violin with Pianoforte Accompaniment. 5. Lohengrin—Selections (Wagner). 6. Talk for Women. 7. Prelude (Bach-Kreisler). 8. Gavotte—Violin Solo (Bach-Kreisler). 9. Minuet—Violin Solo (Mozart). 10. The Daughter of the Elf King—Soprano Aria (Gianolio). 11. The Flying Dutchman—Tenor Aria (Wagner). 12. The Girl of the Golden West—Tenor Song (Puccini). 13. Sarabande and Tambourin—Violin Solo (Leclair). 14. Norma—Symphony (Bellini).
9.55 p.m.—News.
10.0 p.m. (approx.).—Close Down.

SCHENECTADY (U.S.A.)
General Electric Company (WGY). WL. 379.5 m. (790 kc); 50 kw.
Programme relayed by 2XAD on 21.96 m. (13,661 kc) from 6.0—7.0 p.m. and from 11.0 p.m.
Transmits at intervals from 11.45 a.m. to 11.0 p.m.—Savings Bank Programme, from New York.
11.0 p.m.—Exchange and News.
12.0 midnight.—Exchange and News.
12.30 a.m. (Saturday).—Health Talk.
12.35 a.m.—The WGY Players.
1.0 a.m.—Kolin Wager (Baritone).
2.0 a.m.—Time.
2.2 a.m.—"The Anglo Persians," from New York.
2.30 a.m.—"Cathedral Echoes."
3.0 a.m.—"Palmolive Hour," from New York.
4.0 a.m. (approx.).—Close Down.

STOCKHOLM (Sweden)
Radiotjänst (SASA). WL. 453.8 m. (661 kc); 1.5 kw. Relayed by Motala on 1,380 m. (217 kc); Göteborg, 416.7 m. (720 kc); Malmö, 260.9 m. (1,150 kc); and Sundsvall, 545.6 m. (550 kc).
Transmits at intervals from 11.35 a.m. to 5.0 p.m.—Talk for Boy Scouts.

5.20 p.m.—Topical Talk.
5.30 p.m.—Old-time Dance Music.
6.0 p.m.—Household Hints.
6.15 p.m.—Talk in English.
6.45 p.m.—Talk, "Popular Statistics."
7.5 p.m.—Introductory talk to following Opera.
7.20 p.m.—"Fidelio"—Opera (Beethoven), from the Royal Opera House.
8.15 p.m.—News and Weather.
9.35 p.m. (approx.).—Close Down.

STUTTGART (Germany)
Süddeutscher Rundfunk. WL. 380.7 m. (788 kc); 4 kw.
Transmits at intervals from 11.30 a.m. to 3.15 p.m.—Concert. 1. Freiheitshelden—March (Blankenburg). 2. Artists' Life—Waltz (Jos. Strauss). 3. Andante from the Octet (Schubert). 4. "The Mute of Portici"—Overture (Auber). 5. Selection from "Liebesketten" (d'Albert). 6. Eine kleine Nachtmusik (Schubert). 7. Dolores—Waltz (Waldteufel). 8. Return—March (Blon).
5.0 p.m.—Time, Weather and Agricultural Notes.
5.15 p.m.—Talk, "Boxing."
5.45 p.m.—Talk, "The Public and Community," from Karlsruhe.
6.15 p.m.—Elementary English Lesson.
6.45 p.m.—Programme Announcements for the Coming Week in Esperanto; Time and Weather.
7.0 p.m.—Violin Recital, from Karlsruhe. 1. Violin Sonata (Nardini). 2. Sonata for Violin and Pianoforte in F major (Beethoven). 3. (a) Andantino (Martini-Kreisler), (b) Rondino (Beethoven-Kreisler), (c) Tempo di Minuetto (Pugnani-Kreisler), (d) Waltz in A major (Brahms-Joachim), (e) Hungarian Dance in D minor (Brahms-Joachim), (f) Hungarian Dance in G minor (Brahms-Joachim).
8.0 p.m.—"The Comedy of Words" (Schnitzler): (a) "The Hour of Knowledge," (b) "The Bacchus Feast."
9.45 p.m.—News and Sports Notes.
10.0 p.m. (approx.).—Close Down.

TOULOUSE (France)
Radiophonie du Midi. WL. 391 m. (767 kc); 3 kw.
Transmits at intervals from 10.15 a.m. to 12.45 p.m.—Orchestral Concert.
8.30 p.m.—Concert. 1. Argentina—Castanet and Orchestral Selection. 2. La corrida (Stierkampf). 3. Danza (Granados). 4. Tango and

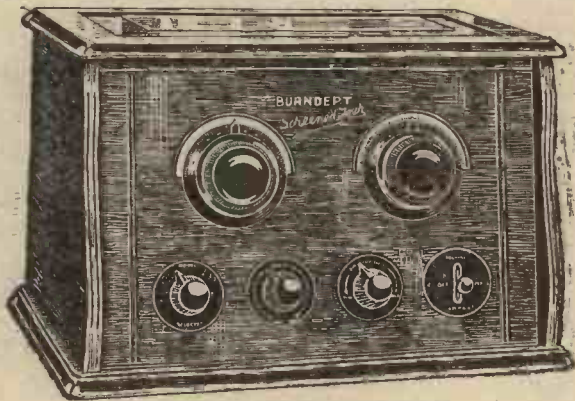
lou (Albeniz). 5. Spanish Ballet Music.
9.0 p.m.—Concert. 1. Selections from "The Damnation of Faust" (Berlioz). 2. Neri doux crépuscule. 3. Voici des roses. 4. The Song of the Flea (Moussorgsky). 5. (a) Souris Murcia, (b) Una lagrima (Sentis).

VIENNA (Austria)
Radio-Wien. WL. 576 and 517.2 m. (520 and 580 kc); 0.75 and 5 kw. Relayed by Graz on 357.1 m. (840 kc), Innsbruck 294.1 m. (1,020 kc), and Klagenfurt 272.7 m. (1,100 kc).
Transmits at intervals from 10.0 a.m. to 5.30 p.m.—Commerce Talk.
6.0 p.m.—Health Talk.
6.30 p.m.—"The Matthew Passion"—Oratorio (Bach), relayed from the Concert Hall.

WARSAW (Poland)
Polskie-Radio. WL. 1,111.1 m. (270 kc); 10 kw.
Transmits at intervals from 11.0 a.m. to 6.15 p.m.—Agricultural Report.
6.15 p.m.—Variety.
6.30 p.m.—Talk, "The Bad Influences of Sport."
6.55 p.m.—Music Talk.
7.15 p.m.—Concert of French Music. In the Interval: News in French.
9.0 p.m.—Time and News.
9.30 p.m. (approx.).—Close Down.

WILNO (Poland)
Polskie-Radio. WL. 435 m. (689 kc); 0.5 kw.
Transmits at intervals from 3.25 p.m. to 6.0 p.m.—News.
6.25 p.m.—Time and Variety.
6.35 p.m.—Answers to Letters.
7.15 p.m.—Programme from Warsaw.
9.0 p.m.—News and Close Down.

ZAGREB (Yugo-Slavia)
Radioklub-Zagreb. WL. 310.5 m. (966 kc); 0.35 kw.
Transmits at intervals from 12.15 p.m. to 7.0 p.m.—Esperanto Lesson.
7.15 p.m.—French Lesson.
7.30 p.m.—Announcements.
7.35 p.m.—Pianoforte Recital. 1. Two Preludes (Bach). 2. Fantasia in C major (Schumann). 3. Two Etudes (Chopin). 4. Two Preludes (Chopin). 5. Prelude in A minor (Rachmaninoff). 6. L'Isle joyeuse (Debussy).
8.50 p.m.—News.
9.0 p.m.—Musical Selections.



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London Showrooms: 15, BEDFORD STREET, STRAND, W.C.2.

PROGRAMMES FOR SATURDAY (March 31)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO GREENWICH MEAN TIME

BARCELONA (Spain)
Radio-Barcelona (EAJ1). WL. 344.8 m. (870 kc.); 1.5 kw.
Transmits at intervals from 11.0 a.m.
6.0 p.m.—Exchange.
6.10 p.m.—*Quintet Selections*.
8.30 p.m.—French Lesson.
9.0 p.m.—Chimes and Weather.
9.5 p.m.—Exchange and News.
9.10 p.m.—*Quintet Selections*.
1. Diana—Spanish March (Pacheco).
2. A toda vela (Cotó). 3. Marquise—Minuet (Charmettes).
9.30 p.m.—Astronomy Talk.
9.45 p.m.—*Quintet Selections*.
1. Mallorca—Barcarolle (Albeniz).
2. Minuet (Paderewsky). 3. The Bird and the rose—Waltz (Worsley).
10.0 p.m.—Exchange Closing Prices.
10.5 p.m.—Programme from *Union Radio (Madrid) EAJ7*.

BERGEN (Norway)
Kringkastingselskap. WL. 369.9 m. (811 kc.); 1.5 kw.
Transmits at intervals from 10.15 a.m.
5.0 p.m.—Programme for Girls.
5.30 p.m.—Ernst Rolf's Revue.
7.0 p.m.—*Orchestral Concert*.
1. "The Hebrides"—Overture (Mendelssohn). 2. Romance (Sibelius). 3. Schön Japan—Mazurka (Ganne). 4. En'raete Gavotte (Gillet). 5. Recitation. 6. Tortajoda—Spanish Waltz (Morena). 7. Potpourri from "The Czarевич" (Lehar). 8. Ali-Baba (Lopez).
8.30 p.m.—Talk, "When I was Prisoner of War in Russia and taken to Siberia."
9.0 p.m.—Weather, News and Time.
9.15 p.m.—*Dance Music*.
11.0 p.m. (approx.)—Close Down.

BERLIN (Germany)
Königswusterhausen. WL. 1,250 m. (240 kc.); 35 kw.
Transmits at intervals from 1.30 p.m.
3.0 p.m.—Educational Literature Review.
3.30 p.m.—Talk on "Parliamentary Reform."
4.0 p.m.—Programme from *Hamburg*.
5.0 p.m.—Talk on "Building."
5.30 p.m.—French Lesson.
5.55 p.m.—Talk on "Faust."
6.20 p.m.—Talk on "Bach."
7.10 p.m.—Programme from *Voxhaus*.

BERLIN (Germany)
Voxhaus. WL. 484.6 m. (619 kc.); 4 kw.
Transmits at intervals from 9.10 p.m.
2.30 p.m.—Talk, "Nature and Man."
3.0 p.m.—Hygiene Talk.
3.30 p.m.—*Concert*. 1. "The Bride"—Overture (Auber). 2. (a) Canonetta: (b) Erinnerung (Renée).
3. Song from "Die grosse Kaiserin" (Kollo). 4. Valse-Boston. 5. Tango. 6. Haydn Fantasia (Urbach). 7. Humoresque (Nukuloicz). 8. Carnival Scenes (Henning). 9. Wo die Zitronen blüh'n—Waltz (Strauss). 10. Elegy (Bemelmans).
11. Moonlight on the Hoang-Ho (Hantley). 12. March (Siede).
5.30 p.m.—Talk, "From the Sun to Radium."
6.0 p.m.—Talk, "Wages and Purchasing Power."
6.30 p.m.—Talk, "What Makes a Song Popular?"
7.10 p.m.—"Tragödie"—Opéra-comique (d'Albert).
9.15 p.m.—News.
9.30 p.m.—Dancing Lesson and *Dance Music*.
10.0 p.m.—"April—April" Radio Ball.

BERNE (Switzerland)
Radio-Berne. WL. 411 m. (730 kc.); 1.5 kw.
Transmits at intervals from 12 noon.
6.30 p.m.—Time and Weather.
6.35 p.m.—Talk, "The Swiss Part in South Sea Explorations."
7.0 p.m.—Probable Relay of Foreign Stations.
9.0 p.m.—News and Weather.
9.15 p.m.—The Kursaal Orchestra.
9.30 p.m.—*Dance Music*.
11.0 p.m. (approx.)—Close Down.

BRESLAU (Germany)
Schlesische Funkstunde. WL. 322.6 m. (930 kc.); 4 kw. Relayed by *Gleitwitz*, on 250 m. (1,200 kc).
Transmits at intervals from 10.15 a.m.
5.30 p.m.—Advanced French Lesson, relayed from *Königswusterhausen*.
6.30 p.m.—Talk, "The Theatrical Jubiles of Paul Barnay."
7.10 p.m.—"An Ocean Flight"—Play (Schirokauer).

8.0 p.m.—*Concert of Selections from "The Good Old Days"*. 1. (a) In alter Treue—March (Robrecht). (b) Rokoko Gavotte (Translatour). 2. (a) Die beiden alten (Pallos), (b) Liebe Himmelsvater was ist dos (Arnold), (c) Geh, alte, schau (Schubert-Berte). 3. (a) Wie's daheim war (Wohlgemut), (b) Dös alte Lied—Boston (Love). 4. (a) Ist doch die Welt a Narrenhaus (Berti), (b) Schwaber-Lied, from "Brother Martin," (c) Der erste Ball in Himmel (Kronegger), (d) Die drei Hochzeiten (Kutschera). 5. (a) Traumdeale, (b) Alte Semester (Lindsay-Theimer), (c) Kehraus (Kienzl). News.
9.30 p.m.—Programme relayed from *Voxhaus*.

BRUNN (Czechoslovakia)
Komarov. WL. 441 m. (680 kc.); 3 kw.
Transmits at intervals from 11.15 a.m.
5.0 p.m.—Time, and German Transmission.
5.25 p.m.—Talks.
6.0 p.m.—Recital of Slovakian Songs.
6.40 p.m.—French Lesson.
7.0 p.m.—*Popular Concert*.
8.30 p.m.—"The Cock Fight"—Comedy.
9.0 p.m.—Programme from *Prague*.

BRUSSELS (Belgium)
Radio Belgique. WL. 508.5 m. (590 kc.); 1.5 kw.
5.0 p.m.—*Dance Music*.
6.0 p.m.—*Elementary English Lesson*.
6.25 p.m.—*Advanced English Lesson*.
6.30 p.m.—*Le Radio Chronique*.
8.0 p.m.—"The Valkyrie"—Acts 1 and 3 (Wagner)—relayed from the "Conservatoire Royal," Liège.
In the Interval, Topical Talk.
10.15 p.m.—News.
10.30 p.m. (approx.)—Close Down.

BUDAPEST (Hungary)
Magyar Radio Ujsag. WL. 555.8 m. (570 kc.); 3 kw.
Transmits at intervals from 8.30 a.m.
1.30 p.m.—Literary Talk.
3.15 p.m.—Legal Talk.
4.15 p.m.—Pianoforte Recital.
5.30 p.m.—Hygiene Talk.
6.15 p.m.—Hungarian Song Recital, followed by Play.
8.40 p.m.—Time and News.
9.0 p.m.—*Orchestral Concert*.

COLOGNE (Germany)
Westdeutscher Rundfunk. WL. 283 m. (1060 kc.); 4 kw.
Transmits at intervals from 9.30 a.m.
12.5 p.m.—*Concert*: 1. Gipsy Love—Waltz (Lehar). 2. "Maritana"—Overture (Wallace). 3. Melodies from "The Daughter of the Regiment" (Donizetti). 4. Trumpet Solo. 5. Suite No. 3 (Micheli). 6. Serenade (Strauss). 7. Dance of the Witches (Dowell). 8. Torero und Andalusierin (Rubinstein). 9. Cross and Crown March (Becker).
2.50 p.m.—Talk, "The Literary Menu."
3.10—4.0 p.m.—See *Langenberg*.
4.0 p.m.—Talk for Women.
4.30 p.m.—See *Langenberg*.
5.0 p.m.—*Concert*: 1. Waltz (Waldteufel). 2. "The Bohemian Girl"—Overture (Balfe). 3. Aria, "Daughters of the Air" (Bach). 4. "La Gioconda" (Ponchielli). 5. Potpourri from "The Mikado" (Sullivan). 6. Serenata (Braga). 7. March (Blankenberg).
6.10 p.m.—See *Langenberg*.
6.40 p.m.—Talk.
7.0 p.m.—12 midnight.—See *Langenberg*.

COPENHAGEN (Denmark)
Copenhagen Radio. WL. 337 m. (890 kc.); 1 kw.
Relayed by *Kalundborg* on 1,153.8 m. (260 kc).
Transmits at intervals from 6.30 a.m.
6.0 p.m.—News, Exchange and Time.
6.20 p.m.—Programme Announcements.
6.30 p.m.—Talk.
7.0 p.m.—*Concert of Old Dance Music*: 1. Hand in Hand—March (Blon). 2. Santiago—Spanish Waltz (Corbin). 3. Ringel-Ringel-reia—Polka (Suppe). 4. Brennende Liebe—Mazurka (J. Strauss). 5. Lancers (Mikel). 6. Old Danish Folk Dances. 7. Die schöne Polin—Mazurka (Millocker). 8. Bitte schön—Polka (J. Strauss). 9. Valse militaire (Waldteufel). 10. Colombine—Mazurka (Lumbye). 11. Blondin—Galop (Möller).
8.0 p.m.—Reading.
8.30 p.m.—News.
8.45 p.m.—*Variety Concert*.
9.45 p.m.—*Dance Music* from the "Industri" Restaurant.
11.0 p.m.—Chimes and Close Down.

CRACOW (Poland)
Polskie Radio. WL. 566 m. (530 kc.); 1.5 kw.
Transmits at intervals from 11.0 a.m.
6.35 p.m.—Review of Foreign Politics.
7.0 p.m.—Carillon from *Notre Dame*.
7.5 p.m.—Programme relayed from *Warsaw*.
9.30 p.m.—*Relay of a Concert from the "Astoria Restaurant"*. Kattowitz.
10.30 p.m. (approx.)—Close Down.

DUBLIN (Ireland)
Dublin Broadcasting Station (2RN). WL. 319.1 m. (940 kc.); 1.5 kw.
Transmits at intervals from 1.30 p.m.
7.20 p.m.—News.
7.30 p.m.—Talk.
7.45 p.m.—Irish Talk by Seamus O'Duinn.
8.0 p.m.—The Augmented Station Orchestra.
8.20 p.m.—"Musical Moments"—Vocal Offerings by H. R. White.
9.10 p.m.—"Maighread Ni Annagáin," by Anhran Ghaolacha.
9.25 p.m.—Station Orchestra.
9.40 p.m.—"April Fools," by the Crofton Repertory Company.
10.10 p.m.—The Augmented Station Orchestra.
10.30 p.m.—News, Weather and Close Down.

FRANKFURT-am-MAIN (Germany)
Südwestdeutscher Rundfunk. WL. 428.6 m. (700 kc.); 4 kw. Relayed by *Cassel*, on 252.1 m. (1,190 kc).
Transmits at intervals from 12.0 noon.
4.45 p.m.—Reading.
5.30 p.m.—Astronomy Talk from *Cassel*.
6.0 p.m.—The Letter Box.
6.15 p.m.—Shorthand Lesson.
6.45 p.m.—Talk, "Astronomical Charts of Different Nations throughout the Ages."
7.15 p.m.—*Variety Concert*.
9.30 p.m.—Programme from *Voxhaus*.
11.30 p.m. (approx.)—Close Down.

HAMBURG (Germany)
Norag (ha, in Morse). WL. 396 m. (757 kc.); 4 kw. Relayed by *Bremen* on 272.7 m. (1,190 kc); *Hanover*, 297 m. (1,009 kc); and *Kiel*, 278 m. (1,076 kc).
Transmits at intervals from 5.55 a.m.
4.0 p.m.—Children's Corner.
5.0 p.m.—(Hamburg and Kiel)—*Variety Concert*.
5.55 p.m.—Talk, "The Position of Handicraft in Present Day Commerce."
6.35 p.m.—Legal Talk.
6.55 p.m.—Weather.
7.0 p.m.—"The Enchanted Castle"—Operetta (Millocker). News.
10.25 p.m.—(Hamburg, Bremen and Kiel)—Ice Report.
10.30 p.m.—(Hamburg, Bremen and Kiel)—*Dance Music*.

HILVERSUM (Holland)
Algemeene Vereeniging Radio-Omroep. WL. 1,069 m. (280.5 kc.); 5 kw.
11.40 a.m.—Police News.
12.10 p.m.—*Trio Music*.
3.10 p.m.—Italian Lesson.
4.10 p.m.—French Lesson.
4.45 p.m.—German Lesson.
5.40 p.m.—*Orchestral Concert*.
6.25 p.m.—Talk.
7.25 p.m.—Police News.
7.45 p.m.—*Concert and Talk arranged by the Workers' Radio Society*.
10.10 p.m.—*Concert*, relayed from the Royal Picture House, Amsterdam.
11.15 p.m. (approx.)—Close Down.

HUIZEN (Holland)
WL. 340.9 m. (880 kc.); 4 kw. (Until 5.40 p.m.). Transmits from 5.40 p.m. on 1,950 m. (154 kc).
12.10 p.m.—*Trio Concert*.
2.40 p.m.—Children's Corner.
4.40 p.m.—Gramophone Records.
5.40 p.m.—Literary Talk.
6.10 p.m.—Gramophone Records.
6.40 p.m.—Dutch Lesson.
7.10 p.m.—Talk.
7.40 p.m.—*Instrumental Concert*.
10.10 p.m.—News.

KATTOWITZ (Poland)
Polskie-Radio. WL. 422 m. (710 kc.); 10 kw.
Transmits at intervals from 3.20 p.m.
4.20 p.m.—Polish Lesson.
4.45 p.m.—Children's Corner.
5.55 p.m.—News and Announcements.
6.35 p.m.—Talk.
7.0 p.m.—Programme from *Warsaw*.
9.0 p.m.—Time and News.
9.30 p.m.—*Concert* from the Café Atlantic.

KONIGSBERG (Germany)
Ostmarken Rundfunk. WL. 330.3 m. (908 kc.); 1 kw. Programme relayed by *Danzig*, on 272.7 m. (1,190 kc).
Transmits at intervals from 8.0 a.m.
7.10 p.m.—Legal Talk.
7.30 p.m.—*Concert*.
9.30 p.m.—*Concert*. 1. Suite poétique (Dvorák). 2. Romance lirique (Beccce). 3. Hoch lebe der Tanz (Waldteufel). 4. Abendmusik (Förster). 5. Traumbilder (Lumbye). 6. Serenata appassionata (Elvesta).

KOVNO (Lithuania)
Radio Kaunas. WL. 2,000 m. (150 kc.); 15 kw.
Transmits from 2.30 p.m.
4.30 p.m.—Talk in German: "Vino."
5.0 p.m.—Programme Announcements in German.
6.0 p.m.—Time, Weather and News.
6.20 p.m.—Programme announcements for the coming week.
6.30 p.m.—Relay from the National Theatre.

LANGENBERG (Germany)
Westdeutscher Rundfunk. WL. 470 m. (638 kc.); 25 kw. Programme also for *Aix-la-Chapelle*, 401 m. (748 kc); *Cologne*, 283 m. (1060 kc); and *Münster*, 241.9 m. (1240 kc).
Transmits at intervals from 9.30 a.m.
12.5—3.10 p.m.—Programme from *Cologne*.
3.10 p.m.—Wireless Talk from *Elberfeld*.
3.30 p.m.—Programme from *Königswusterhausen*.
4.0 p.m.—Programme from *Cologne*.
4.30 p.m.—*English Lesson from Münster*.
5.0 p.m.—Programme from *Cologne*.
6.10 p.m.—Literary Talk from *Düsseldorf*.
6.40 p.m.—Programme from *Cologne*.
7.0 p.m.—"The New Woman." Programme from *Dortmund*. Readings and Recitations from the Works of Women Writers.
8.0 p.m.—*Variety Concert from Dortmund*, followed by News and *Concert from the Café Corso, Dortmund*. In the interval at 11 p.m. Race Relay from the Westphalian Hall, *Dortmund*.
12 midnight (approx.)—Close Down.

LAUSANNE (Switzerland)
Société Romande de Radiophonie (HB2). WL. 680 m. (441 kc.); 0.6 kw.
Transmits at intervals from 6.45 a.m.
7.0 p.m.—Weather.
7.2 p.m.—*Concert*: 1. L'Enfant du régiment (Fucik). 2. Fascination Waltz (Marchetti). 3. "The Geisha" (Jones). 4. Grand Maman (Langer). 5. Chanson des abeilles (Filippucci). 6. "Pas sur la bouche"—Operetta Selection (Yvain). 7. Lisbona—March (Candiolo).
8.0 p.m.—*Dance Music* from the Old India Restaurant.

MADRID (Spain)
Union Radio (EAJ7). WL. 375 m. (800 kc.); 1.5 kw.
Transmits at intervals from 11.45 a.m.
7.0 p.m.—*Orchestral Selections*.
1. The Miller of Subiza—Selection (Oudrid). 2. "Le timbre d'argent"—Selection (Saint-Saëns). Interlude by Luis Medina.
8.0 p.m.—*Dance Music*, relayed from the "Alcazar."
9.30 p.m.—Talk, "The Home Education of the Child."
9.45 p.m.—Photography Lesson.
10.0 p.m.—Programme relayed by *San Sebastian (EAJ8)*. Time.
10.10 p.m.—"Pepe Conde," or "El mentir de las estrellas"—Musical Play (Vives).
12.20 a.m. (Sunday)—News.
12.30 a.m. (approx.)—Close Down.

MILAN (Italy)
Unione Radiofonica Italiana (IMI). WL. 526.3 m. (570 kc.); 7 kw.
Transmits at intervals from 11.15 a.m.
7.2 p.m.—French Lesson.
7.30 p.m.—Wireless Notes.
7.50 p.m.—Time.
7.52 p.m.—*Variety Concert*. 1. (a) The Magic Flute—Overture (Mozart), (b) Good Friday Spell (Wagner). 2. Soprano Songs: (a) Le matin (Bizet), (b) Bergerette (Weckerlin). 3. Talk, "The History and Ethics of Music." 4. Variety. 5. Mezzo-Soprano Songs: (a) O. lovely night (Bossi), (b) Di Te

(Tirindelli). 6. Selections. 7a. Dinorah—Soprano Song (Meyerbeer). 8. Pianoforte Solos. 9. Mezzo-Soprano Solos: (a) L'ora del ritrova (Donizetti), (b) Strimpellata (Tarenghi). 10. William Tell—Symphony (Rossini).
9.55 p.m.—News.
10.0 p.m.—*Quintet Music*. 1. Stornellata d'amore (Di Lazzaro). 2. Sotto i tigli (Fatuo). 3. Chitarata (Mariotti). 4. Rintocchi allegri (Niccì).
10.30 p.m. (approx.)—Close Down.

MUNICH (Germany)
Deutsche Stunde in Bayern. WL. 535.7 m. (560 kc.); 4 kw. Relayed by *Nürnberg* on 303 m. (990 kc.); and *Augsburg* on 566 m. (530 kc).
Transmits at intervals from 10.45 a.m.
6.30 p.m.—*Symphony Concert*. 1. Schéhérazade—Symphonic Poem (Rimsky-Korsakoff). 2. Concerto for Cello and Orchestra (Dvorák).
7.45 p.m.—*Concert*. 1. "Si j'étais roi"—Overture (Adam). 2. Intermezzo from "Naila" (Delibes). 3. Aria from "The Tales of Hoffmann" (Offenbach). 4. Serenade rocco (Meyer-Helmund). 5. Torgauer Marsch.
8.20 p.m.—A Revue.
9.5 p.m.—News.
9.20 p.m.—*Concert from the Hotel Reichsadler*.
11.0 p.m. (approx.)—Close Down.

NAPLES (Italy)
Unione Radiofonica Italiana (INA). WL. 333.3 m. (900 kc.); 1.5 kw.
Transmits at intervals from 12.0 noon.
7.20 p.m.—Wireless Notes.
7.40 p.m.—News.
7.48 p.m.—Harbour Notes.
7.55 p.m.—*Relay of an Opera from the San Carlo Theatre*.
9.55 p.m.—Calendar, Programme Announcements and Close Down.

OSLO (Norway)
Kringkastingselskapet. WL. 461.5 m. (650 kc.); 1.5 kw. Programme relayed by *Hamar* on 555.8 m. (540 kc); *Porsgrund*, 430 m. (600 kc); *Fredriksstad*, 434.8 m. (690 kc); *Notodden*, 411 m. (730 kc); and *Rjukan*, 448 m. (670 kc).
Transmits at intervals from 10.10 a.m.
6.15 p.m.—News.
6.30 p.m.—Talk, "Pilgrimage and Sacred Springs."
7.0 p.m.—Time.
7.2 p.m.—*Orchestral Concert*. 1. Invitation to the Dance (Waber). 2. Fiançailles (Wesley). 3. Selection from "The Gipsy Baron" (Joh. Strauss). 4. Asra (Königsberger). 5. Selection from "The Little Dutch Girl" (Kalmán). 6. Foxtrot (Kahn-Whiting).
8.0 p.m.—Recitations.
8.30 p.m.—"Cello Recital."
9.0 p.m.—Weather, News and Sports Notes.
9.15 p.m.—Topical Talk.
9.30 p.m.—(approx.)—*Dance Music* from the Grand Hotel.
11.0 p.m. (approx.)—Close Down.

PARIS (France)
Ecole Supérieure (FPIT). WL. 458 m. (655 kc.); 0.5 kw.
Transmits at intervals from 8.0 a.m.
2.0 p.m.—*Orchestral Concert*.
3.15 p.m.—Programme for Hospitals.
5.15 p.m.—*Pasdeloup Concert*.
7.15 p.m.—Radio-Journal de France.
8.30 p.m.—Talk on "Tuberculosis."
9.0 p.m.—*Concert*, followed by News.

PARIS (France)
Eiffel Tower (FL). WL. 2,650 m. (113 kc.); 5 kw.
7:56 a.m.—Time Signal (on 32 m.; 9:375 kc).
9:26 a.m.—Time Signal.
5:45 p.m.—Le Journal Parlé. Talks on "The Week in Paris," etc.
7:10 p.m.—Weather.
7:30 p.m.—*Concert*. 1. Tenor Solos: (a) Berceuse (Gaubert); (b) Three Songs by Hugo Wolf, "Lebewohl," "Fussreise," "Verborgenheit." 2. "Cello Sonata (Cassado). 3. "La Rakshasi"—Hindu Ballet (Cadou). 4. Three Strauss Songs for Tenor. 5. Orchestral Suite: (a) Berceuse et carillon illois; (b) Voite de Provence; (c) La dérobée bretonne; (d) Bourrée d'Auvergne; (e) Danse alsacienne; (f) Epilogue (Jacquet). At 7:56 p.m. Time Signal (on 32 m.; 9:375 kc).
8:30 p.m.—Educational Programme. Talks on "The Child and Psycho-analysis," "Anthropology," etc.
10:26 p.m.—Time Signal.

Programmes for Saturday.—(Cont.)

PARIS (France)
 Petit Parisien. WL. 340.9 m. (880 kc); 0.5 kw.
 9.0 p.m.—Regional Concert. 1. Regrets at bourrées. 2. Choral Songs: (a) Obal, Obal, ol found del prat, (b) Lou Rousinhol, (c) Lou Bouyé.
 3. Prelude to the First Act of "Le Mas" (Canteloube). 4. Songs: (a) Pastourelle, (b) N'ai pas jeu de mio, (c) Lo Calhé. 5. Songs: (a) Jano d'Oime, (b) Plouro cor menu, (c) Partiren pas d'oici. 6. Prelude to "The Cathedral" (Canteloube).
 7. Songs: (a) La Pastoura als camps, (b) Bailléro, (c) L'Aio de rotso. 8. Songs: (a) Filho del paysan!, (b) En passant par le bois. 9. Prelude to the Second Act of "Le Mas" (Canteloube). 10. Songs of Auvergne: (a) Lo Fiolaire, (b) Soun, soun, (c) Obal, dins lou limouzi. 11. Maudit sia l'amour—Song. 12. Chant des Auvergnats.

PARIS (France)
 Radio-Paris (CFR). WL. 1,750 m. (171 kc); 3 kw.
 Transmits at intervals from 7.30 a.m. 12.30 p.m.—Concert of Classical Quartets, and Popular Songs of Provence, News.
 1.50 p.m.—Market Prices.
 3.30 p.m.—Exchange Quotations.
 3.45 p.m.—Dance Music.
 4.45 p.m.—News.
 7.0 p.m.—Agricultural Report.
 7.30 p.m.—Pianoforte Lesson.
 8.0 p.m.—Talk, "Elections and Women," followed by Exchange and News.
 8.30 p.m.—Gala Concert organised by "Le Matin." "Ma Galène ma bien aimée." Revue. News in the interval.

PITTSBURGH (U.S.A.)
 Westinghouse Electric (KDKA). WL. 315.6 m. (950 kc); 50 kw.
 Transmits at intervals from 2.45 p.m. 11.15 p.m.—Concert from the William Penn Hotel.
 12.0 (midnight)—Time and University of Pittsburgh Address.
 12.15 a.m. (Sunday)—"Weekly Meeting of the Home Radio Club."
 12.45 a.m.—"Gems of American Literature."

The following programme from WJZ, New York.
 1.0 a.m.—"R.C.A. Radiotrons."
 2.0 a.m.—"Philo Hour."
 3.0 a.m.—Barn Dance.

POSEN (Poland)
 Polskie-Radio. WL. 344 m. (872 kc); 1.5 kw.
 Transmits at intervals from 12.0 noon. 6.15 p.m.—French Lesson.
 6.35 p.m.—Talk.
 7.0 p.m.—Finance Notes.
 7.30 p.m.—Programme from Warsaw.
 9.0 p.m.—Time and Variety.
 9.30 p.m.—Weather and News.
 9.50 p.m.—Dance Music.
 11.0 p.m.—Concert of Light Music.
 12.0 midnight (approx.)—Close Down.

PRAGUE (Czechoslovakia)
 Strasnice. WL. 348.9 m. (860 kc); 5 kw.
 Transmits at intervals from 10.0 a.m. 5.0 p.m.—German Transmission.
 5.25 p.m.—Agricultural Report.
 6.15 p.m.—Orchestral Concert.
 7.0 p.m.—Weather and News.
 7.5 p.m.—Popular Concert.
 8.0 p.m.—Concert. 1. Sevilla (Albeniz). 2. Minuet in G major (Albeniz). 3. Gavotte (Glück). 4. Rosamunde (Schubert). 5. Dance (Alvé). 6. Foughete (Roomer).
 8.30 p.m.—Dramatic Programme.
 9.0 p.m.—Time, News and Orchestral Selections.

ROME (Italy)
 Unione Radiofonica Italiana (IRO). WL. 448.4 m. (660 kc); 3 kw.
 Transmits at intervals from 11.30 a.m. 7.0 p.m.—German Lesson.
 7.30 p.m.—Time, News, Exchange and Weather.
 8.0 p.m.—"The Pearl Fishers"—Opera (Bizet). In the Interval—Scientific Review.
 9.55 p.m.—News.
 10.0 p.m. (approx.)—Close Down.

SCHENECTADY (U.S.A.)
 General Electric Company (WGY.) WL. 379.5 m. (790 kc); 50 kw.
 Programme relayed by 2XAF on 31.4 m. (9,554 kc) from 11.25 p.m. Transmits at intervals from 11.45 a.m.

11.30 p.m.—Dinner Music from the Hotel Onondaga, Syracuse.
 12.30 a.m. (Sunday)—3.0 a.m.—Programme from New York.
 "Statler's Pennsylvanians."
 1.0 a.m.—The High Jinkers.
 2.0 a.m.—Time, and the Little Orchestra.
 2.30 a.m.—"Twin Pairs of Harmony."
 3.0 a.m.—Organ Recital from the Eastman Theatre, Rochester.
 4.0 a.m.—Dance Music from the Hotel van Curler.
 5.0 a.m. (approx.)—Close Down.

STOCKHOLM (Sweden)
 Radiotjänst (SASA). WL. 453.8 m. (661 kc); 1.5 kw.
 Relayed by Motala, on 1380 m. (217 kc); Göteborg, 416.7 m. (720 kc); Malmö, 260.9 m. (1150 kc); and Sundsvall, 545.6 m. (550 kc).
 Transmits at intervals from 11.35 a.m. 4.0 p.m.—Light Music.
 4.45 p.m.—Children's Corner.
 5.15 p.m.—Light Music.
 5.45 p.m.—Drama (Stringberg).
 6.45 p.m.—Talk, "The Chimney-sweep."
 7.0 p.m.—Cabaret Concert from the "Eighties."
 8.15 p.m.—News and Weather.
 8.45 p.m.—Topical Talk.
 9.0 p.m.—Dance Music.
 11.0 p.m. (approx.)—Close Down.

STUTT GART (Germany)
 Süddeutscher Rundfunk. WL. 380.7 m. (788 kc); 4 kw.
 Transmits at intervals from 11.30 a.m. 2.0 p.m.—Concert: 1. In Treue Fest—March (Teike). 2. "Entry of the Guests" from "Tannhäuser" (Wagner). 3. Selection from "Madame Butterfly" (Puccini). 4. (a) Rheinlandschnecht, (b) Gondellied, (c) Aus der Jugendzeit. 5. Badner Mad'ln—Waltz (Kornzak). 6. March from "Carmen" (Bizet). 7. (a) Die-Spielleut' sind da, (b) Juchheissa, mein Dirndl, (c) Schneiderlied. 8. Schlaraffische Ouverture (Benning). 9. Vom Rhein der Wein (Brandt). 10. (a) Am fidelen Stammtisch, (b) Die Schwiegermutter, (c) Katzenquartett. 11. Sabot Dance from "Czar and Carpenter" (Lortzing). 12. Souvenir of Offenbach (Fétras). 13. Deutschemeister—March (Jurek).
 5.0 p.m.—Time and Weather.

5.15 p.m.—Talk, "Light, Air and Sun for our Children," from Freiburg, 575.8 m. (521 kc).
 5.45 p.m.—Talk.
 6.15 p.m.—Talk, "Labour Exchange and Unemployment Insurance."
 7.0 p.m. (approx.)—Time, Weather and Sports Notes.
 7.15 p.m.—"The Hunt for Happiness"—A Journey Round the World in 12 Transmissions.—The South Seas.
 8.15 p.m.—Experimental relay of other stations.
 9.30 p.m.—Programme from Foxhaus.
 10.0 p.m.—Dance Music.
 11.30 p.m. (approx.)—Close Down.

TOULOUSE (France)
 Radiophonie du Midi. WL. 391 m. (767 kc); 3 kw.
 Transmits at intervals from 10.15 a.m. 12.45 p.m.—Orchestral Concert.
 8.5 p.m. (approx.)—Talk on "Literature and the Sea."
 8.30 p.m.—Concert. 1. "Die Fledermaus" (Strauss). 2. Selection from "Rigoletto" (Verdi). 3. Selections from "Marouf" (Rabaud). 4. "Louise"—Selection (Charpentier). 5. "Mireille"—Selections (Gounod). 6. Tango (Santoro). 7. Pebeta Canyegue (Donato). 8. Copetin vos sos mi hermono (Domenech). 9. En silencio (Courau). 10. Milonga con variacion (Canaro). 11. Micifuz (Sviles). 12. Julio Navarro (Canaro). 13. No salgas de tu barrio (Delfino). 14. Calle corrientes (Delfino). 15. Violeta (Santis). 16. Amor criollo (Santis).

VIENNA (Austria)
 Radio-Wien. WL. 576 and 517.2 m. (520 and 580 kc); 0.75 and 5 kw.
 Relayed by Innsbruck on 294.1 m. (1,020 kc); and Klagenfurt, 272.7 m. (1,100 kc).
 Transmits at intervals from 10.0 a.m. 3.15 p.m.—Concert. 1. "Elizabeth"—Overture (Rossini). 2. Frühlingskinder—Waltz (Waldteufel). 3. "Tiefstand"—Selection (D'Albert). 4. Violin Solo (Hubay). 5. Sere-nade for Violin, Cello and Harp (Toselli). 6. Selection from "The Merry Widow" (Lehár). 7. Elfenreigen (Hellmesberger). 8. March Potpourri (Kornzak). 9. Polka (Strauss).

5.0 p.m.—Art and Culture Talk.
 5.30 p.m.—Concert. 1. Songs: (a) Nachtvien, (b) An dem Grabe Anselmos, (c) Jüngling an der Quelle (Schubert). 2. Rondo in C minor for Two Pianofortes (Chopin). 3. Songs (Iwe). 4. Violin Sonata in D major, Op. 15 (Kornauth).
 6.45 p.m.—"The Marquise of Arcis"—Play (Diderot—arr. Sternheim). Followed by Dance Music from the Hotel Bristol.

WARSAW (Poland)
 Polskie-Radio. WL. 1,111.1 m. (270 kc); 10 kw.
 Transmits at intervals from 11.0 a.m. 2.30 p.m.—Talk, "Parliamentary Development in England."
 3.0 p.m.—Music Talk.
 3.25 p.m.—News.
 3.40 p.m.—Talk, "The Organisation of the Rural Community."
 4.20 p.m.—Answers to Letters.
 4.45 p.m.—Children's Corner from Cracow.
 6.5 p.m.—Agricultural Report.
 6.15 p.m.—Variety.
 6.35 p.m.—Talk, "Thadé Jaroszynski."
 7.0 p.m.—Talk.
 7.30 p.m.—"Die Fledermaus"—Operetta (Strauss). In the Interval: News in French.
 9.0 p.m.—Time and News.
 9.30 p.m.—Dance Music.
 10.30 p.m. (approx.)—Close Down.

WILNO (Poland)
 Polskie-Radio. WL. 435 m. (689 kc); 0.5 kw.
 Transmits at intervals from 3.25 p.m. 5.15 p.m.—Children's Corner.
 6.0 p.m.—News.
 6.25 p.m.—Time and Variety.
 6.35 p.m.—Talk, "Polish Coal and Petrol."
 7.30 p.m.—Programme from Warsaw.
 9.0 p.m.—News.
 9.30 p.m.—Dance Music.
 10.30 p.m. (approx.)—Close Down.

ZAGREB (Yugoslavia)
 Radioklub-Zagreb. WL. 310.5 m. (966 kc); 0.35 kw.
 Transmits at intervals from 12.15 p.m. 6.15 p.m.—Announcements.
 6.30 p.m.—Relay of an Opera from the National Theatre in Ljubljana

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STATIONS IN ORDER OF WAVELENGTHS AND FREQUENCIES.

EUROPEAN

M.	Kc.	Station
400	75	Berlin (Königswusterhausen) AFP, 8 kw.
2900	103	Berlin (Wolff's Bureau). Intermittent News during the day.
2650	113	Paris (Eiffel Tower), FL, 5 kw.
2525	119	Berlin (Wolff's Bureau). Intermittent News during the day.
2000	150	Kovno (Lithuania), 15 kw.
1950	154	Scheveningen Haven (Holland), 2.5 kw.
1950	154	Huizen (From 5.40 p.m. till closing down).
1870	160	Kosice (Czecho-Slovakia), 5 kw. DAILY—6.30—9.0 p.m.
1829	164	Norddeich (Germany). WEEKDAYS—12.0 midnight, Weather Report.
1800	167	Angora (Turkey), 6 kw.
1750	171	Paris (Radio-Paris) CFR, 3 kw. (Aer.)
1700	176	Kharkov Narkompostschel (Russia), 1.5 kw.
1604.8	187	Davenport (B.X.), 25 kw. (Aer.)
1450	207	Moscow (Old Komintern), RA1, 20 kw. DAILY—2.0 p.m.
1380	217	Motala (Sweden), 20 kw. (Aer.) Relays Stockholm
1250	240	Königswusterhausen (Zeeseen), 35 kw. in Aerial.
1190	254	Boden (Sweden), 1 kw.
1180	254	Stamboul (Turkey) 5 kw.
1153.8	260	Kalundborg, 7.5 kw. (Aer.)
1150	261	Ryvang (Denmark), 1 kw.
1117	269	Novosibirsk (Russia), RA 33, 4 kw. 5 p.m.
1111.1	270	Warsaw (Poland), 10 kw. (Aer.)
1100	273	De Bilt (Holland). WEEKDAYS—8.15 p.m. Weather.
1069	280.5	Hilversum (Holland) ANRO, 5 kw. (Aer.)
1000	300	Basle (Switzerland), 0.25 kw. DAILY—7.30—9.5 p.m.
995.5301.4		Leningrad (Russia), 10 kw. WEEKDAYS—5 p.m., Lecture: 6.0 p.m., News: 6.30 p.m. Concert or Opera. SUNDAY—5.0 p.m., Lecture, 6.0 p.m., News. 6.30 p.m., Concert.
870	345	Tiflis (Russia), 4 kw.
860	348	Nijni Novgorod (Russia), 1.2 kw.
850	353	Rostov/Don (Russia), 4 kw. 3.10 p.m.
820	366	Kiev (Russia), 1 kw.
760	395	Geneva (Radio-Geneve), 0.5 kw. WEEKDAYS—7.40 p.m., Concert and News.
720	416	Ostersund (Sweden), 2 kw. Relays Sundsvall.
680	441	Lausanne (Switzerland), HB2, 0.6 kw. DAILY—8.0 p.m., Concert. Talk.
675	444	Moscow (Popoff).
588.2	510	Zürich (Switzerland), 0.2 kw.
576	520	Vienna (Stubenberg), 0.75 kw.
575.8	521	Freiburg (Germany), 0.75 kw.
566	530	Augsburg (Germany), 1.5 kw. Relays Munich.
566	530	Bloemendaal (Holland), 0.05 kw. SUNDAYS—9.40 a.m. and 4.40 p.m., Church Service.
566	530	St. Michel (Finland).
566	530	Cracow (Poland), 1.5 kw.
555.8	540	Hamar (Norway), 0.7 kw.
555.8	540	Budapest (Hungary), 3 kw.
545.8	550	Sundsvall (Sweden), 1 kw.
535.7	560	Munich (Germany), 4 kw. SUNDAY—10.30 a.m., Concert.
526.3	570	Milan, 7 kw.
517.2	580	Vienna (Rosenhügel), 5 kw.
508.5	590	Brussels, 1.5 kw.
500	600	Aberdeen (2BD), 1.5 kw.
500	600	Uppsala (Sweden), 0.25 kw. Relays Stockholm.
500	600	Linköping (Sweden), 0.25 kw. Relays Stockholm.
500	600	Porsgrund (Norway), 1 kw. Relays Oslo.
491.8	610	Davenport Experimental (5GB), 25 kw. in Aerial.
487	618	Kharkov (Russia) 4 kw.
484.6	619	Berlin (Witzleben), 4 kw.
477.7	628	Lyons (France) (La Doua), PTT, 1 kw. MON., WED., & FRI.—9.45 p.m., Concert. SUN., TUES., THURS., & SAT.—Relays Ecole Supérieure.
470	638	Langenberg (Germany), 25 kw.
462	649	Barcelona (Spain) (Radio Catalana) EAJ13, 1 kw.
461.5	650	Oslo (Norway), 1.5 kw.
458	655	Paris (Ecole Supérieure), FPTT, 0.5 kw.
453.8	661	Stockholm, 1.5 kw.
450	668	Moscow (Trades Union), RA2, 4 kw. 3.0 a.m.—8.0 p.m.
448.4	669	Rome (IRO), 3 kw.
448	670	Bjukan (Norway), 0.1 kw. Relays Oslo.
441	680	Bruenn (Czecho-Slovakia), 3 kw. DAILY—6.0 p.m., Concert and News. THURS.—4.40 p.m., Talk for Women. SUN.—10.0 a.m., Concert.
435	689	Wilno (Poland) 0.5 kw.
434.8	690	Seville (Spain) (Union Radio), EAJ5 2 kw.
434.8	690	Fredrikstad (Norway), 0.7 kw. Relays Oslo.
428.6	700	Frankfurt-on-Main (Germany), 4 kw.
426.5	707	Riga (Latvia), 2 kw. DAILY—10.35—11.0 a.m. and 5.0—8.30 p.m., Concert, News, Weather.
422	710	Kattowitz (Poland), 10 kw.
416.7	720	Göteborg (Sweden), 1 kw.
411	730	Berne (Switzerland), 1.5 kw.
411	730	Notodden (Norway), 0.7 kw. Relays Oslo.
408	735	Tallinn (Reval), Estonia, 2.2 kw.
405.4	740	Glasgow (58C), 1.5 kw.
405	741	Salamanca (Spain), EAJ22, 1 kw. DAILY—9.30 p.m., Concert. 10.30 p.m., Dance Music.
401	748	Aix-la-Chapelle (Germany) 0.75 kw.
400	750	Cadiz (Spain), EAJ3, 0.5 kw.
400	750	Mont de Marsan (France), 4 kw.
400	750	Madrid (Radio España) (EAJ2), 0.5 kw.
400	750	Cork (Irish Free State), 6CK, 1.5 kw.
400	750	Plymouth (5PY), 0.2 kw.
400	750	Tammervois (Finland). Relays Helsingfors, 0.25 kw.
400	750	Bilbao (Spain) EAJ9, 0.5 kw.
396	757	Hamburg (ha, in Morse), 4 kw.
391	767	Toulouse (France) (Rad. du Midi), 3 kw. DAILY—12.40 p.m., Concert. 6.50 p.m., Concert.
384.6	780	Manchester (2ZY), 1.5 kw.
380.7	788	Stuttgart (Germany), 4 kw.
375.9	798	Helsingfors (Finland), 1.2 kw. 8.0 a.m. Exchange Quotations. DAILY—4.0—7.0 p.m., Concert.
375	800	Madrid (Union Radio), EAJ7, 1.5 kw.
370	811	Paris (Radio LL), 0.5 kw. MONDAY, WEDNESDAY and FRIDAY—10.0 p.m., Concert.
369.9	811	Bergen (Norway), 1.5 kw.
368.3	819	Lepzig (Germany), 4 kw.
361.4	830	London (2LO), 3 kw.
357.1	840	Graz (Austria), 0.5 kw. Usually relays Vienna.
355	845	Falun (Sweden), 2 kw.

M.	Kc.	Station
353	850	Cardiff (5WA), 1.5 kw.
348.9	860	Prague (Czecho-Slovakia), 5 kw. DAILY—7.0 p.m., Concert.
344.8	870	Barcelona (Spain) Radio Barcelona, EAJ1, 1.5 kw.
340.9	880	Posen (Poland), 1.5 kw.
340.9	880	Paris (Petit Parisien), 0.5 kw.
337	890	Huizen (Holland), 4 kw. (till 5.40 p.m.).
335	895	Copenhagen, 1 kw.
335	895	San Sebastian (Spain), RAJS, 0.5 kw.
333.3	895	Cartagena EAJ16, 1 kw.
333.3	900	Reykjavik (Iceland), 1 kw.
333.3	900	Naples (INA), 1.5 kw.
330.3	908	Königsberg (Germany), 1 kw. DAILY—7.10 p.m., Concert.
326.1	920	Bournemouth (GBM), 1.5 kw.
323.9	926	Almeria (Spain) EAJ18, 0.1 kw.
322.6	930	Breslau (Germany), 4 kw.
319.1	940	Dublin 2RN, 1.5 kw.
318	943	Lahti (Finland).
312.5	969	Newcastle (5NO), 1.5 kw.
310.2	967	Marseilles PTT, 0.5 kw. WEEKDAYS—9.0 p.m. Concert.
310.5	966	Zagreb (Yugoslavia), 0.35 kw. DAILY—6.0 p.m.
310	967	Oviedo (Spain), 0.1 kw.
306.1	980	Belfast (2 BE), 1.5 kw.
304	986	Björneborg (Finland). Relays Helsingfors.
303	990	Nürnberg (Germany), 4 kw. Relays Munich.
302	993	Paris (Radio Vitus), 1 kw. WEDNESDAYS, FRIDAYS, and SUNDAYS. From 9—10.45 p.m., Concert.
300	1000	Bratislava (Czecho-Slovakia), 0.5 kw.
297	1010	Agen (France), 0.25 kw. TUES. and FRI.—9.30 p.m., Concert.
297	1010	Liverpool (6LV), 0.2 kw.
297	1010	Varberg, 0.2 kw. Relays Göteborg.
297	1010	Jyväskylä (Finland), 0.2 kw. Relays Helsingfors.
297	1009	Hanover (Germany), 0.7 kw. Relays Hamburg.
295	1016	Rennes (France), 0.5 kw.
294.1	1020	Hull (6KH), 0.2 kw.
294.1	1020	Dundee (2DE), 0.2 kw.
294.1	1020	Stoke (6ST), 0.2 kw.
294.1	1020	Swansea (5SX), 0.2 kw.
294.1	1020	Uddevalla (Sweden), 0.25 kw. Relays Göteborg.
294.1	1020	Innsbruck (Austria), 0.5 kw. Relays Vienna.
289	1038	Lyons (Radio-Lyon), 1.5 kw. WEEKDAYS—7.15 p.m., News. WEEKDAYS (except MON.), 7.45 p.m., Concert.
288.5	1040	Edinburgh (2EH), 0.2 kw.
285.8	1050	Lille, 0.5 kw. PTT.
283	1060	Cologne (Germany), 4 kw.
278.8	1076	Trollhättan (Sweden), 1 kw. Relays Göteborg.
278	1097	Grenoble, 1 kw. WED. and SAT. only.
278	1078	Kiel (Germany), 0.7 kw. Relays Hamburg.
277.8	1080	Leeds (2LS), 0.2 kw.
275.2	1090	Dresden (Germany), 0.7 kw. Relays Leipzig.
275.2	1090	Jacobstad (Finland).
275.2	1090	Nottingham (England), 5NG, 0.2 kw.
275.2	1090	Norrköping (Sweden), 0.25 kw. Relays Stockholm.
278	1090	Bordeaux (Lafayette), PTT, 1 kw.
273	1098	Limoges (France), 0.5 kw.
272.7	1100	Sheffield (6FL), 0.2 kw.
272.7	1100	Bremen (Germany), 0.75 kw. Relays Hamburg.
272.7	1100	Danzig, 0.75 kw. DAILY—10.0 a.m., Weather. 10.30 a.m., Concert. 1.15 p.m., Exchange Quotations. 3.0 p.m., Relays Königsberg.
272.7	1100	Hudiksvall, 0.25 kw. Relays Stockholm.
272.7	1100	Klagenfurt (Austria), 1.5 kw. Relays Vienna.
268	1119	Strasbourg, 0.1 kw. TUESDAY and THURSDAY—10.0 p.m., Concert, Talk and News.
260.9	1150	Malmö (Sweden), 1 kw.
259	1160	Toulouse (France), PTT, 0.5 kw.
257	1167	Juan les Pins (Nice) (France), 0.25 kw.
254.2	1190	Kalmar (Sweden), 0.25 kw. Relays Stockholm.
252.1	1190	Cassel (Germany), 0.7 kw. Relays Frankfurt.
252.1	1190	Bradford (2LS) 0.2 kw. Transmits Leeds Programmes.
252.1	1190	Montpellier (France), 0.25 kw. WEEKDAYS—8.45 p.m., News. 9.0 p.m., Concert or Talk.
252.1	1190	Säffe (Sweden), 0.5 kw. Relays Stockholm.
250	1200	Eskestuna (Sweden), 0.25 kw. Relays Stockholm.
250	1200	Gleiwitz (Germany), 0.7 kw. Relays Breslau.
250	1200	Uleaborg (Finland). Relays Helsingfors, 0.2 kw.
243.9	1230	Tromsø (Norway).
241.9	1240	Münster (Germany) m.s. in Morse, 1.5 kw.
238.1	1260	Kiruna (Sweden), 0.25 kw. Relays Boden.
237	1265	Bordeaux, 1.5 kw.
236.7	1267	Stettin (Germany). Relays Berlin, 0.75 kw.
236.2	1270	Orebro, 0.25 kw. Relays Stockholm.
230.2	1303	Boras (Sweden), 1 kw. Relays Göteborg.
230	1304	Radio Schaerbeeck from 8.30 p.m.
229	1310	Hälsingborg, 0.25 kw. Relays Malmö.
229	1310	Umea, 0.25 kw. Relays Stockholm.
225.6	1330	Belgrade (Serbia), 2 kw.
220.6	1360	Karlstad (Sweden), 0.25 kw. Relays Stockholm.
217.4	1380	Luxembourg, 0.25 kw.
215.8	1390	Halmstad (Sweden), 0.25 kw. Relays Malmö.
214.3	1400	Viborg (Finland), 0.7 kw.
204.1	1470	Gävle (Sweden), 0.25 kw. Relays Stockholm.
204.1	1470	Kaiserslautern (Bavaria), 0.5 kw. 5.0 p.m. WEEKDAYS, and 10.0 a.m. SUNDAYS.
202.7	1480	Kristinehamn (Sweden), 0.1 kw. Relays Stockholm.
201.3	1490	Jönköping (Sweden), 0.5 kw. Relays Stockholm.
198	1515	Biarritz (Côte d'Argent, France), 0.25 kw.
196	1530	Kariskrona (Sweden), 0.25 kw. Relays Stockholm.
187.5	1600	Ornskoldsvik, 0.25 kw. Relays Sundsvall.
158	1899	Beziere (France), 0.5 kw.

U.S.A.

535.4	560	Des Moines, Ia. (WHO), 5 kw.
526	570	Chicago, Ill. (KYW), 2.5 kw.
526	570	Chicago, Ill. (KFKX), 2.5 kw.
508.2	590	Omaha, Neb. (WOW), 1 kw.
499.7	600	San Antonio, Tex. (WOAI), 5 kw.
499.7	600	Fort Worth, Tex. (WBAF), 5 kw.
491.5	610	New York (WEAF), 50 kw.
491.5	610	Portland, Ore. (KGW), 1 kw.
483.6	620	Berrien Spgs., Mich. (WEMC), 1 kw.
483.6	620	Chicago, Ill. (WCFL), 1.5 kw.

M.	Kc.	Station
475.9	630	Atlanta, Ga. (WSB), 1 kw.
468.5	640	Los Angeles, Cal. (KFI), 5 kw.
461.3	650	Shenandoah, Ia. (KFN), 2 kw.
454.3	660	Bound Brook, N.J. (WJZ), 30 kw.
447.5	670	Seattle, Wash. (KFOA), 1 kw.
440.9	680	Detroit, Mich. (WJR), 5 kw.
440.9	680	Detroit, Mich. (WCX), 5 kw.
428.3	700	Cincinnati, O. (WJW), 5 kw.
422.3	710	Newark N.J. (WOR), 3.5 kw.
416.4	720	Chicago, Ill. (WLIB), 1.5 kw.
405.2	740	Minneapolis, Min. (WCCO), 5 kw.
399.8	750	Cleveland, O. (WTAM), 3.5 kw.
394.5	780	St. Col., N.M. (KOB), 5 kw.
389.4	770	Chicago, Ill. (WBBM), 5 kw.
384.4	780	Oakland, Cal. (KGO), 5 kw.
379.5	790	Schenectady, N.Y. (WGY), 50 kw.
374.8	800	Davenport, Ia. (WOC), 5 kw.
361.2	830	Cincinnati, O. (WSAI), 5 kw.
348.6	860	Seattle, Wash. (KJR), 2.5 kw.
344.6	870	Chicago, Ill. (WLS), 5 kw.
344.6	870	Zion, Ill. (WCBD), 5 kw.
336.9	890	Nashville, Tenn. (WSM), 5 kw.
333.1	900	Springfield, Mass. (WBZ), 15 kw.
325.9	920	Denver, Colo. (KOA), 2.5 kw.
319	940	Council Bluffs, Ia. (KOIL), 5 kw.
319	940	Lincoln, Neb. (KFAB), 5 kw.
315.6	950	Pittsburgh, Pa. (KDKA), 50 kw.
309.1	970	New York (WABO), 2.5 kw.
305.9	980	Chicago, Ill. (WIBO), 3 kw.
305.9	980	Chicago, Ill. (WHT), 5 kw.
299.8	1000	St. Louis, Mo. (KMOX), 5 kw.
285.5	1050	Baltimore, Md. (WBAL), 5 kw.
285.5	1050	Boise, Idaho (KFAU), 2 kw.
282.8	1060	Columbus, O. (WAIU), 5 kw.
280.2	1070	Rochester, N.Y. (WHEM), 5 kw.
275.1	1090	Chicago, Ill. (WTAS), 3.5 kw.
272.6	1100	Atlantic City, N.J. (WPG), 5 kw.
265.3	1130	Ames, Ia. (WOI), 2.5 kw.
265.3	1130	San Antonio, Tex. (KTSA), 2 kw.
263	1140	Mt. Prospect, Ill. (WJAZ), 5 kw.
260.7	1150	Spokane, Wash. (KGA), 2 kw.
256.3	1170	Muscatine, Ia. (KTNT), 2 kw.
252	1190	Batavia, Ill. (WORD), 5 kw.
252	1190	Chicago, Ill. (WOK), 5 kw.
252	1190	Homewood, Ill. (WMBB), 5 kw.
247.8	1210	Miami Beach, Fla. (WIOD), 1 kw.
239.9	1250	Portland, Ore. (KEX), 2.5 kw.
228.9	1310	Fort Wayne, Ind. (WOWO), 2 kw.
202.6	1480	Mt. Vn. Hills, Va. (WTFB), 10 kw.
202.6	1480	Gainesville, Fla. (WBNN), 5 kw.

CANADA

516.9	580	Toronto (CKSM), 1 kw.
516.9	580	Toronto (CFRB), 1 kw.
516.9	580	Toronto (CJYC), 0.5 kw.
516.0	580	Edmonton (CNRE), 0.5 kw.
434.5	690	Ottawa (CNR), 0.5 kw.
434.5	690	Calgary (CFCN), 1.8 kw.
434.3	690	Calgary (CNR), 0.5 kw.
411	730	Montreal (CKAC), 1.2 kw.
411	730	Montreal (CNR), 1 kw.
410.7	730	Montreal (CFCP), 1.6 kw.
410.7	730	Vancouver (CHPC), 1 kw.
410.7	730	Vancouver (CKCD), 1 kw.
384.4	781	Winnipeg (CNR), 0.6 kw.
384.4	781	Winnipeg (CKY), 0.5 kw.
357	840	Toronto (CFC), 0.5 kw.
356.9	841	Red Deer (CKLC), 1 kw.
356.9	841	Toronto (CNR), 0.5 kw.
340.7	880	Quebec (CNR), 0.1 kw.
329.5	911	Saskatoon (CNR), 0.5 kw.
322.4	930	Moncton, N.B. (CNR), 0.5 kw.
312.3	960	Regina (CNR), 0.5 kw.
312.3	960	Bowmanville (CKCW), 5 kw.
296.9	1010	Moose Jaw (CJRM).
291	1030	Vancouver (CNR), 0.5 kw.

NORTH AFRICA

1850	162	Radio Carthage (Tunis) TNV, 5 kw. News, 4.0—5.20 p.m.; Concert, 6.0—9.0 p.m.
412	728	Rabat (Morocco).
310	967	Algiers (PTT), 2 kw.—Concert, 6.10 p.m.
305	984	Radio Casa-Blanca (Morocco), 2.5

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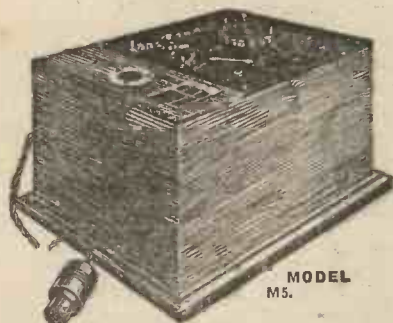
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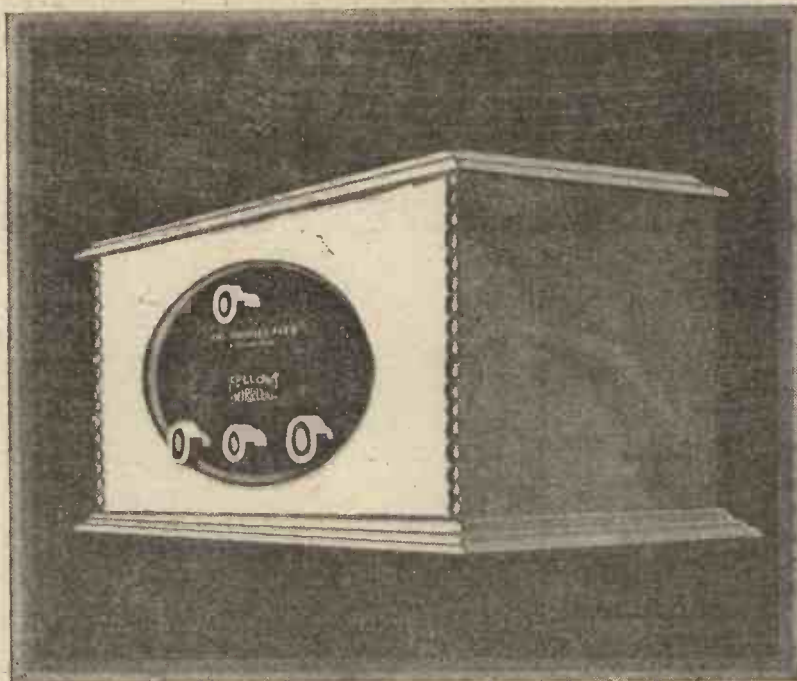
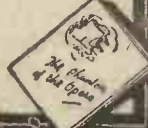
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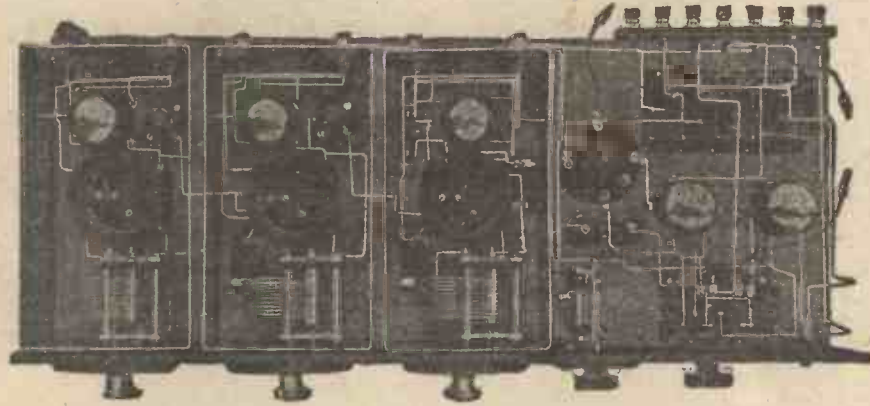
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STATION.	Aerial	1st H.F.	2nd H.F.
Unidentified	70.5	75	76
Radio Paris	71	68.5	65.5
Daventry	64	59	58
Berlin	44	44.5	44
Unidentified	34.5	35	36.5
Unidentified	31	32	33
Unidentified	20.5	29	29
Hilversum	25	24.75	25
Budapest	94.5	92	93
Munich	88	89	89
Vienna	85	86.25	86
Brussels	83.5	85	85
Daventry (5GB)	81	82	83
Langenberg	77	78.5	78.5
Oslo	75.5	77	77
Rome	73.25	75	75
Breslau	71.5	73.5	73.5
Frankfurt-on-Main	69	71.25	71
Cracow	68	70	70
Berne	65	66	67.5
Glasgow	63	67.5	67
Plymouth	62.5	66	66
Hamburg	62	65	65
Toulouse	60.75	64	64
Manchester	58.5	62.5	62.5
Stuttgart	58	62	62
London	56	59	57
Koenigsburg	45.5	50	50
Bournemouth	44.5	49	49
Paris	44	48	47
Dublin	43.5	47.5	46.5
Breslau	42	47	45.5
Newcastle	41	45	45
Belfast	38	44	42
Nuremberg	37	43.5	40.5
Liverpool and Hanover	36	41	41
Innsbruck	34.5	40	39
Edinburgh	34	37.5	38
Sheffield and Cassel	31.5	33.5	32
Lille	28	31	29.5
Toulouse	27.5	28.5	27.5
Bremen	26	27.5	25
Gleiwitz	25	26	25
Muenster	23	23	20
Orebro	22.5	20.5	19
Halmstad	10	8	8

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